

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	179 08.5 -00.3	S	22 60.0 -00.3	201 14.8 -00.9	S	22 26.0 +00.4	334 57.7 -32.5	N	23 01.4 -05.6	00			
01	194 08.2 -00.3	S	22 59.7 -00.2	216 13.9 -00.9	S	22 26.4 +00.3	349 25.2 -32.5	N	22 55.8 -05.7	01			
02	209 07.9 -00.3	S	22 59.5 -00.2	231 13.0 -01.0	S	22 26.7 +00.3	3 52.7 -32.5	N	22 50.1 -05.8	02			
03	224 07.6 -00.3	S	22 59.3 -00.2	246 12.0 -00.9	S	22 27.0 +00.3	18 20.2 -32.5	N	22 44.3 -06.0	03			
04	239 07.3 -00.3	S	22 59.1 -00.2	261 11.1 -00.9	S	22 27.3 +00.3	32 47.7 -32.4	N	22 38.3 -06.0	04			
05	254 07.0 -00.3	S	22 58.9 -00.2	276 10.2 -00.9	S	22 27.6 +00.4	47 15.3 -32.4	N	22 32.3 -06.3	05			
06	269 06.7 -00.3	S	22 58.7 -00.2	291 09.3 -00.9	S	22 28.0 +00.3	61 42.9 -32.3	N	22 26.0 -06.3	06			
07	284 06.4 -00.3	S	22 58.5 -00.2	306 08.4 -00.9	S	22 28.3 +00.3	76 10.6 -32.4	N	22 19.7 -06.5	07			
08	299 06.1 -00.3	S	22 58.3 -00.2	321 07.5 -00.9	S	22 28.6 +00.3	90 38.2 -32.3	N	22 13.2 -06.6	08			
09	314 05.8 -00.3	S	22 58.1 -00.2	336 06.6 -00.9	S	22 28.9 +00.3	105 05.9 -32.2	N	22 06.6 -06.7	09			
10	329 05.5 -00.2	S	22 57.9 -00.3	351 05.7 -00.9	S	22 29.2 +00.4	119 33.7 -32.3	N	21 59.9 -06.8	10			
11	344 05.3 -00.3	S	22 57.6 -00.2	6 04.8 -00.9	S	22 29.6 +00.3	134 01.4 -32.2	N	21 53.1 -07.0	11			
12	359 05.0 -00.3	S	22 57.4 -00.2	21 03.9 -00.9	S	22 29.9 +00.3	148 29.2 -32.1	N	21 46.1 -07.1	12			
13	14 04.7 -00.3	S	22 57.2 -00.2	36 03.0 -00.9	S	22 30.2 +00.3	162 57.1 -32.2	N	21 39.0 -07.2	13			
14	29 04.4 -00.3	S	22 57.0 -00.2	51 02.1 -01.0	S	22 30.5 +00.3	177 24.9 -32.1	N	21 31.8 -07.4	14			
15	44 04.1 -00.3	S	22 56.8 -00.2	66 01.1 -00.9	S	22 30.8 +00.3	191 52.8 -32.0	N	21 24.4 -07.4	15			
16	59 03.8 -00.3	S	22 56.6 -00.3	81 00.2 -00.9	S	22 31.1 +00.3	206 20.8 -32.0	N	21 17.0 -07.6	16			
17	74 03.5 -00.3	S	22 56.3 -00.2	95 59.3 -00.9	S	22 31.4 +00.3	220 48.8 -32.0	N	21 09.4 -07.7	17			
18	89 03.2 -00.3	S	22 56.1 -00.2	110 58.4 -00.9	S	22 31.7 +00.3	235 16.8 -32.0	N	21 01.7 -07.9	18			
19	104 02.9 -00.3	S	22 55.9 -00.2	125 57.5 -00.9	S	22 32.0 +00.3	249 44.8 -31.9	N	20 53.8 -07.9	19			
20	119 02.6 -00.3	S	22 55.7 -00.2	140 56.6 -00.9	S	22 32.3 +00.3	264 12.9 -31.8	N	20 45.9 -08.1	20			
21	134 02.3 -00.3	S	22 55.5 -00.3	155 55.7 -00.9	S	22 32.6 +00.3	278 41.1 -31.9	N	20 37.8 -08.2	21			
22	149 02.0 -00.3	S	22 55.2 -00.2	170 54.8 -00.9	S	22 32.9 +00.3	293 09.2 -31.7	N	20 29.6 -08.3	22			
23	164 01.7 -00.2	S	22 55.0 -00.2	185 53.9 -01.0	S	22 33.2 +00.3	307 37.5 -31.8	N	20 21.3 -08.4	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'5 15'5 15'5 15'5 15'5 15'6						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 56'7 56'8 56'9 57'0 57'1 57'1						
	SHA 078° 078° 078° 078° 077° 077°			SHA 100° 100° 100° 100° 099° 099°			SHA 233° 231° 228° 226° 224° 221°						
	Greenwich Culmination Time: 12:03			Greenwich Culmination Time: 10:35			Greenwich Culmination Time: 01:43						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	75 47.3 +01.5	N	11 20.7 +00.4	155 40.7 +01.9	S	20 00.7 -00.1	156 54.3 +02.1	S	20 10.5 -00.1	00			
01	90 48.8 +01.5	N	11 21.1 +00.5	170 42.6 +01.9	S	20 00.6 -00.1	171 56.4 +02.2	S	20 10.4 +00.0	01			
02	105 50.3 +01.4	N	11 21.6 +00.4	185 44.5 +01.8	S	20 00.5 -00.1	186 58.6 +02.2	S	20 10.4 -00.1	02			
03	120 51.7 +01.5	N	11 22.0 +00.4	200 46.3 +01.9	S	20 00.4 -00.2	202 00.8 +02.1	S	20 10.3 -00.1	03			
04	135 53.2 +01.4	N	11 22.4 +00.5	215 48.2 +01.9	S	20 00.2 -00.1	217 02.9 +02.2	S	20 10.2 +00.0	04			
05	150 54.6 +01.5	N	11 22.9 +00.4	230 50.1 +01.9	S	20 00.1 -00.1	232 05.1 +02.2	S	20 10.2 -00.1	05			
06	165 56.1 +01.4	N	11 23.3 +00.4	245 52.0 +01.8	S	19 60.0 -00.2	247 07.3 +02.1	S	20 10.1 +00.0	06			
07	180 57.5 +01.5	N	11 23.7 +00.5	260 53.8 +01.9	S	19 59.8 -00.1	262 09.4 +02.2	S	20 10.1 -00.1	07			
08	195 59.0 +01.4	N	11 24.2 +00.4	275 55.7 +01.9	S	19 59.7 -00.1	277 11.6 +02.2	S	20 10.0 -00.1	08			
09	211 00.4 +01.5	N	11 24.6 +00.4	290 57.6 +01.8	S	19 59.6 -00.1	292 13.8 +02.2	S	20 09.9 +00.0	09			
10	226 01.9 +01.4	N	11 25.0 +00.5	305 59.4 +01.9	S	19 59.5 -00.2	307 16.0 +02.1	S	20 09.9 -00.1	10			
11	241 03.3 +01.5	N	11 25.5 +00.4	321 01.3 +01.9	S	19 59.3 -00.1	322 18.1 +02.2	S	20 09.8 -00.1	11			
12	256 04.8 +01.4	N	11 25.9 +00.4	336 03.2 +01.9	S	19 59.2 -00.1	337 20.3 +02.2	S	20 09.7 +00.0	12			
13	271 06.2 +01.5	N	11 26.3 +00.5	351 05.1 +01.8	S	19 59.1 -00.2	352 22.5 +02.1	S	20 09.7 -00.1	13			
14	286 07.7 +01.4	N	11 26.8 +00.4	6 06.9 +01.9	S	19 58.9 -00.1	7 24.6 +02.2	S	20 09.6 +00.0	14			
15	301 09.1 +01.5	N	11 27.2 +00.5	21 08.8 +01.9	S	19 58.8 -00.1	22 26.8 +02.2	S	20 09.6 -00.1	15			
16	316 10.6 +01.4	N	11 27.7 +00.4	36 10.7 +01.8	S	19 58.7 -00.1	37 29.0 +02.1	S	20 09.5 -00.1	16			
17	331 12.0 +01.5	N	11 28.1 +00.4	51 12.5 +01.9	S	19 58.6 -00.2	52 31.1 +02.2	S	20 09.4 +00.0	17			
18	346 13.5 +01.4	N	11 28.5 +00.5	66 14.4 +01.9	S	19 58.4 -00.1	67 33.3 +02.2	S	20 09.4 -00.1	18			
19	1 14.9 +01.4	N	11 29.0 +00.4	81 16.3 +01.9	S	19 58.3 -00.1	82 35.5 +02.1	S	20 09.3 +00.0	19			
20	16 16.3 +01.5	N	11 29.4 +00.4	96 18.2 +01.8	S	19 58.2 -00.2	97 37.6 +02.2	S	20 09.3 -00.1	20			
21	31 17.8 +01.4	N	11 29.8 +00.5	111 20.0 +01.9	S	19 58.0 -00.1	112 39.8 +02.2	S	20 09.2 -00.1	21			
22	46 19.2 +01.5	N	11 30.3 +00.4	126 21.9 +01.9	S	19 57.9 -00.1	127 42.0 +02.1	S	20 09.1 +00.0	22			
23	61 20.7 +01.4	N	11 30.7 +00.4	141 23.8 +01.8	S	19 57.8 -00.2	142 44.1 +02.2	S	20 09.1 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 335° 335° 335° 335° 335° 335°			SHA 055° 055° 055° 055° 055° 055°			SHA 056° 056° 056° 056° 056° 056°						
	Greenwich Culmination Time: 18:55			Greenwich Culmination Time: 13:35			Greenwich Culmination Time: 13:30						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	179 01.5 -00.3	S	22 54.8 -00.2	200 52.9 -00.9	S	22 33.5 +00.3	322 05.7 -31.7	N	20 12.9 -08.5	00			
01	194 01.2 -00.3	S	22 54.6 -00.3	215 52.0 -00.9	S	22 33.8 +00.3	336 34.0 -31.6	N	20 04.4 -08.7	01			
02	209 00.9 -00.3	S	22 54.3 -00.2	230 51.1 -00.9	S	22 34.1 +00.3	351 02.4 -31.7	N	19 55.7 -08.7	02			
03	224 00.6 -00.3	S	22 54.1 -00.2	245 50.2 -00.9	S	22 34.4 +00.3	5 30.7 -31.5	N	19 47.0 -08.9	03			
04	239 00.3 -00.3	S	22 53.9 -00.3	260 49.3 -00.9	S	22 34.7 +00.3	19 59.2 -31.6	N	19 38.1 -09.0	04			
05	254 00.0 -00.3	S	22 53.6 -00.2	275 48.4 -00.9	S	22 35.0 +00.3	34 27.6 -31.5	N	19 29.1 -09.1	05			
06	268 59.7 -00.3	S	22 53.4 -00.2	290 47.5 -00.9	S	22 35.3 +00.3	48 56.1 -31.4	N	19 20.0 -09.2	06			
07	283 59.4 -00.3	S	22 53.2 -00.2	305 46.6 -01.0	S	22 35.6 +00.3	63 24.7 -31.4	N	19 10.8 -09.3	07			
08	298 59.1 -00.3	S	22 53.0 -00.3	320 45.6 -00.9	S	22 35.9 +00.3	77 53.3 -31.4	N	19 01.5 -09.5	08			
09	313 58.8 -00.2	S	22 52.7 -00.2	335 44.7 -00.9	S	22 36.2 +00.3	92 21.9 -31.3	N	18 52.0 -09.5	09			
10	328 58.6 -00.3	S	22 52.5 -00.2	350 43.8 -00.9	S	22 36.5 +00.3	106 50.6 -31.2	N	18 42.5 -09.6	10			
11	343 58.3 -00.3	S	22 52.3 -00.3	5 42.9 -00.9	S	22 36.8 +00.3	121 19.4 -31.3	N	18 32.9 -09.8	11			
12	358 58.0 -00.3	S	22 52.0 -00.2	20 42.0 -00.9	S	22 37.1 +00.2	135 48.1 -31.2	N	18 23.1 -09.9	12			
13	13 57.7 -00.3	S	22 51.8 -00.2	35 41.1 -01.0	S	22 37.3 +00.3	150 16.9 -31.1	N	18 13.2 -09.9	13			
14	28 57.4 -00.3	S	22 51.6 -00.3	50 40.1 -00.9	S	22 37.6 +00.3	164 45.8 -31.1	N	18 03.3 -10.1	14			
15	43 57.1 -00.3	S	22 51.3 -00.2	65 39.2 -00.9	S	22 37.9 +00.3	179 14.7 -31.0	N	17 53.2 -10.1	15			
16	58 56.8 -00.3	S	22 51.1 -00.3	80 38.3 -00.9	S	22 38.2 +00.3	193 43.7 -31.0	N	17 43.1 -10.3	16			
17	73 56.5 -00.3	S	22 50.8 -00.2	95 37.4 -00.9	S	22 38.5 +00.2	208 12.7 -31.0	N	17 32.8 -10.4	17			
18	88 56.2 -00.2	S	22 50.6 -00.2	110 36.5 -00.9	S	22 38.7 +00.3	222 41.7 -30.9	N	17 22.4 -10.4	18			
19	103 56.0 -00.3	S	22 50.4 -00.3	125 35.6 -01.0	S	22 39.0 +00.3	237 10.8 -30.9	N	17 12.0 -10.6	19			
20	118 55.7 -00.3	S	22 50.1 -00.2	140 34.6 -00.9	S	22 39.3 +00.3	251 39.9 -30.8	N	17 01.4 -10.6	20			
21	133 55.4 -00.3	S	22 49.9 -00.3	155 33.7 -00.9	S	22 39.6 +00.2	266 09.1 -30.8	N	16 50.8 -10.8	21			
22	148 55.1 -00.3	S	22 49.6 -00.2	170 32.8 -00.9	S	22 39.8 +00.3	280 38.3 -30.7	N	16 40.0 -10.8	22			
23	163 54.8 -00.3	S	22 49.4 -00.2	185 31.9 -00.9	S	22 40.1 +00.3	295 07.6 -30.7	N	16 29.2 -11.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'6 15'6 15'6 15'7 15'7 15'7						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 57'2 57'3 57'4 57'5 57'5 57'6						
	SHA 077° 077° 077° 077° 076° 076°			SHA 099° 099° 098° 098° 098° 098°			SHA 219° 217° 215° 212° 210° 208°						
	Greenwich Culmination Time: 12:04			Greenwich Culmination Time: 10:37			Greenwich Culmination Time: 02:37						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	76 22.1 +01.5	N	11 31.1 +00.5	156 25.6 +01.9	S	19 57.6 -00.1	157 46.3 +02.2	S	20 09.0 +00.0	00			
01	91 23.6 +01.4	N	11 31.6 +00.4	171 27.5 +01.9	S	19 57.5 -00.1	172 48.5 +02.1	S	20 09.0 -00.1	01			
02	106 25.0 +01.4	N	11 32.0 +00.5	186 29.4 +01.9	S	19 57.4 -00.1	187 50.6 +02.2	S	20 08.9 -00.1	02			
03	121 26.4 +01.5	N	11 32.5 +00.4	201 31.3 +01.8	S	19 57.3 -00.2	202 52.8 +02.2	S	20 08.8 +00.0	03			
04	136 27.9 +01.4	N	11 32.9 +00.4	216 33.1 +01.9	S	19 57.1 -00.1	217 55.0 +02.1	S	20 08.8 -00.1	04			
05	151 29.3 +01.5	N	11 33.3 +00.5	231 35.0 +01.9	S	19 57.0 -00.1	232 57.1 +02.2	S	20 08.7 -00.1	05			
06	166 30.8 +01.4	N	11 33.8 +00.4	246 36.9 +01.8	S	19 56.9 -00.2	247 59.3 +02.2	S	20 08.6 +00.0	06			
07	181 32.2 +01.4	N	11 34.2 +00.4	261 38.7 +01.9	S	19 56.7 -00.1	263 01.5 +02.1	S	20 08.6 -00.1	07			
08	196 33.6 +01.5	N	11 34.6 +00.5	276 40.6 +01.9	S	19 56.6 -00.1	278 03.6 +02.2	S	20 08.5 +00.0	08			
09	211 35.1 +01.4	N	11 35.1 +00.4	291 42.5 +01.9	S	19 56.5 -00.1	293 05.8 +02.2	S	20 08.5 -00.1	09			
10	226 36.5 +01.5	N	11 35.5 +00.4	306 44.4 +01.8	S	19 56.4 -00.2	308 08.0 +02.1	S	20 08.4 -00.1	10			
11	241 38.0 +01.4	N	11 35.9 +00.5	321 46.2 +01.9	S	19 56.2 -00.1	323 10.1 +02.2	S	20 08.3 +00.0	11			
12	256 39.4 +01.4	N	11 36.4 +00.4	336 48.1 +01.9	S	19 56.1 -00.1	338 12.3 +02.2	S	20 08.3 -00.1	12			
13	271 40.8 +01.5	N	11 36.8 +00.5	351 50.0 +01.8	S	19 56.0 -00.2	353 14.5 +02.1	S	20 08.2 +00.0	13			
14	286 42.3 +01.4	N	11 37.3 +00.4	6 51.8 +01.9	S	19 55.8 -00.1	8 16.6 +02.2	S	20 08.2 -00.1	14			
15	301 43.7 +01.4	N	11 37.7 +00.4	21 53.7 +01.9	S	19 55.7 -00.1	23 18.8 +02.2	S	20 08.1 -00.1	15			
16	316 45.1 +01.5	N	11 38.1 +00.5	36 55.6 +01.9	S	19 55.6 -00.2	38 21.0 +02.1	S	20 08.0 +00.0	16			
17	331 46.6 +01.4	N	11 38.6 +00.4	51 57.5 +01.8	S	19 55.4 -00.1	53 23.1 +02.2	S	20 08.0 -00.1	17			
18	346 48.0 +01.4	N	11 39.0 +00.4	66 59.3 +01.9	S	19 55.3 -00.1	68 25.3 +02.2	S	20 07.9 -00.1	18			
19	1 49.4 +01.5	N	11 39.4 +00.5	82 01.2 +01.9	S	19 55.2 -00.1	83 27.5 +02.1	S	20 07.8 +00.0	19			
20	16 50.9 +01.4	N	11 39.9 +00.4	97 03.1 +01.8	S	19 55.1 -00.2	98 29.6 +02.2	S	20 07.8 -00.1	20			
21	31 52.3 +01.4	N	11 40.3 +00.5	112 04.9 +01.9	S	19 54.9 -00.1	113 31.8 +02.2	S	20 07.7 +00.0	21			
22	46 53.7 +01.5	N	11 40.8 +00.4	127 06.8 +01.9	S	19 54.8 -00.1	128 34.0 +02.1	S	20 07.7 -00.1	22			
23	61 55.2 +01.4	N	11 41.2 +00.4	142 08.7 +01.8	S	19 54.7 -00.2	143 36.1 +02.2	S	20 07.6 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 334° 334° 334° 334° 334° 334°			SHA 055° 055° 054° 054° 054° 054°			SHA 056° 056° 056° 056° 056° 056°						
	Greenwich Culmination Time: 18:52			Greenwich Culmination Time: 13:32			Greenwich Culmination Time: 13:26						

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	178 54.5 -00.3	S	22 49.2 -00.3	200 31.0 -00.9	S	22 40.4 +00.3	309 36.9 -30.7	N	16 18.2 -11.0	00										
01	193 54.2 -00.3	S	22 48.9 -00.2	215 30.1 -01.0	S	22 40.7 +00.2	324 06.2 -30.6	N	16 07.2 -11.1	01										
02	208 53.9 -00.2	S	22 48.7 -00.3	230 29.1 -00.9	S	22 40.9 +00.3	338 35.6 -30.6	N	15 56.1 -11.2	02										
03	223 53.7 -00.3	S	22 48.4 -00.2	245 28.2 -00.9	S	22 41.2 +00.3	353 05.0 -30.5	N	15 44.9 -11.3	03										
04	238 53.4 -00.3	S	22 48.2 -00.3	260 27.3 -00.9	S	22 41.5 +00.2	7 34.5 -30.5	N	15 33.6 -11.4	04										
05	253 53.1 -00.3	S	22 47.9 -00.2	275 26.4 -00.9	S	22 41.7 +00.3	22 04.0 -30.4	N	15 22.2 -11.5	05										
06	268 52.8 -00.3	S	22 47.7 -00.3	290 25.5 -01.0	S	22 42.0 +00.3	36 33.6 -30.4	N	15 10.7 -11.5	06										
07	283 52.5 -00.3	S	22 47.4 -00.2	305 24.5 -00.9	S	22 42.3 +00.2	51 03.2 -30.4	N	14 59.2 -11.7	07										
08	298 52.2 -00.3	S	22 47.2 -00.3	320 23.6 -00.9	S	22 42.5 +00.3	65 32.8 -30.3	N	14 47.5 -11.7	08										
09	313 51.9 -00.2	S	22 46.9 -00.2	335 22.7 -00.9	S	22 42.8 +00.2	80 02.5 -30.3	N	14 35.8 -11.8	09										
10	328 51.7 -00.3	S	22 46.7 -00.3	350 21.8 -00.9	S	22 43.0 +00.3	94 32.2 -30.2	N	14 24.0 -11.9	10										
11	343 51.4 -00.3	S	22 46.4 -00.2	5 20.9 -01.0	S	22 43.3 +00.3	109 02.0 -30.2	N	14 12.1 -12.0	11										
12	358 51.1 -00.3	S	22 46.2 -00.3	20 19.9 -00.9	S	22 43.6 +00.2	123 31.8 -30.2	N	14 00.1 -12.1	12										
13	13 50.8 -00.3	S	22 45.9 -00.2	35 19.0 -00.9	S	22 43.8 +00.3	138 01.6 -30.1	N	13 48.0 -12.1	13										
14	28 50.5 -00.3	S	22 45.7 -00.3	50 18.1 -00.9	S	22 44.1 +00.2	152 31.5 -30.1	N	13 35.9 -12.2	14										
15	43 50.2 -00.3	S	22 45.4 -00.2	65 17.2 -01.0	S	22 44.3 +00.3	167 01.4 -30.0	N	13 23.7 -12.3	15										
16	58 49.9 -00.2	S	22 45.2 -00.3	80 16.2 -00.9	S	22 44.6 +00.2	181 31.4 -30.0	N	13 11.4 -12.4	16										
17	73 49.7 -00.3	S	22 44.9 -00.3	95 15.3 -00.9	S	22 44.8 +00.3	196 01.4 -30.0	N	12 59.0 -12.4	17										
18	88 49.4 -00.3	S	22 44.6 -00.2	110 14.4 -00.9	S	22 45.1 +00.2	210 31.4 -30.0	N	12 46.6 -12.5	18										
19	103 49.1 -00.3	S	22 44.4 -00.3	125 13.5 -00.9	S	22 45.3 +00.3	225 01.4 -29.9	N	12 34.1 -12.6	19										
20	118 48.8 -00.3	S	22 44.1 -00.2	140 12.6 -01.0	S	22 45.6 +00.2	239 31.5 -29.8	N	12 21.5 -12.6	20										
21	133 48.5 -00.3	S	22 43.9 -00.3	155 11.6 -00.9	S	22 45.8 +00.3	254 01.7 -29.9	N	12 08.9 -12.8	21										
22	148 48.2 -00.2	S	22 43.6 -00.3	170 10.7 -00.9	S	22 46.1 +00.2	268 31.8 -29.8	N	11 56.1 -12.7	22										
23	163 48.0 -00.3	S	22 43.3 -00.2	185 09.8 -00.9	S	22 46.3 +00.3	283 02.0 -29.7	N	11 43.4 -12.9	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16'3	16'3	16'3	16'3	16'3	16'3	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	15'7	15'7	15'8	15'8	15'8	15'8
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	57'7	57'8	57'8	57'9	58'0	58'0
SHA	076°	076°	076°	075°	075°	075°	SHA	098°	097°	097°	097°	097°	096°	SHA	206°	203°	201°	199°	197°	195°
Greenwich Culmination Time: 12:04							Greenwich Culmination Time: 10:38							Greenwich Culmination Time: 03:28						

UT	Mars				Jupiter				Saturn				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	76 56.6 +01.4	N	11 41.6 +00.5	157 10.5 +01.9	S	19 54.5 -00.1	158 38.3 +02.1	S	20 07.5 +00.0	00										
01	91 58.0 +01.4	N	11 42.1 +00.4	172 12.4 +01.9	S	19 54.4 -00.1	173 40.4 +02.2	S	20 07.5 -00.1	01										
02	106 59.4 +01.5	N	11 42.5 +00.5	187 14.3 +01.9	S	19 54.3 -00.2	188 42.6 +02.2	S	20 07.4 +00.0	02										
03	122 00.9 +01.4	N	11 43.0 +00.4	202 16.2 +01.8	S	19 54.1 -00.1	203 44.8 +02.1	S	20 07.4 -00.1	03										
04	137 02.3 +01.4	N	11 43.4 +00.4	217 18.0 +01.9	S	19 54.0 -00.1	218 46.9 +02.2	S	20 07.3 -00.1	04										
05	152 03.7 +01.5	N	11 43.8 +00.5	232 19.9 +01.9	S	19 53.9 -00.2	233 49.1 +02.2	S	20 07.2 +00.0	05										
06	167 05.2 +01.4	N	11 44.3 +00.4	247 21.8 +01.8	S	19 53.7 -00.1	248 51.3 +02.1	S	20 07.2 -00.1	06										
07	182 06.6 +01.4	N	11 44.7 +00.4	262 23.6 +01.9	S	19 53.6 -00.1	263 53.4 +02.2	S	20 07.1 -00.1	07										
08	197 08.0 +01.4	N	11 45.1 +00.5	277 25.5 +01.9	S	19 53.5 -00.1	278 55.6 +02.2	S	20 07.0 +00.0	08										
09	212 09.4 +01.5	N	11 45.6 +00.4	292 27.4 +01.8	S	19 53.4 -00.2	293 57.8 +02.1	S	20 07.0 -00.1	09										
10	227 10.9 +01.4	N	11 46.0 +00.5	307 29.2 +01.9	S	19 53.2 -00.1	308 59.9 +02.2	S	20 06.9 +00.0	10										
11	242 12.3 +01.4	N	11 46.5 +00.4	322 31.1 +01.9	S	19 53.1 -00.1	324 02.1 +02.2	S	20 06.9 -00.1	11										
12	257 13.7 +01.4	N	11 46.9 +00.4	337 33.0 +01.9	S	19 53.0 -00.2	339 04.3 +02.1	S	20 06.8 -00.1	12										
13	272 15.1 +01.5	N	11 47.3 +00.5	352 34.9 +01.8	S	19 52.8 -00.1	354 06.4 +02.2	S	20 06.7 +00.0	13										
14	287 16.6 +01.4	N	11 47.8 +00.4	7 36.7 +01.9	S	19 52.7 -00.1	9 08.6 +02.2	S	20 06.7 -00.1	14										
15	302 18.0 +01.4	N	11 48.2 +00.5	22 38.6 +01.9	S	19 52.6 -00.2	24 10.8 +02.1	S	20 06.6 -00.1	15										
16	317 19.4 +01.4	N	11 48.7 +00.4	37 40.5 +01.8	S	19 52.4 -00.1	39 12.9 +02.2	S	20 06.5 +00.0	16										
17	332 20.8 +01.4	N	11 49.1 +00.4	52 42.3 +01.9	S	19 52.3 -00.1	54 15.1 +02.2	S	20 06.5 -00.1	17										
18	347 22.2 +01.5	N	11 49.5 +00.5	67 44.2 +01.9	S	19 52.2 -00.2	69 17.3 +02.1	S	20 06.4 +00.0	18										
19	2 23.7 +01.4	N	11 50.0 +00.4	82 46.1 +01.8	S	19 52.0 -00.1	84 19.4 +02.2	S	20 06.4 -00.1	19										
20	17 25.1 +01.4	N	11 50.4 +00.5	97 47.9 +01.9	S	19 51.9 -00.1	99 21.6 +02.2	S	20 06.3 -00.1	20										
21	32 26.5 +01.4	N	11 50.9 +00.4	112 49.8 +01.9	S	19 51.8 -00.2	114 23.8 +02.1	S	20 06.2 +00.0	21										
22	47 27.9 +01.4	N	11 51.3 +00.4	127 51.7 +01.8	S	19 51.6 -00.1	129 25.9 +02.2	S	20 06.2 -00.1	22										
23	62 29.3 +01.5	N	11 51.7 +00.5	142 53.5 +01.9	S	19 51.5 -00.1	144 28.1 +02.2	S	20 06.1 +00.0	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	00'3	00'3	00'3	00'3	00'3	00'3	SD	00'1	00'1	00'1	00'1	00'1	00'1
HP	00'2	00'2	00'2	00'2	00'2	00'2	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP	00'0	00'0	00'0	00'0	00'0	00'0
SHA	334°	334°	334°	334°	334°	334°	SHA	054°	054°	054°	054°	054°	054°	SHA	056°	056°	056°	056°	056°	056°
Greenwich Culmination Time: 18:50							Greenwich Culmination Time: 13:29							Greenwich Culmination Time: 13:23						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 47.7 -00.3	S	22 43.1 -00.3	200 08.9 -01.0	S	22 46.6 +00.2	297 32.3 -29.8	N	11 30.5 -12.9	00			
01	193 47.4 -00.3	S	22 42.8 -00.2	215 07.9 -00.9	S	22 46.8 +00.2	312 02.5 -29.7	N	11 17.6 -13.0	01			
02	208 47.1 -00.3	S	22 42.6 -00.3	230 07.0 -00.9	S	22 47.0 +00.3	326 32.8 -29.6	N	11 04.6 -13.1	02			
03	223 46.8 -00.3	S	22 42.3 -00.3	245 06.1 -00.9	S	22 47.3 +00.2	341 03.2 -29.7	N	10 51.5 -13.1	03			
04	238 46.5 -00.2	S	22 42.0 -00.2	260 05.2 -01.0	S	22 47.5 +00.2	355 33.5 -29.6	N	10 38.4 -13.2	04			
05	253 46.3 -00.3	S	22 41.8 -00.3	275 04.2 -00.9	S	22 47.7 +00.3	10 03.9 -29.6	N	10 25.2 -13.2	05			
06	268 46.0 -00.3	S	22 41.5 -00.3	290 03.3 -00.9	S	22 48.0 +00.2	24 34.3 -29.5	N	10 12.0 -13.3	06			
07	283 45.7 -00.3	S	22 41.2 -00.2	305 02.4 -00.9	S	22 48.2 +00.3	39 04.8 -29.6	N	09 58.7 -13.3	07			
08	298 45.4 -00.3	S	22 41.0 -00.3	320 01.5 -01.0	S	22 48.5 +00.2	53 35.2 -29.5	N	09 45.4 -13.4	08			
09	313 45.1 -00.2	S	22 40.7 -00.3	335 00.5 -00.9	S	22 48.7 +00.2	68 05.7 -29.5	N	09 32.0 -13.5	09			
10	328 44.9 -00.3	S	22 40.4 -00.3	349 59.6 -00.9	S	22 48.9 +00.2	82 36.2 -29.4	N	09 18.5 -13.5	10			
11	343 44.6 -00.3	S	22 40.1 -00.2	4 58.7 -00.9	S	22 49.1 +00.3	97 06.8 -29.5	N	09 05.0 -13.6	11			
12	358 44.3 -00.3	S	22 39.9 -00.3	19 57.8 -01.0	S	22 49.4 +00.2	111 37.3 -29.4	N	08 51.4 -13.6	12			
13	13 44.0 -00.3	S	22 39.6 -00.3	34 56.8 -00.9	S	22 49.6 +00.2	126 07.9 -29.4	N	08 37.8 -13.7	13			
14	28 43.7 -00.3	S	22 39.3 -00.3	49 55.9 -00.9	S	22 49.8 +00.3	140 38.5 -29.3	N	08 24.1 -13.7	14			
15	43 43.4 -00.2	S	22 39.0 -00.2	64 55.0 -01.0	S	22 50.1 +00.2	155 09.2 -29.4	N	08 10.4 -13.8	15			
16	58 43.2 -00.3	S	22 38.8 -00.3	79 54.0 -00.9	S	22 50.3 +00.2	169 39.8 -29.3	N	07 56.6 -13.8	16			
17	73 42.9 -00.3	S	22 38.5 -00.3	94 53.1 -00.9	S	22 50.5 +00.2	184 10.5 -29.3	N	07 42.8 -13.9	17			
18	88 42.6 -00.3	S	22 38.2 -00.3	109 52.2 -00.9	S	22 50.7 +00.2	198 41.2 -29.3	N	07 28.9 -13.9	18			
19	103 42.3 -00.3	S	22 37.9 -00.2	124 51.3 -01.0	S	22 50.9 +00.3	213 11.9 -29.3	N	07 15.0 -14.0	19			
20	118 42.0 -00.2	S	22 37.7 -00.3	139 50.3 -00.9	S	22 51.2 +00.2	227 42.6 -29.3	N	07 01.0 -14.0	20			
21	133 41.8 -00.3	S	22 37.4 -00.3	154 49.4 -00.9	S	22 51.4 +00.2	242 13.3 -29.2	N	06 47.0 -14.0	21			
22	148 41.5 -00.3	S	22 37.1 -00.3	169 48.5 -01.0	S	22 51.6 +00.2	256 44.1 -29.2	N	06 33.0 -14.1	22			
23	163 41.2 -00.3	S	22 36.8 -00.3	184 47.5 -00.9	S	22 51.8 +00.2	271 14.9 -29.3	N	06 18.9 -14.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'8 15'9 15'9 15'9 15'9 15'9						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 58'1 58'2 58'3 58'3 58'4 58'5						
	SHA 075° 075° 075° 074° 074° 074°			SHA 096° 096° 096° 096° 095° 095°			SHA 193° 191° 188° 186° 184° 182°						
	Greenwich Culmination Time: 12:05			Greenwich Culmination Time: 10:40			Greenwich Culmination Time: 04:18						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	77 30.8 +01.4	N	11 52.2 +00.4	157 55.4 +01.9	S	19 51.4 -00.1	159 30.3 +02.1	S	20 06.1 -00.1	00			
01	92 32.2 +01.4	N	11 52.6 +00.5	172 57.3 +01.9	S	19 51.3 -00.2	174 32.4 +02.2	S	20 06.0 -00.1	01			
02	107 33.6 +01.4	N	11 53.1 +00.4	187 59.2 +01.8	S	19 51.1 -00.1	189 34.6 +02.1	S	20 05.9 +00.0	02			
03	122 35.0 +01.4	N	11 53.5 +00.4	203 01.0 +01.9	S	19 51.0 -00.1	204 36.7 +02.2	S	20 05.9 -00.1	03			
04	137 36.4 +01.4	N	11 53.9 +00.5	218 02.9 +01.9	S	19 50.9 -00.2	219 38.9 +02.2	S	20 05.8 -00.1	04			
05	152 37.8 +01.5	N	11 54.4 +00.4	233 04.8 +01.8	S	19 50.7 -00.1	234 41.1 +02.1	S	20 05.7 +00.0	05			
06	167 39.3 +01.4	N	11 54.8 +00.4	248 06.6 +01.9	S	19 50.6 -00.1	249 43.2 +02.2	S	20 05.7 -00.1	06			
07	182 40.7 +01.4	N	11 55.2 +00.5	263 08.5 +01.9	S	19 50.5 -00.2	264 45.4 +02.2	S	20 05.6 +00.0	07			
08	197 42.1 +01.4	N	11 55.7 +00.4	278 10.4 +01.8	S	19 50.3 -00.1	279 47.6 +02.1	S	20 05.6 -00.1	08			
09	212 43.5 +01.4	N	11 56.1 +00.5	293 12.2 +01.9	S	19 50.2 -00.1	294 49.7 +02.2	S	20 05.5 -00.1	09			
10	227 44.9 +01.4	N	11 56.6 +00.4	308 14.1 +01.9	S	19 50.1 -00.2	309 51.9 +02.2	S	20 05.4 +00.0	10			
11	242 46.3 +01.4	N	11 57.0 +00.5	323 16.0 +01.8	S	19 49.9 -00.1	324 54.1 +02.1	S	20 05.4 -00.1	11			
12	257 47.7 +01.4	N	11 57.5 +00.4	338 17.8 +01.9	S	19 49.8 -00.1	339 56.2 +02.2	S	20 05.3 -00.1	12			
13	272 49.1 +01.5	N	11 57.9 +00.4	353 19.7 +01.9	S	19 49.7 -00.2	354 58.4 +02.2	S	20 05.2 +00.0	13			
14	287 50.6 +01.4	N	11 58.3 +00.5	8 21.6 +01.8	S	19 49.5 -00.1	10 00.6 +02.1	S	20 05.2 -00.1	14			
15	302 52.0 +01.4	N	11 58.8 +00.4	23 23.4 +01.9	S	19 49.4 -00.1	25 02.7 +02.2	S	20 05.1 +00.0	15			
16	317 53.4 +01.4	N	11 59.2 +00.5	38 25.3 +01.9	S	19 49.3 -00.2	40 04.9 +02.1	S	20 05.1 -00.1	16			
17	332 54.8 +01.4	N	11 59.7 +00.4	53 27.2 +01.8	S	19 49.1 -00.1	55 07.0 +02.2	S	20 05.0 -00.1	17			
18	347 56.2 +01.4	N	12 00.1 +00.4	68 29.0 +01.9	S	19 49.0 -00.1	70 09.2 +02.2	S	20 04.9 +00.0	18			
19	2 57.6 +01.4	N	12 00.5 +00.5	83 30.9 +01.9	S	19 48.9 -00.2	85 11.4 +02.1	S	20 04.9 -00.1	19			
20	17 59.0 +01.4	N	12 01.0 +00.4	98 32.8 +01.9	S	19 48.7 -00.1	100 13.5 +02.2	S	20 04.8 -00.1	20			
21	33 00.4 +01.4	N	12 01.4 +00.5	113 34.7 +01.8	S	19 48.6 -00.1	115 15.7 +02.2	S	20 04.7 +00.0	21			
22	48 01.8 +01.4	N	12 01.9 +00.4	128 36.5 +01.9	S	19 48.5 -00.2	130 17.9 +02.1	S	20 04.7 -00.1	22			
23	63 03.2 +01.4	N	12 02.3 +00.4	143 38.4 +01.9	S	19 48.3 -00.1	145 20.0 +02.2	S	20 04.6 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 334° 334° 334° 333° 333° 333°			SHA 054° 054° 054° 054° 054° 054°			SHA 056° 056° 056° 056° 056° 056°						
	Greenwich Culmination Time: 18:48			Greenwich Culmination Time: 13:26			Greenwich Culmination Time: 13:20						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> A: 71%				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 40.9 -00.2	S	22 36.5 -00.2	199 46.6 -00.9	S	22 52.0 +00.2	285 45.6 -29.2	N	06 04.8 -14.2	00			
01	193 40.7 -00.3	S	22 36.3 -00.3	214 45.7 -00.9	S	22 52.2 +00.3	300 16.4 -29.2	N	05 50.6 -14.2	01			
02	208 40.4 -00.3	S	22 36.0 -00.3	229 44.8 -01.0	S	22 52.5 +00.2	314 47.2 -29.2	N	05 36.4 -14.2	02			
03	223 40.1 -00.3	S	22 35.7 -00.3	244 43.8 -00.9	S	22 52.7 +00.2	329 18.0 -29.2	N	05 22.2 -14.3	03			
04	238 39.8 -00.3	S	22 35.4 -00.3	259 42.9 -00.9	S	22 52.9 +00.2	343 48.8 -29.1	N	05 07.9 -14.3	04			
05	253 39.5 -00.2	S	22 35.1 -00.3	274 42.0 -01.0	S	22 53.1 +00.2	358 19.7 -29.2	N	04 53.6 -14.3	05			
06	268 39.3 -00.3	S	22 34.8 -00.2	289 41.0 -00.9	S	22 53.3 +00.2	12 50.5 -29.2	N	04 39.3 -14.4	06			
07	283 39.0 -00.3	S	22 34.6 -00.3	304 40.1 -00.9	S	22 53.5 +00.2	27 21.3 -29.1	N	04 24.9 -14.4	07			
08	298 38.7 -00.3	S	22 34.3 -00.3	319 39.2 -01.0	S	22 53.7 +00.2	41 52.2 -29.2	N	04 10.5 -14.4	08			
09	313 38.4 -00.3	S	22 34.0 -00.3	334 38.2 -00.9	S	22 53.9 +00.2	56 23.0 -29.1	N	03 56.1 -14.5	09			
10	328 38.1 -00.2	S	22 33.7 -00.3	349 37.3 -00.9	S	22 54.1 +00.2	70 53.9 -29.2	N	03 41.6 -14.4	10			
11	343 37.9 -00.3	S	22 33.4 -00.3	4 36.4 -00.9	S	22 54.3 +00.2	85 24.7 -29.1	N	03 27.2 -14.5	11			
12	358 37.6 -00.3	S	22 33.1 -00.3	19 35.5 -01.0	S	22 54.5 +00.2	99 55.6 -29.2	N	03 12.7 -14.6	12			
13	13 37.3 -00.3	S	22 32.8 -00.3	34 34.5 -00.9	S	22 54.7 +00.2	114 26.4 -29.2	N	02 58.1 -14.5	13			
14	28 37.0 -00.2	S	22 32.5 -00.3	49 33.6 -00.9	S	22 54.9 +00.2	128 57.2 -29.1	N	02 43.6 -14.6	14			
15	43 36.8 -00.3	S	22 32.2 -00.3	64 32.7 -01.0	S	22 55.1 +00.2	143 28.1 -29.2	N	02 29.0 -14.6	15			
16	58 36.5 -00.3	S	22 31.9 -00.2	79 31.7 -00.9	S	22 55.3 +00.2	157 58.9 -29.2	N	02 14.4 -14.6	16			
17	73 36.2 -00.3	S	22 31.7 -00.3	94 30.8 -00.9	S	22 55.5 +00.2	172 29.7 -29.1	N	01 59.8 -14.6	17			
18	88 35.9 -00.2	S	22 31.4 -00.3	109 29.9 -01.0	S	22 55.7 +00.2	187 00.6 -29.2	N	01 45.2 -14.6	18			
19	103 35.7 -00.3	S	22 31.1 -00.3	124 28.9 -00.9	S	22 55.9 +00.2	201 31.4 -29.2	N	01 30.6 -14.7	19			
20	118 35.4 -00.3	S	22 30.8 -00.3	139 28.0 -00.9	S	22 56.1 +00.1	216 02.2 -29.2	N	01 15.9 -14.7	20			
21	133 35.1 -00.3	S	22 30.5 -00.3	154 27.1 -01.0	S	22 56.2 +00.2	230 33.0 -29.2	N	01 01.2 -14.6	21			
22	148 34.8 -00.2	S	22 30.2 -00.3	169 26.1 -00.9	S	22 56.4 +00.2	245 03.8 -29.3	N	00 46.6 -14.7	22			
23	163 34.6 -00.3	S	22 29.9 -00.3	184 25.2 -00.9	S	22 56.6 +00.2	259 34.5 -29.2	N	00 31.9 -14.7	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'9 16'0 16'0 16'0 16'0 16'0						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 58'5 58'6 58'7 58'7 58'8 58'8						
	SHA 074° 074° 073° 073° 073° 073°			SHA 095° 095° 094° 094° 094° 094°			SHA 180° 178° 176° 174° 171° 169°						
	Greenwich Culmination Time: 12:05			Greenwich Culmination Time: 10:41			Greenwich Culmination Time: 05:06						

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	78 04.6 +01.4	N	12 02.7 +00.5	158 40.3 +01.8	S	19 48.2 -00.1	160 22.2 +02.2	S	20 04.6 -00.1	00			
01	93 06.0 +01.4	N	12 03.2 +00.4	173 42.1 +01.9	S	19 48.1 -00.1	175 24.4 +02.1	S	20 04.5 -00.1	01			
02	108 07.4 +01.5	N	12 03.6 +00.5	188 44.0 +01.9	S	19 48.0 -00.2	190 26.5 +02.2	S	20 04.4 +00.0	02			
03	123 08.9 +01.4	N	12 04.1 +00.4	203 45.9 +01.8	S	19 47.8 -00.1	205 28.7 +02.2	S	20 04.4 -00.1	03			
04	138 10.3 +01.4	N	12 04.5 +00.4	218 47.7 +01.9	S	19 47.7 -00.1	220 30.9 +02.1	S	20 04.3 -00.1	04			
05	153 11.7 +01.4	N	12 04.9 +00.5	233 49.6 +01.9	S	19 47.6 -00.2	235 33.0 +02.2	S	20 04.2 +00.0	05			
06	168 13.1 +01.4	N	12 05.4 +00.4	248 51.5 +01.8	S	19 47.4 -00.1	250 35.2 +02.1	S	20 04.2 -00.1	06			
07	183 14.5 +01.4	N	12 05.8 +00.5	263 53.3 +01.9	S	19 47.3 -00.1	265 37.3 +02.2	S	20 04.1 +00.0	07			
08	198 15.9 +01.4	N	12 06.3 +00.4	278 55.2 +01.9	S	19 47.2 -00.2	280 39.5 +02.2	S	20 04.1 -00.1	08			
09	213 17.3 +01.4	N	12 06.7 +00.4	293 57.1 +01.8	S	19 47.0 -00.1	295 41.7 +02.1	S	20 04.0 -00.1	09			
10	228 18.7 +01.4	N	12 07.1 +00.5	308 58.9 +01.9	S	19 46.9 -00.1	310 43.8 +02.2	S	20 03.9 +00.0	10			
11	243 20.1 +01.4	N	12 07.6 +00.4	324 00.8 +01.9	S	19 46.8 -00.2	325 46.0 +02.2	S	20 03.9 -00.1	11			
12	258 21.5 +01.4	N	12 08.0 +00.5	339 02.7 +01.8	S	19 46.6 -00.1	340 48.2 +02.1	S	20 03.8 -00.1	12			
13	273 22.9 +01.4	N	12 08.5 +00.4	354 04.5 +01.9	S	19 46.5 -00.1	355 50.3 +02.2	S	20 03.7 +00.0	13			
14	288 24.3 +01.4	N	12 08.9 +00.5	9 06.4 +01.9	S	19 46.4 -00.2	10 52.5 +02.2	S	20 03.7 -00.1	14			
15	303 25.7 +01.4	N	12 09.4 +00.4	24 08.3 +01.8	S	19 46.2 -00.1	25 54.7 +02.1	S	20 03.6 +00.0	15			
16	318 27.1 +01.4	N	12 09.8 +00.4	39 10.1 +01.9	S	19 46.1 -00.1	40 56.8 +02.2	S	20 03.6 -00.1	16			
17	333 28.5 +01.4	N	12 10.2 +00.5	54 12.0 +01.9	S	19 46.0 -00.2	55 59.0 +02.1	S	20 03.5 -00.1	17			
18	348 29.9 +01.3	N	12 10.7 +00.4	69 13.9 +01.8	S	19 45.8 -00.1	71 01.1 +02.2	S	20 03.4 +00.0	18			
19	3 31.2 +01.4	N	12 11.1 +00.5	84 15.7 +01.9	S	19 45.7 -00.1	86 03.3 +02.2	S	20 03.4 -00.1	19			
20	18 32.6 +01.4	N	12 11.6 +00.4	99 17.6 +01.9	S	19 45.6 -00.2	101 05.5 +02.1	S	20 03.3 -00.1	20			
21	33 34.0 +01.4	N	12 12.0 +00.4	114 19.5 +01.8	S	19 45.4 -00.1	116 07.6 +02.2	S	20 03.2 +00.0	21			
22	48 35.4 +01.4	N	12 12.4 +00.5	129 21.3 +01.9	S	19 45.3 -00.1	131 09.8 +02.2	S	20 03.2 -00.1	22			
23	63 36.8 +01.4	N	12 12.9 +00.4	144 23.2 +01.9	S	19 45.2 -00.2	146 12.0 +02.1	S	20 03.1 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 333° 333° 333° 333° 333° 333°			SHA 054° 054° 054° 054° 054° 054°			SHA 056° 056° 056° 055° 055° 055°						
	Greenwich Culmination Time: 18:45			Greenwich Culmination Time: 13:23			Greenwich Culmination Time: 13:16						

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	178 34.3 -00.3	S	22 29.6 -00.3	199 24.3 -01.0	S	22 56.8 +00.2	274 05.3 -29.2	N	00 17.2 -14.8	00										
01	193 34.0 -00.3	S	22 29.3 -00.3	214 23.3 -00.9	S	22 57.0 +00.2	288 36.1 -29.3	N	00 02.4 -14.7	01										
02	208 33.7 -00.2	S	22 29.0 -00.3	229 22.4 -00.9	S	22 57.2 +00.2	303 06.8 -29.3	S	00 12.3 +14.7	02										
03	223 33.5 -00.3	S	22 28.7 -00.3	244 21.5 -01.0	S	22 57.4 +00.1	317 37.5 -29.3	S	00 27.0 +14.7	03										
04	238 33.2 -00.3	S	22 28.4 -00.3	259 20.5 -00.9	S	22 57.5 +00.2	332 08.2 -29.3	S	00 41.7 +14.8	04										
05	253 32.9 -00.3	S	22 28.1 -00.3	274 19.6 -00.9	S	22 57.7 +00.2	346 38.9 -29.4	S	00 56.5 +14.7	05										
06	268 32.6 -00.2	S	22 27.8 -00.3	289 18.7 -01.0	S	22 57.9 +00.2	1 09.5 -29.3	S	01 11.2 +14.7	06										
07	283 32.4 -00.3	S	22 27.5 -00.4	304 17.7 -00.9	S	22 58.1 +00.1	15 40.2 -29.4	S	01 25.9 +14.8	07										
08	298 32.1 -00.3	S	22 27.1 -00.3	319 16.8 -00.9	S	22 58.2 +00.2	30 10.8 -29.4	S	01 40.7 +14.7	08										
09	313 31.8 -00.3	S	22 26.8 -00.3	334 15.9 -01.0	S	22 58.4 +00.2	44 41.4 -29.5	S	01 55.4 +14.7	09										
10	328 31.5 -00.2	S	22 26.5 -00.3	349 14.9 -00.9	S	22 58.6 +00.2	59 11.9 -29.4	S	02 10.1 +14.8	10										
11	343 31.3 -00.3	S	22 26.2 -00.3	4 14.0 -01.0	S	22 58.8 +00.1	73 42.5 -29.5	S	02 24.9 +14.7	11										
12	358 31.0 -00.3	S	22 25.9 -00.3	19 13.0 -00.9	S	22 58.9 +00.2	88 13.0 -29.5	S	02 39.6 +14.7	12										
13	13 30.7 -00.2	S	22 25.6 -00.3	34 12.1 -00.9	S	22 59.1 +00.2	102 43.5 -29.5	S	02 54.3 +14.7	13										
14	28 30.5 -00.3	S	22 25.3 -00.3	49 11.2 -01.0	S	22 59.3 +00.1	117 14.0 -29.6	S	03 09.0 +14.7	14										
15	43 30.2 -00.3	S	22 25.0 -00.3	64 10.2 -00.9	S	22 59.4 +00.2	131 44.4 -29.6	S	03 23.7 +14.7	15										
16	58 29.9 -00.3	S	22 24.7 -00.3	79 09.3 -00.9	S	22 59.6 +00.2	146 14.8 -29.7	S	03 38.4 +14.7	16										
17	73 29.6 -00.2	S	22 24.4 -00.4	94 08.4 -01.0	S	22 59.8 +00.1	160 45.1 -29.6	S	03 53.1 +14.7	17										
18	88 29.4 -00.3	S	22 24.0 -00.3	109 07.4 -00.9	S	22 59.9 +00.2	175 15.5 -29.7	S	04 07.8 +14.6	18										
19	103 29.1 -00.3	S	22 23.7 -00.3	124 06.5 -00.9	S	23 00.1 +00.2	189 45.8 -29.8	S	04 22.4 +14.6	19										
20	118 28.8 -00.2	S	22 23.4 -00.3	139 05.6 -01.0	S	23 00.3 +00.1	204 16.0 -29.7	S	04 37.0 +14.6	20										
21	133 28.6 -00.3	S	22 23.1 -00.3	154 04.6 -00.9	S	23 00.4 +00.2	218 46.3 -29.9	S	04 51.6 +14.6	21										
22	148 28.3 -00.3	S	22 22.8 -00.3	169 03.7 -01.0	S	23 00.6 +00.1	233 16.4 -29.8	S	05 06.2 +14.6	22										
23	163 28.0 -00.3	S	22 22.5 -00.4	184 02.7 -00.9	S	23 00.7 +00.2	247 46.6 -29.9	S	05 20.8 +14.6	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16'3	16'3	16'3	16'3	16'3	16'3	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	16'0	16'1	16'1	16'1	16'1	16'1
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	58'9	59'0	59'0	59'1	59'1	59'2
SHA	073°	073°	072°	072°	072°	072°	SHA	093°	093°	093°	093°	093°	092°	SHA	167°	165°	163°	161°	159°	157°
Greenwich Culmination Time: 12:05							Greenwich Culmination Time: 10:43							Greenwich Culmination Time: 05:55						

UT	Mars				Jupiter				Saturn				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	78 38.2 +01.4	N	12 13.3 +00.5	159 25.1 +01.8	S	19 45.0 -00.1	161 14.1 +02.2	S	20 03.1 -00.1	00										
01	93 39.6 +01.4	N	12 13.8 +00.4	174 26.9 +01.9	S	19 44.9 -00.1	176 16.3 +02.1	S	20 03.0 -00.1	01										
02	108 41.0 +01.4	N	12 14.2 +00.5	189 28.8 +01.9	S	19 44.8 -00.2	191 18.4 +02.2	S	20 02.9 +00.0	02										
03	123 42.4 +01.4	N	12 14.7 +00.4	204 30.7 +01.8	S	19 44.6 -00.1	206 20.6 +02.2	S	20 02.9 -00.1	03										
04	138 43.8 +01.4	N	12 15.1 +00.4	219 32.5 +01.9	S	19 44.5 -00.1	221 22.8 +02.1	S	20 02.8 -00.1	04										
05	153 45.2 +01.4	N	12 15.5 +00.5	234 34.4 +01.9	S	19 44.4 -00.2	236 24.9 +02.2	S	20 02.7 +00.0	05										
06	168 46.6 +01.4	N	12 16.0 +00.4	249 36.3 +01.8	S	19 44.2 -00.1	251 27.1 +02.2	S	20 02.7 -00.1	06										
07	183 48.0 +01.4	N	12 16.4 +00.5	264 38.1 +01.9	S	19 44.1 -00.2	266 29.3 +02.1	S	20 02.6 +00.0	07										
08	198 49.4 +01.3	N	12 16.9 +00.4	279 40.0 +01.9	S	19 43.9 -00.1	281 31.4 +02.2	S	20 02.6 -00.1	08										
09	213 50.7 +01.4	N	12 17.3 +00.5	294 41.9 +01.8	S	19 43.8 -00.1	296 33.6 +02.1	S	20 02.5 -00.1	09										
10	228 52.1 +01.4	N	12 17.8 +00.4	309 43.7 +01.9	S	19 43.7 -00.2	311 35.7 +02.2	S	20 02.4 +00.0	10										
11	243 53.5 +01.4	N	12 18.2 +00.4	324 45.6 +01.9	S	19 43.5 -00.1	326 37.9 +02.2	S	20 02.4 -00.1	11										
12	258 54.9 +01.4	N	12 18.6 +00.5	339 47.5 +01.8	S	19 43.4 -00.1	341 40.1 +02.1	S	20 02.3 -00.1	12										
13	273 56.3 +01.4	N	12 19.1 +00.4	354 49.3 +01.9	S	19 43.3 -00.2	356 42.2 +02.2	S	20 02.2 +00.0	13										
14	288 57.7 +01.4	N	12 19.5 +00.5	9 51.2 +01.9	S	19 43.1 -00.1	11 44.4 +02.2	S	20 02.2 -00.1	14										
15	303 59.1 +01.4	N	12 20.0 +00.4	24 53.1 +01.8	S	19 43.0 -00.1	26 46.6 +02.1	S	20 02.1 -00.1	15										
16	319 00.5 +01.3	N	12 20.4 +00.5	39 54.9 +01.9	S	19 42.9 -00.2	41 48.7 +02.2	S	20 02.0 +00.0	16										
17	334 01.8 +01.4	N	12 20.9 +00.4	54 56.8 +01.9	S	19 42.7 -00.1	56 50.9 +02.1	S	20 02.0 -00.1	17										
18	349 03.2 +01.4	N	12 21.3 +00.4	69 58.7 +01.8	S	19 42.6 -00.1	71 53.0 +02.2	S	20 01.9 +00.0	18										
19	4 04.6 +01.4	N	12 21.7 +00.5	85 00.5 +01.9	S	19 42.5 -00.2	86 55.2 +02.2	S	20 01.9 -00.1	19										
20	19 06.0 +01.4	N	12 22.2 +00.4	100 02.4 +01.9	S	19 42.3 -00.1	101 57.4 +02.1	S	20 01.8 -00.1	20										
21	34 07.4 +01.4	N	12 22.6 +00.5	115 04.3 +01.8	S	19 42.2 -00.1	116 59.5 +02.2	S	20 01.7 +00.0	21										
22	49 08.8 +01.3	N	12 23.1 +00.4	130 06.1 +01.9	S	19 42.1 -00.2	132 01.7 +02.2	S	20 01.7 -00.1	22										
23	64 10.1 +01.4	N	12 23.5 +00.5	145 08.0 +01.9	S	19 41.9 -00.1	147 03.9 +02.1	S	20 01.6 -00.1	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	00'3	00'3	00'3	00'3	00'3	00'3	SD	00'1	00'1	00'1	00'1	00'1	00'1
HP	00'2	00'2	00'2	00'2	00'2	00'2	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP	00'0	00'0	00'0	00'0	00'0	00'0
SHA	333°	333°	333°	333°	333°	332°	SHA	054°	054°	054°	053°	053°	053°	SHA	055°	055°	055°	055°	055°	055°
Greenwich Culmination Time: 18:43							Greenwich Culmination Time: 13:20							Greenwich Culmination Time: 13:13						

UT	Sun				Venus				Moon				UT				
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec					
00	178 27.7 -00.2	S	22 22.1 -00.3	199 01.8 -00.9	S	23 00.9 +00.1	262 16.7 -29.9	S	05 35.4 +14.5	00							
01	193 27.5 -00.3	S	22 21.8 -00.3	214 00.9 -01.0	S	23 01.0 +00.2	276 46.8 -30.0	S	05 49.9 +14.5	01							
02	208 27.2 -00.3	S	22 21.5 -00.3	228 59.9 -00.9	S	23 01.2 +00.1	291 16.8 -30.0	S	06 04.4 +14.5	02							
03	223 26.9 -00.2	S	22 21.2 -00.3	243 59.0 -00.9	S	23 01.3 +00.2	305 46.8 -30.1	S	06 18.9 +14.4	03							
04	238 26.7 -00.3	S	22 20.9 -00.4	258 58.1 -01.0	S	23 01.5 +00.1	320 16.7 -30.1	S	06 33.3 +14.5	04							
05	253 26.4 -00.3	S	22 20.5 -00.3	273 57.1 -00.9	S	23 01.6 +00.2	334 46.6 -30.2	S	06 47.8 +14.4	05							
06	268 26.1 -00.2	S	22 20.2 -00.3	288 56.2 -01.0	S	23 01.8 +00.1	349 16.4 -30.2	S	07 02.2 +14.3	06							
07	283 25.9 -00.3	S	22 19.9 -00.3	303 55.2 -00.9	S	23 01.9 +00.2	3 46.2 -30.2	S	07 16.5 +14.3	07							
08	298 25.6 -00.3	S	22 19.6 -00.3	318 54.3 -00.9	S	23 02.1 +00.1	18 16.0 -30.3	S	07 30.8 +14.3	08							
09	313 25.3 -00.2	S	22 19.3 -00.4	333 53.4 -01.0	S	23 02.2 +00.2	32 45.7 -30.4	S	07 45.1 +14.3	09							
10	328 25.1 -00.3	S	22 18.9 -00.3	348 52.4 -00.9	S	23 02.4 +00.1	47 15.3 -30.4	S	07 59.4 +14.2	10							
11	343 24.8 -00.3	S	22 18.6 -00.3	3 51.5 -01.0	S	23 02.5 +00.2	61 44.9 -30.4	S	08 13.6 +14.2	11							
12	358 24.5 -00.2	S	22 18.3 -00.4	18 50.5 -00.9	S	23 02.7 +00.1	76 14.5 -30.5	S	08 27.8 +14.1	12							
13	13 24.3 -00.3	S	22 17.9 -00.3	33 49.6 -00.9	S	23 02.8 +00.1	90 44.0 -30.6	S	08 41.9 +14.1	13							
14	28 24.0 -00.3	S	22 17.6 -00.3	48 48.7 -01.0	S	23 02.9 +00.2	105 13.4 -30.6	S	08 56.0 +14.1	14							
15	43 23.7 -00.2	S	22 17.3 -00.3	63 47.7 -00.9	S	23 03.1 +00.1	119 42.8 -30.7	S	09 10.1 +14.0	15							
16	58 23.5 -00.3	S	22 17.0 -00.4	78 46.8 -01.0	S	23 03.2 +00.2	134 12.1 -30.8	S	09 24.1 +14.0	16							
17	73 23.2 -00.3	S	22 16.6 -00.3	93 45.8 -00.9	S	23 03.4 +00.1	148 41.3 -30.7	S	09 38.1 +13.9	17							
18	88 22.9 -00.2	S	22 16.3 -00.3	108 44.9 -00.9	S	23 03.5 +00.1	163 10.6 -30.9	S	09 52.0 +13.9	18							
19	103 22.7 -00.3	S	22 16.0 -00.4	123 44.0 -01.0	S	23 03.6 +00.2	177 39.7 -30.9	S	10 05.9 +13.8	19							
20	118 22.4 -00.3	S	22 15.6 -00.3	138 43.0 -00.9	S	23 03.8 +00.1	192 08.8 -31.0	S	10 19.7 +13.7	20							
21	133 22.1 -00.2	S	22 15.3 -00.3	153 42.1 -01.0	S	23 03.9 +00.1	206 37.8 -31.0	S	10 33.4 +13.8	21							
22	148 21.9 -00.3	S	22 15.0 -00.4	168 41.1 -00.9	S	23 04.0 +00.1	221 06.8 -31.1	S	10 47.2 +13.6	22							
23	163 21.6 -00.3	S	22 14.6 -00.3	183 40.2 -00.9	S	23 04.1 +00.2	235 35.7 -31.2	S	11 00.8 +13.6	23							
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT			
SD	16'3	16'3	16'3	16'3	16'3	16'3	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD			
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP			
SHA	072°	071°	071°	071°	071°	071°	SHA	092°	092°	092°	091°	091°	091°	SHA			
Greenwich Culmination Time: 12:06						Greenwich Culmination Time: 10:44						Greenwich Culmination Time: 06:44					

UT	Mars				Jupiter				Saturn				UT				
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec					
00	79 11.5 +01.4	N	12 24.0 +00.4	160 09.9 +01.8	S	19 41.8 -00.1	162 06.0 +02.2	S	20 01.5 +00.0	00							
01	94 12.9 +01.4	N	12 24.4 +00.4	175 11.7 +01.9	S	19 41.7 -00.2	177 08.2 +02.1	S	20 01.5 -00.1	01							
02	109 14.3 +01.4	N	12 24.8 +00.5	190 13.6 +01.9	S	19 41.5 -00.1	192 10.3 +02.2	S	20 01.4 +00.0	02							
03	124 15.7 +01.3	N	12 25.3 +00.4	205 15.5 +01.8	S	19 41.4 -00.1	207 12.5 +02.2	S	20 01.4 -00.1	03							
04	139 17.0 +01.4	N	12 25.7 +00.5	220 17.3 +01.9	S	19 41.3 -00.2	222 14.7 +02.1	S	20 01.3 -00.1	04							
05	154 18.4 +01.4	N	12 26.2 +00.4	235 19.2 +01.9	S	19 41.1 -00.1	237 16.8 +02.2	S	20 01.2 +00.0	05							
06	169 19.8 +01.4	N	12 26.6 +00.5	250 21.1 +01.8	S	19 41.0 -00.1	252 19.0 +02.2	S	20 01.2 -00.1	06							
07	184 21.2 +01.4	N	12 27.1 +00.4	265 22.9 +01.9	S	19 40.9 -00.2	267 21.2 +02.1	S	20 01.1 -00.1	07							
08	199 22.6 +01.3	N	12 27.5 +00.4	280 24.8 +01.9	S	19 40.7 -00.1	282 23.3 +02.2	S	20 01.0 +00.0	08							
09	214 23.9 +01.4	N	12 27.9 +00.5	295 26.7 +01.8	S	19 40.6 -00.2	297 25.5 +02.1	S	20 01.0 -00.1	09							
10	229 25.3 +01.4	N	12 28.4 +00.4	310 28.5 +01.9	S	19 40.4 -00.1	312 27.6 +02.2	S	20 00.9 -00.1	10							
11	244 26.7 +01.4	N	12 28.8 +00.5	325 30.4 +01.8	S	19 40.3 -00.1	327 29.8 +02.2	S	20 00.8 +00.0	11							
12	259 28.1 +01.3	N	12 29.3 +00.4	340 32.2 +01.9	S	19 40.2 -00.2	342 32.0 +02.1	S	20 00.8 -00.1	12							
13	274 29.4 +01.4	N	12 29.7 +00.5	355 34.1 +01.9	S	19 40.0 -00.1	357 34.1 +02.2	S	20 00.7 +00.0	13							
14	289 30.8 +01.4	N	12 30.2 +00.4	10 36.0 +01.8	S	19 39.9 -00.1	12 36.3 +02.2	S	20 00.7 -00.1	14							
15	304 32.2 +01.4	N	12 30.6 +00.5	25 37.8 +01.9	S	19 39.8 -00.2	27 38.5 +02.1	S	20 00.6 -00.1	15							
16	319 33.6 +01.3	N	12 31.1 +00.4	40 39.7 +01.9	S	19 39.6 -00.1	42 40.6 +02.2	S	20 00.5 +00.0	16							
17	334 34.9 +01.4	N	12 31.5 +00.4	55 41.6 +01.8	S	19 39.5 -00.1	57 42.8 +02.1	S	20 00.5 -00.1	17							
18	349 36.3 +01.4	N	12 31.9 +00.5	70 43.4 +01.9	S	19 39.4 -00.2	72 44.9 +02.2	S	20 00.4 -00.1	18							
19	4 37.7 +01.4	N	12 32.4 +00.4	85 45.3 +01.9	S	19 39.2 -00.1	87 47.1 +02.2	S	20 00.3 +00.0	19							
20	19 39.1 +01.3	N	12 32.8 +00.5	100 47.2 +01.8	S	19 39.1 -00.1	102 49.3 +02.1	S	20 00.3 -00.1	20							
21	34 40.4 +01.4	N	12 33.3 +00.4	115 49.0 +01.9	S	19 39.0 -00.2	117 51.4 +02.2	S	20 00.2 -00.1	21							
22	49 41.8 +01.4	N	12 33.7 +00.5	130 50.9 +01.9	S	19 38.8 -00.1	132 53.6 +02.1	S	20 00.1 +00.0	22							
23	64 43.2 +01.3	N	12 34.2 +00.4	145 52.8 +01.8	S	19 38.7 -00.1	147 55.7 +02.2	S	20 00.1 -00.1	23							
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT			
SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	00'3	00'3	00'3	00'3	00'3	00'3	SD			
HP	00'2	00'2	00'2	00'2	00'2	00'2	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP			
SHA	332°	332°	332°	332°	332°	332°	SHA	053°	053°	053°	053°	053°	053°	SHA			
Greenwich Culmination Time: 18:41						Greenwich Culmination Time: 13:17						Greenwich Culmination Time: 13:09					

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 21.3 -00.2	S	22 14.3 -00.4	198 39.3 -01.0	S	23 04.3 +00.1	250 04.5 -31.2	S	11 14.4 +13.6	00			
01	193 21.1 -00.3	S	22 13.9 -00.3	213 38.3 -00.9	S	23 04.4 +00.1	264 33.3 -31.3	S	11 28.0 +13.4	01			
02	208 20.8 -00.3	S	22 13.6 -00.3	228 37.4 -01.0	S	23 04.5 +00.1	279 02.0 -31.4	S	11 41.4 +13.5	02			
03	223 20.5 -00.2	S	22 13.3 -00.4	243 36.4 -00.9	S	23 04.6 +00.2	293 30.6 -31.4	S	11 54.9 +13.3	03			
04	238 20.3 -00.3	S	22 12.9 -00.3	258 35.5 -00.9	S	23 04.8 +00.1	307 59.2 -31.5	S	12 08.2 +13.3	04			
05	253 20.0 -00.3	S	22 12.6 -00.3	273 34.6 -01.0	S	23 04.9 +00.1	322 27.7 -31.6	S	12 21.5 +13.2	05			
06	268 19.7 -00.2	S	22 12.3 -00.4	288 33.6 -00.9	S	23 05.0 +00.1	336 56.1 -31.6	S	12 34.7 +13.2	06			
07	283 19.5 -00.3	S	22 11.9 -00.3	303 32.7 -01.0	S	23 05.1 +00.1	351 24.5 -31.7	S	12 47.9 +13.1	07			
08	298 19.2 -00.2	S	22 11.6 -00.4	318 31.7 -00.9	S	23 05.2 +00.2	5 52.8 -31.8	S	13 01.0 +13.0	08			
09	313 19.0 -00.3	S	22 11.2 -00.3	333 30.8 -00.9	S	23 05.4 +00.1	20 21.0 -31.8	S	13 14.0 +13.0	09			
10	328 18.7 -00.3	S	22 10.9 -00.4	348 29.9 -01.0	S	23 05.5 +00.1	34 49.2 -32.0	S	13 27.0 +12.8	10			
11	343 18.4 -00.2	S	22 10.5 -00.3	3 28.9 -00.9	S	23 05.6 +00.1	49 17.2 -32.0	S	13 39.8 +12.8	11			
12	358 18.2 -00.3	S	22 10.2 -00.4	18 28.0 -01.0	S	23 05.7 +00.1	63 45.2 -32.0	S	13 52.6 +12.7	12			
13	13 17.9 -00.3	S	22 09.8 -00.3	33 27.0 -00.9	S	23 05.8 +00.1	78 13.2 -32.2	S	14 05.3 +12.7	13			
14	28 17.6 -00.2	S	22 09.5 -00.4	48 26.1 -01.0	S	23 05.9 +00.1	92 41.0 -32.2	S	14 18.0 +12.6	14			
15	43 17.4 -00.3	S	22 09.1 -00.3	63 25.1 -00.9	S	23 06.0 +00.1	107 08.8 -32.3	S	14 30.6 +12.4	15			
16	58 17.1 -00.2	S	22 08.8 -00.3	78 24.2 -00.9	S	23 06.1 +00.1	121 36.5 -32.3	S	14 43.0 +12.4	16			
17	73 16.9 -00.3	S	22 08.5 -00.4	93 23.3 -01.0	S	23 06.2 +00.1	136 04.2 -32.5	S	14 55.4 +12.3	17			
18	88 16.6 -00.3	S	22 08.1 -00.3	108 22.3 -00.9	S	23 06.3 +00.1	150 31.7 -32.5	S	15 07.7 +12.3	18			
19	103 16.3 -00.2	S	22 07.8 -00.4	123 21.4 -01.0	S	23 06.4 +00.1	164 59.2 -32.6	S	15 20.0 +12.1	19			
20	118 16.1 -00.3	S	22 07.4 -00.4	138 20.4 -00.9	S	23 06.5 +00.1	179 26.6 -32.6	S	15 32.1 +12.1	20			
21	133 15.8 -00.2	S	22 07.0 -00.3	153 19.5 -01.0	S	23 06.6 +00.1	193 54.0 -32.8	S	15 44.2 +11.9	21			
22	148 15.6 -00.3	S	22 06.7 -00.4	168 18.5 -00.9	S	23 06.7 +00.1	208 21.2 -32.8	S	15 56.1 +11.9	22			
23	163 15.3 -00.3	S	22 06.3 -00.3	183 17.6 -00.9	S	23 06.8 +00.1	222 48.4 -32.9	S	16 08.0 +11.7	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'2 16'2 16'2 16'2 16'2 16'2						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 59'5 59'5 59'5 59'6 59'6 59'6						
	SHA 071° 070° 070° 070° 070° 070°			SHA 091° 091° 090° 090° 090° 090°			SHA 141° 139° 137° 134° 132° 130°						
	Greenwich Culmination Time: 12:06			Greenwich Culmination Time: 10:46			Greenwich Culmination Time: 07:35						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	79 44.5 +01.4	N	12 34.6 +00.4	160 54.6 +01.9	S	19 38.6 -00.2	162 57.9 +02.2	S	20 00.0 +00.0	00			
01	94 45.9 +01.4	N	12 35.0 +00.5	175 56.5 +01.9	S	19 38.4 -00.1	178 00.1 +02.1	S	19 60.0 -00.1	01			
02	109 47.3 +01.4	N	12 35.5 +00.4	190 58.4 +01.8	S	19 38.3 -00.2	193 02.2 +02.2	S	19 59.9 -00.1	02			
03	124 48.7 +01.3	N	12 35.9 +00.5	206 00.2 +01.9	S	19 38.1 -00.1	208 04.4 +02.2	S	19 59.8 +00.0	03			
04	139 50.0 +01.4	N	12 36.4 +00.4	221 02.1 +01.9	S	19 38.0 -00.1	223 06.6 +02.1	S	19 59.8 -00.1	04			
05	154 51.4 +01.4	N	12 36.8 +00.5	236 04.0 +01.8	S	19 37.9 -00.2	238 08.7 +02.2	S	19 59.7 -00.1	05			
06	169 52.8 +01.3	N	12 37.3 +00.4	251 05.8 +01.9	S	19 37.7 -00.1	253 10.9 +02.1	S	19 59.6 +00.0	06			
07	184 54.1 +01.4	N	12 37.7 +00.5	266 07.7 +01.8	S	19 37.6 -00.1	268 13.0 +02.2	S	19 59.6 -00.1	07			
08	199 55.5 +01.4	N	12 38.2 +00.4	281 09.5 +01.9	S	19 37.5 -00.2	283 15.2 +02.2	S	19 59.5 -00.1	08			
09	214 56.9 +01.3	N	12 38.6 +00.4	296 11.4 +01.9	S	19 37.3 -00.1	298 17.4 +02.1	S	19 59.4 +00.0	09			
10	229 58.2 +01.4	N	12 39.0 +00.5	311 13.3 +01.8	S	19 37.2 -00.1	313 19.5 +02.2	S	19 59.4 -00.1	10			
11	244 59.6 +01.4	N	12 39.5 +00.4	326 15.1 +01.9	S	19 37.1 -00.2	328 21.7 +02.1	S	19 59.3 +00.0	11			
12	260 01.0 +01.3	N	12 39.9 +00.5	341 17.0 +01.9	S	19 36.9 -00.1	343 23.8 +02.2	S	19 59.3 -00.1	12			
13	275 02.3 +01.4	N	12 40.4 +00.4	356 18.9 +01.8	S	19 36.8 -00.2	358 26.0 +02.2	S	19 59.2 -00.1	13			
14	290 03.7 +01.3	N	12 40.8 +00.5	11 20.7 +01.9	S	19 36.6 -00.1	13 28.2 +02.1	S	19 59.1 +00.0	14			
15	305 05.0 +01.4	N	12 41.3 +00.4	26 22.6 +01.9	S	19 36.5 -00.1	28 30.3 +02.2	S	19 59.1 -00.1	15			
16	320 06.4 +01.4	N	12 41.7 +00.5	41 24.5 +01.8	S	19 36.4 -00.2	43 32.5 +02.1	S	19 59.0 -00.1	16			
17	335 07.8 +01.3	N	12 42.2 +00.4	56 26.3 +01.9	S	19 36.2 -00.1	58 34.6 +02.2	S	19 58.9 +00.0	17			
18	350 09.1 +01.4	N	12 42.6 +00.4	71 28.2 +01.9	S	19 36.1 -00.1	73 36.8 +02.2	S	19 58.9 -00.1	18			
19	5 10.5 +01.4	N	12 43.0 +00.5	86 30.1 +01.8	S	19 36.0 -00.2	88 39.0 +02.1	S	19 58.8 -00.1	19			
20	20 11.9 +01.3	N	12 43.5 +00.4	101 31.9 +01.9	S	19 35.8 -00.1	103 41.1 +02.2	S	19 58.7 +00.0	20			
21	35 13.2 +01.4	N	12 43.9 +00.5	116 33.8 +01.8	S	19 35.7 -00.1	118 43.3 +02.2	S	19 58.7 -00.1	21			
22	50 14.6 +01.3	N	12 44.4 +00.4	131 35.6 +01.9	S	19 35.6 -00.2	133 45.5 +02.1	S	19 58.6 +00.0	22			
23	65 15.9 +01.4	N	12 44.8 +00.5	146 37.5 +01.9	S	19 35.4 -00.1	148 47.6 +02.2	S	19 58.6 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 332° 332° 332° 332° 332° 332°			SHA 053° 053° 053° 053° 053° 053°			SHA 055° 055° 055° 055° 055° 055°						
	Greenwich Culmination Time: 18:39			Greenwich Culmination Time: 13:14			Greenwich Culmination Time: 13:06						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 15.0 -00.2	S	22 06.0 -00.4	198 16.7 -01.0	S	23 06.9 +00.1	237 15.5 -33.0	S	16 19.7 +11.7	00			
01	193 14.8 -00.3	S	22 05.6 -00.3	213 15.7 -00.9	S	23 07.0 +00.1	251 42.5 -33.0	S	16 31.4 +11.6	01			
02	208 14.5 -00.2	S	22 05.3 -00.4	228 14.8 -01.0	S	23 07.1 +00.1	266 09.5 -33.2	S	16 43.0 +11.5	02			
03	223 14.3 -00.3	S	22 04.9 -00.3	243 13.8 -00.9	S	23 07.2 +00.1	280 36.3 -33.2	S	16 54.5 +11.3	03			
04	238 14.0 -00.3	S	22 04.6 -00.4	258 12.9 -01.0	S	23 07.3 +00.1	295 03.1 -33.3	S	17 05.8 +11.3	04			
05	253 13.7 -00.2	S	22 04.2 -00.4	273 11.9 -00.9	S	23 07.4 +00.1	309 29.8 -33.4	S	17 17.1 +11.2	05			
06	268 13.5 -00.3	S	22 03.8 -00.3	288 11.0 -01.0	S	23 07.5 +00.1	323 56.4 -33.4	S	17 28.3 +11.1	06			
07	283 13.2 -00.2	S	22 03.5 -00.4	303 10.0 -00.9	S	23 07.6 +00.1	338 23.0 -33.5	S	17 39.4 +10.9	07			
08	298 13.0 -00.3	S	22 03.1 -00.3	318 09.1 -00.9	S	23 07.7 +00.1	352 49.5 -33.6	S	17 50.3 +10.9	08			
09	313 12.7 -00.2	S	22 02.8 -00.4	333 08.2 -01.0	S	23 07.8 +00.0	7 15.9 -33.7	S	18 01.2 +10.7	09			
10	328 12.5 -00.3	S	22 02.4 -00.4	348 07.2 -00.9	S	23 07.8 +00.1	21 42.2 -33.8	S	18 11.9 +10.6	10			
11	343 12.2 -00.3	S	22 02.0 -00.3	3 06.3 -01.0	S	23 07.9 +00.1	36 08.4 -33.8	S	18 22.5 +10.5	11			
12	358 11.9 -00.2	S	22 01.7 -00.4	18 05.3 -00.9	S	23 08.0 +00.1	50 34.6 -34.0	S	18 33.0 +10.4	12			
13	13 11.7 -00.3	S	22 01.3 -00.4	33 04.4 -01.0	S	23 08.1 +00.1	65 00.6 -34.0	S	18 43.4 +10.3	13			
14	28 11.4 -00.2	S	22 00.9 -00.3	48 03.4 -00.9	S	23 08.2 +00.1	79 26.6 -34.0	S	18 53.7 +10.2	14			
15	43 11.2 -00.3	S	22 00.6 -00.4	63 02.5 -00.9	S	23 08.3 +00.0	93 52.6 -34.2	S	19 03.9 +10.0	15			
16	58 10.9 -00.2	S	22 00.2 -00.4	78 01.6 -01.0	S	23 08.3 +00.1	108 18.4 -34.2	S	19 13.9 +09.9	16			
17	73 10.7 -00.3	S	21 59.8 -00.3	93 00.6 -00.9	S	23 08.4 +00.1	122 44.2 -34.3	S	19 23.8 +09.8	17			
18	88 10.4 -00.3	S	21 59.5 -00.4	107 59.7 -01.0	S	23 08.5 +00.1	137 09.9 -34.4	S	19 33.6 +09.7	18			
19	103 10.1 -00.2	S	21 59.1 -00.4	122 58.7 -00.9	S	23 08.6 +00.0	151 35.5 -34.5	S	19 43.3 +09.6	19			
20	118 09.9 -00.3	S	21 58.7 -00.3	137 57.8 -01.0	S	23 08.6 +00.1	166 01.0 -34.5	S	19 52.9 +09.4	20			
21	133 09.6 -00.2	S	21 58.4 -00.4	152 56.8 -00.9	S	23 08.7 +00.1	180 26.5 -34.6	S	20 02.3 +09.3	21			
22	148 09.4 -00.3	S	21 58.0 -00.4	167 55.9 -01.0	S	23 08.8 +00.0	194 51.9 -34.7	S	20 11.6 +09.1	22			
23	163 09.1 -00.2	S	21 57.6 -00.3	182 54.9 -00.9	S	23 08.8 +00.1	209 17.2 -34.8	S	20 20.7 +09.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'2 16'3 16'3 16'3 16'3 16'3						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 59'6 59'6 59'7 59'7 59'7 59'7						
	SHA 069° 069° 069° 069° 069° 069°			SHA 089° 089° 089° 089° 089° 088°			SHA 127° 125° 123° 120° 118° 115°						
	Greenwich Culmination Time: 12:07			Greenwich Culmination Time: 10:47			Greenwich Culmination Time: 08:29						

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	80 17.3 +01.3	N	12 45.3 +00.4	161 39.4 +01.8	S	19 35.3 -00.2	163 49.8 +02.1	S	19 58.5 -00.1	00			
01	95 18.6 +01.4	N	12 45.7 +00.5	176 41.2 +01.9	S	19 35.1 -00.1	178 51.9 +02.2	S	19 58.4 +00.0	01			
02	110 20.0 +01.4	N	12 46.2 +00.4	191 43.1 +01.9	S	19 35.0 -00.1	193 54.1 +02.2	S	19 58.4 -00.1	02			
03	125 21.4 +01.3	N	12 46.6 +00.5	206 45.0 +01.8	S	19 34.9 -00.2	208 56.3 +02.1	S	19 58.3 -00.1	03			
04	140 22.7 +01.4	N	12 47.1 +00.4	221 46.8 +01.9	S	19 34.7 -00.1	223 58.4 +02.2	S	19 58.2 +00.0	04			
05	155 24.1 +01.3	N	12 47.5 +00.4	236 48.7 +01.9	S	19 34.6 -00.1	239 00.6 +02.1	S	19 58.2 -00.1	05			
06	170 25.4 +01.4	N	12 47.9 +00.5	251 50.6 +01.8	S	19 34.5 -00.2	254 02.7 +02.2	S	19 58.1 -00.1	06			
07	185 26.8 +01.3	N	12 48.4 +00.4	266 52.4 +01.9	S	19 34.3 -00.1	269 04.9 +02.2	S	19 58.0 +00.0	07			
08	200 28.1 +01.4	N	12 48.8 +00.5	281 54.3 +01.8	S	19 34.2 -00.2	284 07.1 +02.1	S	19 58.0 -00.1	08			
09	215 29.5 +01.4	N	12 49.3 +00.4	296 56.1 +01.9	S	19 34.0 -00.1	299 09.2 +02.2	S	19 57.9 -00.1	09			
10	230 30.9 +01.3	N	12 49.7 +00.5	311 58.0 +01.9	S	19 33.9 -00.1	314 11.4 +02.1	S	19 57.8 +00.0	10			
11	245 32.2 +01.4	N	12 50.2 +00.4	326 59.9 +01.8	S	19 33.8 -00.2	329 13.5 +02.2	S	19 57.8 -00.1	11			
12	260 33.6 +01.3	N	12 50.6 +00.5	342 01.7 +01.9	S	19 33.6 -00.1	344 15.7 +02.2	S	19 57.7 +00.0	12			
13	275 34.9 +01.4	N	12 51.1 +00.4	357 03.6 +01.9	S	19 33.5 -00.1	359 17.9 +02.1	S	19 57.7 -00.1	13			
14	290 36.3 +01.3	N	12 51.5 +00.4	12 05.5 +01.8	S	19 33.4 -00.2	14 20.0 +02.2	S	19 57.6 -00.1	14			
15	305 37.6 +01.4	N	12 51.9 +00.5	27 07.3 +01.9	S	19 33.2 -00.1	29 22.2 +02.1	S	19 57.5 +00.0	15			
16	320 39.0 +01.3	N	12 52.4 +00.4	42 09.2 +01.9	S	19 33.1 -00.2	44 24.3 +02.2	S	19 57.5 -00.1	16			
17	335 40.3 +01.4	N	12 52.8 +00.5	57 11.1 +01.8	S	19 32.9 -00.1	59 26.5 +02.2	S	19 57.4 -00.1	17			
18	350 41.7 +01.3	N	12 53.3 +00.4	72 12.9 +01.9	S	19 32.8 -00.1	74 28.7 +02.1	S	19 57.3 +00.0	18			
19	5 43.0 +01.4	N	12 53.7 +00.5	87 14.8 +01.8	S	19 32.7 -00.2	89 30.8 +02.2	S	19 57.3 -00.1	19			
20	20 44.4 +01.3	N	12 54.2 +00.4	102 16.6 +01.9	S	19 32.5 -00.1	104 33.0 +02.1	S	19 57.2 -00.1	20			
21	35 45.7 +01.4	N	12 54.6 +00.5	117 18.5 +01.9	S	19 32.4 -00.1	119 35.1 +02.2	S	19 57.1 +00.0	21			
22	50 47.1 +01.3	N	12 55.1 +00.4	132 20.4 +01.8	S	19 32.3 -00.2	134 37.3 +02.2	S	19 57.1 -00.1	22			
23	65 48.4 +01.4	N	12 55.5 +00.5	147 22.2 +01.9	S	19 32.1 -00.1	149 39.5 +02.1	S	19 57.0 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 332° 331° 331° 331° 331° 331°			SHA 053° 053° 053° 053° 053° 053°			SHA 055° 055° 055° 055° 055° 055°						
	Greenwich Culmination Time: 18:37			Greenwich Culmination Time: 13:11			Greenwich Culmination Time: 13:02						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 08.9 -00.3	S	21 57.3 -00.4	197 54.0 -01.0	S	23 08.9 +00.1	223 42.4 -34.8	S	20 29.8 +08.9	00			
01	193 08.6 -00.2	S	21 56.9 -00.4	212 53.0 -00.9	S	23 09.0 +00.0	238 07.6 -34.9	S	20 38.7 +08.7	01			
02	208 08.4 -00.3	S	21 56.5 -00.4	227 52.1 -00.9	S	23 09.0 +00.1	252 32.7 -35.0	S	20 47.4 +08.7	02			
03	223 08.1 -00.2	S	21 56.1 -00.3	242 51.2 -01.0	S	23 09.1 +00.1	266 57.7 -35.0	S	20 56.1 +08.5	03			
04	238 07.9 -00.3	S	21 55.8 -00.4	257 50.2 -00.9	S	23 09.2 +00.0	281 22.7 -35.1	S	21 04.6 +08.3	04			
05	253 07.6 -00.2	S	21 55.4 -00.4	272 49.3 -01.0	S	23 09.2 +00.1	295 47.6 -35.2	S	21 12.9 +08.2	05			
06	268 07.4 -00.3	S	21 55.0 -00.4	287 48.3 -00.9	S	23 09.3 +00.1	310 12.4 -35.3	S	21 21.1 +08.1	06			
07	283 07.1 -00.3	S	21 54.6 -00.4	302 47.4 -01.0	S	23 09.4 +00.0	324 37.1 -35.3	S	21 29.2 +08.0	07			
08	298 06.8 -00.2	S	21 54.2 -00.3	317 46.4 -00.9	S	23 09.4 +00.1	339 01.8 -35.4	S	21 37.2 +07.7	08			
09	313 06.6 -00.3	S	21 53.9 -00.4	332 45.5 -01.0	S	23 09.5 +00.0	353 26.4 -35.4	S	21 44.9 +07.7	09			
10	328 06.3 -00.2	S	21 53.5 -00.4	347 44.5 -00.9	S	23 09.5 +00.1	7 51.0 -35.5	S	21 52.6 +07.5	10			
11	343 06.1 -00.3	S	21 53.1 -00.4	2 43.6 -01.0	S	23 09.6 +00.0	22 15.5 -35.6	S	22 00.1 +07.3	11			
12	358 05.8 -00.2	S	21 52.7 -00.4	17 42.6 -00.9	S	23 09.6 +00.1	36 39.9 -35.6	S	22 07.4 +07.3	12			
13	13 05.6 -00.3	S	21 52.3 -00.3	32 41.7 -00.9	S	23 09.7 +00.0	51 04.3 -35.7	S	22 14.7 +07.0	13			
14	28 05.3 -00.2	S	21 52.0 -00.4	47 40.8 -01.0	S	23 09.7 +00.1	65 28.6 -35.8	S	22 21.7 +06.9	14			
15	43 05.1 -00.3	S	21 51.6 -00.4	62 39.8 -00.9	S	23 09.8 +00.0	79 52.8 -35.8	S	22 28.6 +06.8	15			
16	58 04.8 -00.2	S	21 51.2 -00.4	77 38.9 -01.0	S	23 09.8 +00.1	94 17.0 -35.8	S	22 35.4 +06.6	16			
17	73 04.6 -00.3	S	21 50.8 -00.4	92 37.9 -00.9	S	23 09.9 +00.0	108 41.2 -35.9	S	22 42.0 +06.4	17			
18	88 04.3 -00.2	S	21 50.4 -00.4	107 37.0 -01.0	S	23 09.9 +00.1	123 05.3 -36.0	S	22 48.4 +06.3	18			
19	103 04.1 -00.3	S	21 50.0 -00.4	122 36.0 -00.9	S	23 10.0 +00.0	137 29.3 -36.0	S	22 54.7 +06.2	19			
20	118 03.8 -00.2	S	21 49.6 -00.3	137 35.1 -01.0	S	23 10.0 +00.0	151 53.3 -36.1	S	23 00.9 +05.9	20			
21	133 03.6 -00.3	S	21 49.3 -00.4	152 34.1 -00.9	S	23 10.0 +00.1	166 17.2 -36.1	S	23 06.8 +05.9	21			
22	148 03.3 -00.2	S	21 48.9 -00.4	167 33.2 -01.0	S	23 10.1 +00.0	180 41.1 -36.2	S	23 12.7 +05.6	22			
23	163 03.1 -00.3	S	21 48.5 -00.4	182 32.2 -00.9	S	23 10.1 +00.1	195 04.9 -36.2	S	23 18.3 +05.5	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'2 16'2 16'2 16'2 16'2 16'2						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 59'6 59'6 59'6 59'6 59'6 59'5						
	SHA 068° 068° 068° 068° 068° 067°			SHA 088° 088° 088° 087° 087° 087°			SHA 113° 110° 108° 105° 103° 100°						
	Greenwich Culmination Time: 12:07			Greenwich Culmination Time: 10:49			Greenwich Culmination Time: 09:27						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	80 49.8 +01.3	N	12 56.0 +00.4	162 24.1 +01.9	S	19 32.0 -00.2	164 41.6 +02.2	S	19 56.9 +00.0	00			
01	95 51.1 +01.4	N	12 56.4 +00.5	177 26.0 +01.8	S	19 31.8 -00.1	179 43.8 +02.1	S	19 56.9 -00.1	01			
02	110 52.5 +01.3	N	12 56.9 +00.4	192 27.8 +01.9	S	19 31.7 -00.1	194 45.9 +02.2	S	19 56.8 +00.0	02			
03	125 53.8 +01.3	N	12 57.3 +00.4	207 29.7 +01.8	S	19 31.6 -00.2	209 48.1 +02.2	S	19 56.8 -00.1	03			
04	140 55.1 +01.4	N	12 57.7 +00.5	222 31.5 +01.9	S	19 31.4 -00.1	224 50.3 +02.1	S	19 56.7 -00.1	04			
05	155 56.5 +01.3	N	12 58.2 +00.4	237 33.4 +01.9	S	19 31.3 -00.1	239 52.4 +02.2	S	19 56.6 +00.0	05			
06	170 57.8 +01.4	N	12 58.6 +00.5	252 35.3 +01.8	S	19 31.2 -00.2	254 54.6 +02.1	S	19 56.6 -00.1	06			
07	185 59.2 +01.3	N	12 59.1 +00.4	267 37.1 +01.9	S	19 31.0 -00.1	269 56.7 +02.2	S	19 56.5 -00.1	07			
08	201 00.5 +01.4	N	12 59.5 +00.5	282 39.0 +01.9	S	19 30.9 -00.2	284 58.9 +02.2	S	19 56.4 +00.0	08			
09	216 01.9 +01.3	N	12 60.0 +00.4	297 40.9 +01.8	S	19 30.7 -00.1	300 01.1 +02.1	S	19 56.4 -00.1	09			
10	231 03.2 +01.4	N	13 00.4 +00.5	312 42.7 +01.9	S	19 30.6 -00.1	315 03.2 +02.2	S	19 56.3 -00.1	10			
11	246 04.6 +01.3	N	13 00.9 +00.4	327 44.6 +01.8	S	19 30.5 -00.2	330 05.4 +02.1	S	19 56.2 +00.0	11			
12	261 05.9 +01.3	N	13 01.3 +00.5	342 46.4 +01.9	S	19 30.3 -00.1	345 07.5 +02.2	S	19 56.2 -00.1	12			
13	276 07.2 +01.4	N	13 01.8 +00.4	357 48.3 +01.9	S	19 30.2 -00.2	0 09.7 +02.2	S	19 56.1 -00.1	13			
14	291 08.6 +01.3	N	13 02.2 +00.4	12 50.2 +01.8	S	19 30.0 -00.1	15 11.9 +02.1	S	19 56.0 +00.0	14			
15	306 09.9 +01.4	N	13 02.6 +00.5	27 52.0 +01.9	S	19 29.9 -00.1	30 14.0 +02.2	S	19 56.0 -00.1	15			
16	321 11.3 +01.3	N	13 03.1 +00.4	42 53.9 +01.9	S	19 29.8 -00.2	45 16.2 +02.1	S	19 55.9 +00.0	16			
17	336 12.6 +01.3	N	13 03.5 +00.5	57 55.8 +01.8	S	19 29.6 -00.1	60 18.3 +02.2	S	19 55.9 -00.1	17			
18	351 13.9 +01.4	N	13 04.0 +00.4	72 57.6 +01.9	S	19 29.5 -00.1	75 20.5 +02.2	S	19 55.8 -00.1	18			
19	6 15.3 +01.3	N	13 04.4 +00.5	87 59.5 +01.8	S	19 29.4 -00.2	90 22.7 +02.1	S	19 55.7 +00.0	19			
20	21 16.6 +01.4	N	13 04.9 +00.4	103 01.3 +01.9	S	19 29.2 -00.1	105 24.8 +02.2	S	19 55.7 -00.1	20			
21	36 18.0 +01.3	N	13 05.3 +00.5	118 03.2 +01.9	S	19 29.1 -00.2	120 27.0 +02.1	S	19 55.6 -00.1	21			
22	51 19.3 +01.3	N	13 05.8 +00.4	133 05.1 +01.8	S	19 28.9 -00.1	135 29.1 +02.2	S	19 55.5 +00.0	22			
23	66 20.6 +01.4	N	13 06.2 +00.5	148 06.9 +01.9	S	19 28.8 -00.1	150 31.3 +02.2	S	19 55.5 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 331° 331° 331° 331° 331° 331°			SHA 053° 053° 053° 053° 052° 052°			SHA 055° 055° 055° 055° 055° 055°						
	Greenwich Culmination Time: 18:35			Greenwich Culmination Time: 13:08			Greenwich Culmination Time: 12:59						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 02.8 -00.2	S	21 48.1 -00.4	197 31.3 -01.0	S	23 10.2 +00.0	209 28.7 -36.2	S	23 23.8 +05.4	00			
01	193 02.6 -00.3	S	21 47.7 -00.4	212 30.3 -00.9	S	23 10.2 +00.0	223 52.5 -36.3	S	23 29.2 +05.2	01			
02	208 02.3 -00.2	S	21 47.3 -00.4	227 29.4 -01.0	S	23 10.2 +00.1	238 16.2 -36.4	S	23 34.4 +05.0	02			
03	223 02.1 -00.2	S	21 46.9 -00.4	242 28.4 -00.9	S	23 10.3 +00.0	252 39.8 -36.3	S	23 39.4 +04.8	03			
04	238 01.9 -00.3	S	21 46.5 -00.4	257 27.5 -00.9	S	23 10.3 +00.0	267 03.5 -36.4	S	23 44.2 +04.7	04			
05	253 01.6 -00.2	S	21 46.1 -00.4	272 26.6 -01.0	S	23 10.3 +00.1	281 27.1 -36.5	S	23 48.9 +04.6	05			
06	268 01.4 -00.3	S	21 45.7 -00.4	287 25.6 -00.9	S	23 10.4 +00.0	295 50.6 -36.5	S	23 53.5 +04.3	06			
07	283 01.1 -00.2	S	21 45.3 -00.4	302 24.7 -01.0	S	23 10.4 +00.0	310 14.1 -36.5	S	23 57.8 +04.2	07			
08	298 00.9 -00.3	S	21 44.9 -00.4	317 23.7 -00.9	S	23 10.4 +00.1	324 37.6 -36.5	S	24 02.0 +04.1	08			
09	313 00.6 -00.2	S	21 44.5 -00.4	332 22.8 -01.0	S	23 10.5 +00.0	339 01.1 -36.5	S	24 06.1 +03.8	09			
10	328 00.4 -00.3	S	21 44.1 -00.4	347 21.8 -00.9	S	23 10.5 +00.0	353 24.6 -36.6	S	24 09.9 +03.7	10			
11	343 00.1 -00.2	S	21 43.7 -00.4	2 20.9 -01.0	S	23 10.5 +00.0	7 48.0 -36.6	S	24 13.6 +03.6	11			
12	357 59.9 -00.3	S	21 43.3 -00.4	17 19.9 -00.9	S	23 10.5 +00.1	22 11.4 -36.7	S	24 17.2 +03.3	12			
13	12 59.6 -00.2	S	21 42.9 -00.4	32 19.0 -01.0	S	23 10.6 +00.0	36 34.7 -36.6	S	24 20.5 +03.2	13			
14	27 59.4 -00.3	S	21 42.5 -00.4	47 18.0 -00.9	S	23 10.6 +00.0	50 58.1 -36.6	S	24 23.7 +03.1	14			
15	42 59.1 -00.2	S	21 42.1 -00.4	62 17.1 -01.0	S	23 10.6 +00.0	65 21.5 -36.7	S	24 26.8 +02.8	15			
16	57 58.9 -00.2	S	21 41.7 -00.4	77 16.1 -00.9	S	23 10.6 +00.0	79 44.8 -36.7	S	24 29.6 +02.7	16			
17	72 58.7 -00.3	S	21 41.3 -00.4	92 15.2 -01.0	S	23 10.6 +00.0	94 08.1 -36.7	S	24 32.3 +02.5	17			
18	87 58.4 -00.2	S	21 40.9 -00.4	107 14.2 -00.9	S	23 10.6 +00.1	108 31.4 -36.7	S	24 34.8 +02.4	18			
19	102 58.2 -00.3	S	21 40.5 -00.4	122 13.3 -01.0	S	23 10.7 +00.0	122 54.7 -36.7	S	24 37.2 +02.2	19			
20	117 57.9 -00.2	S	21 40.1 -00.4	137 12.3 -00.9	S	23 10.7 +00.0	137 18.0 -36.7	S	24 39.4 +02.0	20			
21	132 57.7 -00.3	S	21 39.7 -00.4	152 11.4 -00.9	S	23 10.7 +00.0	151 41.3 -36.7	S	24 41.4 +01.8	21			
22	147 57.4 -00.2	S	21 39.3 -00.4	167 10.5 -01.0	S	23 10.7 +00.0	166 04.6 -36.7	S	24 43.2 +01.7	22			
23	162 57.2 -00.2	S	21 38.9 -00.4	182 09.5 -00.9	S	23 10.7 +00.0	180 27.9 -36.7	S	24 44.9 +01.5	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'2 16'2 16'2 16'2 16'2 16'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 59'5 59'4 59'4 59'3 59'3 59'2						
	SHA 067° 067° 067° 067° 067° 066°			SHA 087° 086° 086° 086° 086° 086°			SHA 097° 095° 092° 090° 087° 084°						
	Greenwich Culmination Time: 12:08			Greenwich Culmination Time: 10:50			Greenwich Culmination Time: 10:27						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	81 22.0 +01.3	N	13 06.7 +00.4	163 08.8 +01.9	S	19 28.7 -00.2	165 33.5 +02.1	S	19 55.4 -00.1	00			
01	96 23.3 +01.3	N	13 07.1 +00.5	178 10.7 +01.8	S	19 28.5 -00.1	180 35.6 +02.2	S	19 55.3 +00.0	01			
02	111 24.6 +01.4	N	13 07.6 +00.4	193 12.5 +01.9	S	19 28.4 -00.2	195 37.8 +02.1	S	19 55.3 -00.1	02			
03	126 26.0 +01.3	N	13 08.0 +00.5	208 14.4 +01.8	S	19 28.2 -00.1	210 39.9 +02.2	S	19 55.2 -00.1	03			
04	141 27.3 +01.3	N	13 08.5 +00.4	223 16.2 +01.9	S	19 28.1 -00.1	225 42.1 +02.2	S	19 55.1 +00.0	04			
05	156 28.6 +01.4	N	13 08.9 +00.4	238 18.1 +01.9	S	19 28.0 -00.2	240 44.3 +02.1	S	19 55.1 -00.1	05			
06	171 30.0 +01.3	N	13 09.3 +00.5	253 20.0 +01.8	S	19 27.8 -00.1	255 46.4 +02.2	S	19 55.0 -00.1	06			
07	186 31.3 +01.3	N	13 09.8 +00.4	268 21.8 +01.9	S	19 27.7 -00.2	270 48.6 +02.1	S	19 54.9 +00.0	07			
08	201 32.6 +01.4	N	13 10.2 +00.5	283 23.7 +01.9	S	19 27.5 -00.1	285 50.7 +02.2	S	19 54.9 -00.1	08			
09	216 34.0 +01.3	N	13 10.7 +00.4	298 25.6 +01.8	S	19 27.4 -00.1	300 52.9 +02.2	S	19 54.8 +00.0	09			
10	231 35.3 +01.3	N	13 11.1 +00.5	313 27.4 +01.9	S	19 27.3 -00.2	315 55.1 +02.1	S	19 54.8 -00.1	10			
11	246 36.6 +01.4	N	13 11.6 +00.4	328 29.3 +01.8	S	19 27.1 -00.1	330 57.2 +02.2	S	19 54.7 -00.1	11			
12	261 38.0 +01.3	N	13 12.0 +00.5	343 31.1 +01.9	S	19 27.0 -00.2	345 59.4 +02.1	S	19 54.6 +00.0	12			
13	276 39.3 +01.3	N	13 12.5 +00.4	358 33.0 +01.9	S	19 26.8 -00.1	1 01.5 +02.2	S	19 54.6 -00.1	13			
14	291 40.6 +01.4	N	13 12.9 +00.5	13 34.9 +01.8	S	19 26.7 -00.1	16 03.7 +02.1	S	19 54.5 -00.1	14			
15	306 42.0 +01.3	N	13 13.4 +00.4	28 36.7 +01.9	S	19 26.6 -00.2	31 05.8 +02.2	S	19 54.4 +00.0	15			
16	321 43.3 +01.3	N	13 13.8 +00.5	43 38.6 +01.8	S	19 26.4 -00.1	46 08.0 +02.2	S	19 54.4 -00.1	16			
17	336 44.6 +01.3	N	13 14.3 +00.4	58 40.4 +01.9	S	19 26.3 -00.1	61 10.2 +02.1	S	19 54.3 -00.1	17			
18	351 45.9 +01.4	N	13 14.7 +00.4	73 42.3 +01.9	S	19 26.2 -00.2	76 12.3 +02.2	S	19 54.2 +00.0	18			
19	6 47.3 +01.3	N	13 15.1 +00.5	88 44.2 +01.8	S	19 26.0 -00.1	91 14.5 +02.1	S	19 54.2 -00.1	19			
20	21 48.6 +01.3	N	13 15.6 +00.4	103 46.0 +01.9	S	19 25.9 -00.2	106 16.6 +02.2	S	19 54.1 -00.1	20			
21	36 49.9 +01.3	N	13 16.0 +00.5	118 47.9 +01.9	S	19 25.7 -00.1	121 18.8 +02.2	S	19 54.0 +00.0	21			
22	51 51.2 +01.4	N	13 16.5 +00.4	133 49.8 +01.8	S	19 25.6 -00.1	136 21.0 +02.1	S	19 54.0 -00.1	22			
23	66 52.6 +01.3	N	13 16.9 +00.5	148 51.6 +01.9	S	19 25.5 -00.2	151 23.1 +02.2	S	19 53.9 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 331° 331° 330° 330° 330° 330°			SHA 052° 052° 052° 052° 052° 052°			SHA 055° 055° 055° 055° 055° 055°						
	Greenwich Culmination Time: 18:32			Greenwich Culmination Time: 13:05			Greenwich Culmination Time: 12:55						

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	177 57.0 -00.3	S	21 38.5 -00.4	197 08.6 -01.0	S	23 10.7 +00.0	194 51.2 -36.7	S	24 46.4 +01.3	00										
01	192 56.7 -00.2	S	21 38.1 -00.4	212 07.6 -00.9	S	23 10.7 +00.0	209 14.5 -36.7	S	24 47.7 +01.1	01										
02	207 56.5 -00.3	S	21 37.7 -00.4	227 06.7 -01.0	S	23 10.7 +00.0	223 37.8 -36.7	S	24 48.8 +01.0	02										
03	222 56.2 -00.2	S	21 37.3 -00.4	242 05.7 -00.9	S	23 10.7 +00.0	238 01.1 -36.7	S	24 49.8 +00.8	03										
04	237 56.0 -00.2	S	21 36.9 -00.4	257 04.8 -01.0	S	23 10.7 +00.0	252 24.4 -36.6	S	24 50.6 +00.7	04										
05	252 55.8 -00.3	S	21 36.5 -00.5	272 03.8 -00.9	S	23 10.7 +00.0	266 47.8 -36.6	S	24 51.3 +00.5	05										
06	267 55.5 -00.2	S	21 36.0 -00.4	287 02.9 -01.0	S	23 10.7 +00.0	281 11.2 -36.7	S	24 51.8 +00.3	06										
07	282 55.3 -00.3	S	21 35.6 -00.4	302 01.9 -00.9	S	23 10.7 +00.0	295 34.5 -36.5	S	24 52.1 +00.1	07										
08	297 55.0 -00.2	S	21 35.2 -00.4	317 01.0 -01.0	S	23 10.7 +00.0	309 58.0 -36.6	S	24 52.2 +00.0	08										
09	312 54.8 -00.2	S	21 34.8 -00.4	332 00.0 -00.9	S	23 10.7 +00.0	324 21.4 -36.6	S	24 52.2 -00.3	09										
10	327 54.6 -00.3	S	21 34.4 -00.4	346 59.1 -01.0	S	23 10.7 +00.0	338 44.8 -36.5	S	24 51.9 -00.3	10										
11	342 54.3 -00.2	S	21 34.0 -00.4	1 58.1 -00.9	S	23 10.7 +00.0	353 08.3 -36.5	S	24 51.6 -00.6	11										
12	357 54.1 -00.3	S	21 33.6 -00.5	16 57.2 -01.0	S	23 10.7 +00.0	7 31.8 -36.4	S	24 51.0 -00.7	12										
13	12 53.8 -00.2	S	21 33.1 -00.4	31 56.2 -00.9	S	23 10.7 +00.0	21 55.4 -36.4	S	24 50.3 -00.9	13										
14	27 53.6 -00.2	S	21 32.7 -00.4	46 55.3 -00.9	S	23 10.7 +00.0	36 19.0 -36.4	S	24 49.4 -01.0	14										
15	42 53.4 -00.3	S	21 32.3 -00.4	61 54.4 -01.0	S	23 10.7 +00.0	50 42.6 -36.4	S	24 48.4 -01.2	15										
16	57 53.1 -00.2	S	21 31.9 -00.4	76 53.4 -00.9	S	23 10.7 +00.0	65 06.2 -36.3	S	24 47.2 -01.4	16										
17	72 52.9 -00.3	S	21 31.5 -00.5	91 52.5 -01.0	S	23 10.7 +00.0	79 29.9 -36.2	S	24 45.8 -01.5	17										
18	87 52.6 -00.2	S	21 31.0 -00.4	106 51.5 -00.9	S	23 10.7 -00.1	93 53.7 -36.2	S	24 44.3 -01.7	18										
19	102 52.4 -00.2	S	21 30.6 -00.4	121 50.6 -01.0	S	23 10.6 +00.0	108 17.5 -36.2	S	24 42.6 -01.9	19										
20	117 52.2 -00.3	S	21 30.2 -00.4	136 49.6 -00.9	S	23 10.6 +00.0	122 41.3 -36.1	S	24 40.7 -02.1	20										
21	132 51.9 -00.2	S	21 29.8 -00.5	151 48.7 -01.0	S	23 10.6 +00.0	137 05.2 -36.1	S	24 38.6 -02.2	21										
22	147 51.7 -00.2	S	21 29.3 -00.4	166 47.7 -00.9	S	23 10.6 +00.0	151 29.1 -36.0	S	24 36.4 -02.3	22										
23	162 51.5 -00.3	S	21 28.9 -00.4	181 46.8 -01.0	S	23 10.6 -00.1	165 53.1 -36.0	S	24 34.1 -02.5	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16'3	16'3	16'3	16'3	16'3	16'3	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	16'1	16'1	16'1	16'1	16'0	16'0
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	59'2	59'1	59'0	58'9	58'8	58'7
SHA	066°	066°	066°	066°	065°	065°	SHA	085°	085°	085°	085°	084°	084°	SHA	082°	079°	077°	074°	071°	069°
Greenwich Culmination Time: 12:08							Greenwich Culmination Time: 10:52							Greenwich Culmination Time: 11:28						

UT	Mars				Jupiter				Saturn				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	81 53.9 +01.3	N	13 17.4 +00.4	163 53.5 +01.8	S	19 25.3 -00.1	166 25.3 +02.1	S	19 53.8 +00.0	00										
01	96 55.2 +01.3	N	13 17.8 +00.5	178 55.3 +01.9	S	19 25.2 -00.2	181 27.4 +02.2	S	19 53.8 -00.1	01										
02	111 56.5 +01.4	N	13 18.3 +00.4	193 57.2 +01.9	S	19 25.0 -00.1	196 29.6 +02.2	S	19 53.7 -00.1	02										
03	126 57.9 +01.3	N	13 18.7 +00.5	208 59.1 +01.8	S	19 24.9 -00.1	211 31.8 +02.1	S	19 53.6 +00.0	03										
04	141 59.2 +01.3	N	13 19.2 +00.4	224 00.9 +01.9	S	19 24.8 -00.2	226 33.9 +02.2	S	19 53.6 -00.1	04										
05	157 00.5 +01.3	N	13 19.6 +00.5	239 02.8 +01.9	S	19 24.6 -00.1	241 36.1 +02.1	S	19 53.5 +00.0	05										
06	172 01.8 +01.4	N	13 20.1 +00.4	254 04.7 +01.8	S	19 24.5 -00.2	256 38.2 +02.2	S	19 53.5 -00.1	06										
07	187 03.2 +01.3	N	13 20.5 +00.5	269 06.5 +01.9	S	19 24.3 -00.1	271 40.4 +02.1	S	19 53.4 -00.1	07										
08	202 04.5 +01.3	N	13 21.0 +00.4	284 08.4 +01.8	S	19 24.2 -00.1	286 42.5 +02.2	S	19 53.3 +00.0	08										
09	217 05.8 +01.3	N	13 21.4 +00.5	299 10.2 +01.9	S	19 24.1 -00.2	301 44.7 +02.2	S	19 53.3 -00.1	09										
10	232 07.1 +01.3	N	13 21.9 +00.4	314 12.1 +01.9	S	19 23.9 -00.1	316 46.9 +02.1	S	19 53.2 -00.1	10										
11	247 08.4 +01.4	N	13 22.3 +00.4	329 14.0 +01.8	S	19 23.8 -00.2	331 49.0 +02.2	S	19 53.1 +00.0	11										
12	262 09.8 +01.3	N	13 22.7 +00.5	344 15.8 +01.9	S	19 23.6 -00.1	346 51.2 +02.1	S	19 53.1 -00.1	12										
13	277 11.1 +01.3	N	13 23.2 +00.4	359 17.7 +01.8	S	19 23.5 -00.1	1 53.3 +02.2	S	19 53.0 -00.1	13										
14	292 12.4 +01.3	N	13 23.6 +00.5	14 19.5 +01.9	S	19 23.4 -00.2	16 55.5 +02.2	S	19 52.9 +00.0	14										
15	307 13.7 +01.3	N	13 24.1 +00.4	29 21.4 +01.9	S	19 23.2 -00.1	31 57.7 +02.1	S	19 52.9 -00.1	15										
16	322 15.0 +01.4	N	13 24.5 +00.5	44 23.3 +01.8	S	19 23.1 -00.2	46 59.8 +02.2	S	19 52.8 -00.1	16										
17	337 16.4 +01.3	N	13 25.0 +00.4	59 25.1 +01.9	S	19 22.9 -00.1	62 02.0 +02.1	S	19 52.7 +00.0	17										
18	352 17.7 +01.3	N	13 25.4 +00.5	74 27.0 +01.8	S	19 22.8 -00.2	77 04.1 +02.2	S	19 52.7 -00.1	18										
19	7 19.0 +01.3	N	13 25.9 +00.4	89 28.8 +01.9	S	19 22.6 -00.1	92 06.3 +02.2	S	19 52.6 -00.1	19										
20	22 20.3 +01.3	N	13 26.3 +00.5	104 30.7 +01.9	S	19 22.5 -00.1	107 08.5 +02.1	S	19 52.5 +00.0	20										
21	37 21.6 +01.3	N	13 26.8 +00.4	119 32.6 +01.8	S	19 22.4 -00.2	122 10.6 +02.2	S	19 52.5 -00.1	21										
22	52 22.9 +01.4	N	13 27.2 +00.5	134 34.4 +01.9	S	19 22.2 -00.1	137 12.8 +02.1	S	19 52.4 -00.1	22										
23	67 24.3 +01.3	N	13 27.7 +00.4	149 36.3 +01.9	S	19 22.1 -00.2	152 14.9 +02.2	S	19 52.3 +00.0	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	00'3	00'3	00'3	00'3	00'3	00'3	SD	00'1	00'1	00'1	00'1	00'1	00'1
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP	00'0	00'0	00'0	00'0	00'0	00'0
SHA	330°	330°	330°	330°	330°	330°	SHA	052°	052°	052°	052°	052°	052°	SHA	055°	055°	055°	055°	055°	055°
Greenwich Culmination Time: 18:30							Greenwich Culmination Time: 13:02							Greenwich Culmination Time: 12:52						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 51.2 -00.2	S	21 28.5 -00.4	196 45.8 -00.9	S	23 10.5 +00.0	180 17.1 -35.9	S	24 31.6 -02.7	00			
01	192 51.0 -00.2	S	21 28.1 -00.5	211 44.9 -01.0	S	23 10.5 +00.0	194 41.2 -35.8	S	24 28.9 -02.9	01			
02	207 50.8 -00.3	S	21 27.6 -00.4	226 43.9 -00.9	S	23 10.5 +00.0	209 05.4 -35.8	S	24 26.0 -03.0	02			
03	222 50.5 -00.2	S	21 27.2 -00.4	241 43.0 -01.0	S	23 10.5 +00.0	223 29.6 -35.7	S	24 23.0 -03.1	03			
04	237 50.3 -00.2	S	21 26.8 -00.4	256 42.0 -00.9	S	23 10.5 -00.1	237 53.9 -35.7	S	24 19.9 -03.3	04			
05	252 50.1 -00.3	S	21 26.4 -00.5	271 41.1 -01.0	S	23 10.4 +00.0	252 18.2 -35.5	S	24 16.6 -03.5	05			
06	267 49.8 -00.2	S	21 25.9 -00.4	286 40.1 -00.9	S	23 10.4 +00.0	266 42.7 -35.6	S	24 13.1 -03.6	06			
07	282 49.6 -00.2	S	21 25.5 -00.4	301 39.2 -01.0	S	23 10.4 -00.1	281 07.1 -35.4	S	24 09.5 -03.8	07			
08	297 49.4 -00.3	S	21 25.1 -00.5	316 38.2 -00.9	S	23 10.3 +00.0	295 31.7 -35.4	S	24 05.7 -03.9	08			
09	312 49.1 -00.2	S	21 24.6 -00.4	331 37.3 -00.9	S	23 10.3 +00.0	309 56.3 -35.3	S	24 01.8 -04.1	09			
10	327 48.9 -00.2	S	21 24.2 -00.4	346 36.4 -01.0	S	23 10.3 -00.1	324 21.0 -35.3	S	23 57.7 -04.2	10			
11	342 48.7 -00.3	S	21 23.8 -00.5	1 35.4 -00.9	S	23 10.2 +00.0	338 45.7 -35.1	S	23 53.5 -04.4	11			
12	357 48.4 -00.2	S	21 23.3 -00.4	16 34.5 -01.0	S	23 10.2 +00.0	353 10.6 -35.1	S	23 49.1 -04.5	12			
13	12 48.2 -00.2	S	21 22.9 -00.4	31 33.5 -00.9	S	23 10.2 -00.1	7 35.5 -35.0	S	23 44.6 -04.7	13			
14	27 48.0 -00.3	S	21 22.5 -00.5	46 32.6 -01.0	S	23 10.1 +00.0	22 00.5 -34.9	S	23 39.9 -04.8	14			
15	42 47.7 -00.2	S	21 22.0 -00.4	61 31.6 -00.9	S	23 10.1 -00.1	36 25.6 -34.9	S	23 35.1 -05.0	15			
16	57 47.5 -00.2	S	21 21.6 -00.4	76 30.7 -01.0	S	23 10.0 +00.0	50 50.7 -34.7	S	23 30.1 -05.1	16			
17	72 47.3 -00.3	S	21 21.2 -00.5	91 29.7 -00.9	S	23 10.0 +00.0	65 16.0 -34.7	S	23 25.0 -05.3	17			
18	87 47.0 -00.2	S	21 20.7 -00.4	106 28.8 -01.0	S	23 10.0 -00.1	79 41.3 -34.6	S	23 19.7 -05.3	18			
19	102 46.8 -00.2	S	21 20.3 -00.5	121 27.8 -00.9	S	23 09.9 +00.0	94 06.7 -34.5	S	23 14.4 -05.6	19			
20	117 46.6 -00.3	S	21 19.8 -00.4	136 26.9 -01.0	S	23 09.9 -00.1	108 32.2 -34.4	S	23 08.8 -05.6	20			
21	132 46.3 -00.2	S	21 19.4 -00.4	151 25.9 -00.9	S	23 09.8 +00.0	122 57.8 -34.4	S	23 03.2 -05.9	21			
22	147 46.1 -00.2	S	21 19.0 -00.5	166 25.0 -01.0	S	23 09.8 -00.1	137 23.4 -34.2	S	22 57.3 -05.9	22			
23	162 45.9 -00.2	S	21 18.5 -00.4	181 24.0 -00.9	S	23 09.7 +00.0	151 49.2 -34.2	S	22 51.4 -06.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'0 16'0 15'9 15'9 15'9 15'8						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 58'7 58'6 58'5 58'4 58'2 58'1						
	SHA 065° 065° 065° 065° 064° 064°			SHA 084° 084° 084° 083° 083° 083°			SHA 066° 064° 061° 059° 056° 054°						
	Greenwich Culmination Time: 12:08			Greenwich Culmination Time: 10:53			Greenwich Culmination Time: 12:28						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	82 25.6 +01.3	N	13 28.1 +00.5	164 38.2 +01.8	S	19 21.9 -00.1	167 17.1 +02.1	S	19 52.3 -00.1	00			
01	97 26.9 +01.3	N	13 28.6 +00.4	179 40.0 +01.9	S	19 21.8 -00.1	182 19.2 +02.2	S	19 52.2 -00.1	01			
02	112 28.2 +01.3	N	13 29.0 +00.5	194 41.9 +01.8	S	19 21.7 -00.2	197 21.4 +02.2	S	19 52.1 +00.0	02			
03	127 29.5 +01.3	N	13 29.5 +00.4	209 43.7 +01.9	S	19 21.5 -00.1	212 23.6 +02.1	S	19 52.1 -00.1	03			
04	142 30.8 +01.3	N	13 29.9 +00.4	224 45.6 +01.9	S	19 21.4 -00.2	227 25.7 +02.2	S	19 52.0 +00.0	04			
05	157 32.1 +01.3	N	13 30.3 +00.5	239 47.5 +01.8	S	19 21.2 -00.1	242 27.9 +02.1	S	19 52.0 -00.1	05			
06	172 33.4 +01.4	N	13 30.8 +00.4	254 49.3 +01.9	S	19 21.1 -00.1	257 30.0 +02.2	S	19 51.9 -00.1	06			
07	187 34.8 +01.3	N	13 31.2 +00.5	269 51.2 +01.8	S	19 21.0 -00.2	272 32.2 +02.2	S	19 51.8 +00.0	07			
08	202 36.1 +01.3	N	13 31.7 +00.4	284 53.0 +01.9	S	19 20.8 -00.1	287 34.4 +02.1	S	19 51.8 -00.1	08			
09	217 37.4 +01.3	N	13 32.1 +00.5	299 54.9 +01.9	S	19 20.7 -00.2	302 36.5 +02.2	S	19 51.7 -00.1	09			
10	232 38.7 +01.3	N	13 32.6 +00.4	314 56.8 +01.8	S	19 20.5 -00.1	317 38.7 +02.1	S	19 51.6 +00.0	10			
11	247 40.0 +01.3	N	13 33.0 +00.5	329 58.6 +01.9	S	19 20.4 -00.1	332 40.8 +02.2	S	19 51.6 -00.1	11			
12	262 41.3 +01.3	N	13 33.5 +00.4	345 00.5 +01.8	S	19 20.3 -00.2	347 43.0 +02.1	S	19 51.5 -00.1	12			
13	277 42.6 +01.3	N	13 33.9 +00.5	0 02.3 +01.9	S	19 20.1 -00.1	2 45.1 +02.2	S	19 51.4 +00.0	13			
14	292 43.9 +01.3	N	13 34.4 +00.4	15 04.2 +01.9	S	19 20.0 -00.2	17 47.3 +02.2	S	19 51.4 -00.1	14			
15	307 45.2 +01.3	N	13 34.8 +00.5	30 06.1 +01.8	S	19 19.8 -00.1	32 49.5 +02.1	S	19 51.3 -00.1	15			
16	322 46.5 +01.3	N	13 35.3 +00.4	45 07.9 +01.9	S	19 19.7 -00.2	47 51.6 +02.2	S	19 51.2 +00.0	16			
17	337 47.8 +01.4	N	13 35.7 +00.5	60 09.8 +01.8	S	19 19.5 -00.1	62 53.8 +02.1	S	19 51.2 -00.1	17			
18	352 49.2 +01.3	N	13 36.2 +00.4	75 11.6 +01.9	S	19 19.4 -00.1	77 55.9 +02.2	S	19 51.1 -00.1	18			
19	7 50.5 +01.3	N	13 36.6 +00.5	90 13.5 +01.9	S	19 19.3 -00.2	92 58.1 +02.1	S	19 51.0 +00.0	19			
20	22 51.8 +01.3	N	13 37.1 +00.4	105 15.4 +01.8	S	19 19.1 -00.1	108 00.2 +02.2	S	19 51.0 -00.1	20			
21	37 53.1 +01.3	N	13 37.5 +00.5	120 17.2 +01.9	S	19 19.0 -00.2	123 02.4 +02.2	S	19 50.9 -00.1	21			
22	52 54.4 +01.3	N	13 38.0 +00.4	135 19.1 +01.8	S	19 18.8 -00.1	138 04.6 +02.1	S	19 50.8 +00.0	22			
23	67 55.7 +01.3	N	13 38.4 +00.4	150 20.9 +01.9	S	19 18.7 -00.1	153 06.7 +02.2	S	19 50.8 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 330° 330° 330° 329° 329° 329°			SHA 052° 052° 052° 052° 052° 052°			SHA 055° 055° 055° 055° 055° 054°						
	Greenwich Culmination Time: 18:28			Greenwich Culmination Time: 12:59			Greenwich Culmination Time: 12:49						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 45.7 -00.3	S 21 18.1 -00.5	196 23.1 -00.9	S 23 09.7 -00.1	166 15.0 -34.0	S 22 45.3 -06.2	00						
01	192 45.4 -00.2	S 21 17.6 -00.4	211 22.2 -01.0	S 23 09.6 +00.0	180 41.0 -34.0	S 22 39.1 -06.3	01						
02	207 45.2 -00.2	S 21 17.2 -00.5	226 21.2 -00.9	S 23 09.6 -00.1	195 07.0 -33.9	S 22 32.8 -06.5	02						
03	222 45.0 -00.3	S 21 16.7 -00.4	241 20.3 -01.0	S 23 09.5 +00.0	209 33.1 -33.7	S 22 26.3 -06.6	03						
04	237 44.7 -00.2	S 21 16.3 -00.5	256 19.3 -00.9	S 23 09.5 -00.1	223 59.4 -33.7	S 22 19.7 -06.7	04						
05	252 44.5 -00.2	S 21 15.8 -00.4	271 18.4 -01.0	S 23 09.4 -00.1	238 25.7 -33.6	S 22 13.0 -06.9	05						
06	267 44.3 -00.2	S 21 15.4 -00.4	286 17.4 -00.9	S 23 09.3 +00.0	252 52.1 -33.5	S 22 06.1 -06.9	06						
07	282 44.1 -00.3	S 21 15.0 -00.5	301 16.5 -01.0	S 23 09.3 -00.1	267 18.6 -33.4	S 21 59.2 -07.1	07						
08	297 43.8 -00.2	S 21 14.5 -00.4	316 15.5 -00.9	S 23 09.2 +00.0	281 45.2 -33.3	S 21 52.1 -07.3	08						
09	312 43.6 -00.2	S 21 14.1 -00.5	331 14.6 -01.0	S 23 09.2 -00.1	296 11.9 -33.2	S 21 44.8 -07.3	09						
10	327 43.4 -00.2	S 21 13.6 -00.4	346 13.6 -00.9	S 23 09.1 -00.1	310 38.7 -33.1	S 21 37.5 -07.5	10						
11	342 43.2 -00.3	S 21 13.2 -00.5	1 12.7 -01.0	S 23 09.0 +00.0	325 05.6 -33.0	S 21 30.0 -07.5	11						
12	357 42.9 -00.2	S 21 12.7 -00.4	16 11.7 -00.9	S 23 09.0 -00.1	339 32.6 -32.9	S 21 22.5 -07.7	12						
13	12 42.7 -00.2	S 21 12.3 -00.5	31 10.8 -00.9	S 23 08.9 -00.1	353 59.7 -32.8	S 21 14.8 -07.9	13						
14	27 42.5 -00.2	S 21 11.8 -00.4	46 09.9 -01.0	S 23 08.8 +00.0	8 26.9 -32.7	S 21 06.9 -07.9	14						
15	42 42.3 -00.3	S 21 11.4 -00.5	61 08.9 -00.9	S 23 08.8 -00.1	22 54.2 -32.6	S 20 59.0 -08.0	15						
16	57 42.0 -00.2	S 21 10.9 -00.5	76 08.0 -01.0	S 23 08.7 -00.1	37 21.6 -32.5	S 20 51.0 -08.1	16						
17	72 41.8 -00.2	S 21 10.4 -00.4	91 07.0 -00.9	S 23 08.6 -00.1	51 49.1 -32.4	S 20 42.9 -08.3	17						
18	87 41.6 -00.2	S 21 10.0 -00.5	106 06.1 -01.0	S 23 08.5 +00.0	66 16.7 -32.3	S 20 34.6 -08.4	18						
19	102 41.4 -00.3	S 21 09.5 -00.4	121 05.1 -00.9	S 23 08.5 -00.1	80 44.4 -32.2	S 20 26.2 -08.4	19						
20	117 41.1 -00.2	S 21 09.1 -00.5	136 04.2 -01.0	S 23 08.4 -00.1	95 12.2 -32.1	S 20 17.8 -08.6	20						
21	132 40.9 -00.2	S 21 08.6 -00.4	151 03.2 -00.9	S 23 08.3 -00.1	109 40.1 -32.0	S 20 09.2 -08.7	21						
22	147 40.7 -00.2	S 21 08.2 -00.5	166 02.3 -01.0	S 23 08.2 +00.0	124 08.1 -31.9	S 20 00.5 -08.7	22						
23	162 40.5 -00.3	S 21 07.7 -00.5	181 01.3 -00.9	S 23 08.2 -00.1	138 36.2 -31.8	S 19 51.8 -08.9	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'3 16'3 16'3 16'3 16'3 16'3		SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 15'8 15'8 15'7 15'7 15'7 15'6								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 58'0 57'9 57'8 57'7 57'5 57'4								
	SHA 064° 064° 064° 063° 063° 063°		SHA 083° 082° 082° 082° 082° 081°		SHA 051° 049° 047° 044° 042° 040°								
	Greenwich Culmination Time: 12:09		Greenwich Culmination Time: 10:55		Greenwich Culmination Time: 13:24								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	82 57.0 +01.3	N 13 38.8 +00.5	165 22.8 +01.9	S 19 18.6 -00.2	168 08.9 +02.1	S 19 50.7 -00.1	00						
01	97 58.3 +01.3	N 13 39.3 +00.4	180 24.7 +01.8	S 19 18.4 -00.1	183 11.0 +02.2	S 19 50.6 +00.0	01						
02	112 59.6 +01.3	N 13 39.7 +00.5	195 26.5 +01.9	S 19 18.3 -00.2	198 13.2 +02.2	S 19 50.6 -00.1	02						
03	128 00.9 +01.3	N 13 40.2 +00.4	210 28.4 +01.8	S 19 18.1 -00.1	213 15.4 +02.1	S 19 50.5 -00.1	03						
04	143 02.2 +01.3	N 13 40.6 +00.5	225 30.2 +01.9	S 19 18.0 -00.2	228 17.5 +02.2	S 19 50.4 +00.0	04						
05	158 03.5 +01.3	N 13 41.1 +00.4	240 32.1 +01.9	S 19 17.8 -00.1	243 19.7 +02.1	S 19 50.4 -00.1	05						
06	173 04.8 +01.3	N 13 41.5 +00.5	255 34.0 +01.8	S 19 17.7 -00.1	258 21.8 +02.2	S 19 50.3 -00.1	06						
07	188 06.1 +01.3	N 13 42.0 +00.4	270 35.8 +01.9	S 19 17.6 -00.2	273 24.0 +02.1	S 19 50.2 +00.0	07						
08	203 07.4 +01.3	N 13 42.4 +00.5	285 37.7 +01.9	S 19 17.4 -00.1	288 26.1 +02.2	S 19 50.2 -00.1	08						
09	218 08.7 +01.3	N 13 42.9 +00.4	300 39.6 +01.8	S 19 17.3 -00.2	303 28.3 +02.2	S 19 50.1 +00.0	09						
10	233 10.0 +01.3	N 13 43.3 +00.5	315 41.4 +01.9	S 19 17.1 -00.1	318 30.5 +02.1	S 19 50.1 -00.1	10						
11	248 11.3 +01.3	N 13 43.8 +00.4	330 43.3 +01.8	S 19 17.0 -00.2	333 32.6 +02.2	S 19 50.0 -00.1	11						
12	263 12.6 +01.3	N 13 44.2 +00.5	345 45.1 +01.9	S 19 16.8 -00.1	348 34.8 +02.1	S 19 49.9 +00.0	12						
13	278 13.9 +01.3	N 13 44.7 +00.4	0 47.0 +01.9	S 19 16.7 -00.1	3 36.9 +02.2	S 19 49.9 -00.1	13						
14	293 15.2 +01.3	N 13 45.1 +00.5	15 48.9 +01.8	S 19 16.6 -00.2	18 39.1 +02.1	S 19 49.8 -00.1	14						
15	308 16.5 +01.3	N 13 45.6 +00.4	30 50.7 +01.9	S 19 16.4 -00.1	33 41.2 +02.2	S 19 49.7 +00.0	15						
16	323 17.8 +01.3	N 13 46.0 +00.5	45 52.6 +01.8	S 19 16.3 -00.2	48 43.4 +02.2	S 19 49.7 -00.1	16						
17	338 19.1 +01.3	N 13 46.5 +00.4	60 54.4 +01.9	S 19 16.1 -00.1	63 45.6 +02.1	S 19 49.6 -00.1	17						
18	353 20.4 +01.3	N 13 46.9 +00.5	75 56.3 +01.9	S 19 16.0 -00.2	78 47.7 +02.2	S 19 49.5 +00.0	18						
19	8 21.7 +01.3	N 13 47.4 +00.4	90 58.2 +01.8	S 19 15.8 -00.1	93 49.9 +02.1	S 19 49.5 -00.1	19						
20	23 23.0 +01.3	N 13 47.8 +00.4	106 00.0 +01.9	S 19 15.7 -00.1	108 52.0 +02.2	S 19 49.4 -00.1	20						
21	38 24.3 +01.3	N 13 48.2 +00.5	121 01.9 +01.8	S 19 15.6 -00.2	123 54.2 +02.2	S 19 49.3 +00.0	21						
22	53 25.6 +01.3	N 13 48.7 +00.4	136 03.7 +01.9	S 19 15.4 -00.1	138 56.4 +02.1	S 19 49.3 -00.1	22						
23	68 26.9 +01.2	N 13 49.1 +00.5	151 05.6 +01.9	S 19 15.3 -00.2	153 58.5 +02.2	S 19 49.2 -00.1	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 00'3 00'3 00'3 00'3 00'3 00'3		SD 00'1 00'1 00'1 00'1 00'1 00'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0								
	SHA 329° 329° 329° 329° 329° 329°		SHA 052° 052° 052° 052° 052° 051°		SHA 054° 054° 054° 054° 054° 054°								
	Greenwich Culmination Time: 18:26		Greenwich Culmination Time: 12:56		Greenwich Culmination Time: 12:45								

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	177 40.2 -00.2	S	21 07.2 -00.4	196 00.4 -00.9	S	23 08.1 -00.1	153 04.4 -31.7	S	19 42.9 -09.0	00										
01	192 40.0 -00.2	S	21 06.8 -00.5	210 59.5 -01.0	S	23 08.0 -00.1	167 32.7 -31.5	S	19 33.9 -09.0	01										
02	207 39.8 -00.2	S	21 06.3 -00.4	225 58.5 -00.9	S	23 07.9 -00.1	182 01.2 -31.5	S	19 24.9 -09.2	02										
03	222 39.6 -00.2	S	21 05.9 -00.5	240 57.6 -01.0	S	23 07.8 -00.1	196 29.7 -31.4	S	19 15.7 -09.3	03										
04	237 39.4 -00.3	S	21 05.4 -00.5	255 56.6 -00.9	S	23 07.7 +00.0	210 58.3 -31.3	S	19 06.4 -09.3	04										
05	252 39.1 -00.2	S	21 04.9 -00.4	270 55.7 -01.0	S	23 07.7 -00.1	225 27.0 -31.1	S	18 57.1 -09.5	05										
06	267 38.9 -00.2	S	21 04.5 -00.5	285 54.7 -00.9	S	23 07.6 -00.1	239 55.9 -31.1	S	18 47.6 -09.5	06										
07	282 38.7 -00.2	S	21 04.0 -00.5	300 53.8 -01.0	S	23 07.5 -00.1	254 24.8 -31.0	S	18 38.1 -09.6	07										
08	297 38.5 -00.2	S	21 03.5 -00.4	315 52.8 -00.9	S	23 07.4 -00.1	268 53.8 -30.9	S	18 28.5 -09.7	08										
09	312 38.3 -00.3	S	21 03.1 -00.5	330 51.9 -00.9	S	23 07.3 -00.1	283 22.9 -30.7	S	18 18.8 -09.8	09										
10	327 38.0 -00.2	S	21 02.6 -00.5	345 51.0 -01.0	S	23 07.2 -00.1	297 52.2 -30.7	S	18 09.0 -09.9	10										
11	342 37.8 -00.2	S	21 02.1 -00.4	0 50.0 -00.9	S	23 07.1 -00.1	312 21.5 -30.6	S	17 59.1 -09.9	11										
12	357 37.6 -00.2	S	21 01.7 -00.5	15 49.1 -01.0	S	23 07.0 -00.1	326 50.9 -30.4	S	17 49.2 -10.0	12										
13	12 37.4 -00.2	S	21 01.2 -00.5	30 48.1 -00.9	S	23 06.9 -00.1	341 20.5 -30.4	S	17 39.2 -10.2	13										
14	27 37.2 -00.3	S	21 00.7 -00.4	45 47.2 -01.0	S	23 06.8 -00.1	355 50.1 -30.3	S	17 29.0 -10.2	14										
15	42 36.9 -00.2	S	21 00.3 -00.5	60 46.2 -00.9	S	23 06.7 -00.1	10 19.8 -30.1	S	17 18.8 -10.2	15										
16	57 36.7 -00.2	S	20 59.8 -00.5	75 45.3 -01.0	S	23 06.6 -00.1	24 49.7 -30.1	S	17 08.6 -10.4	16										
17	72 36.5 -00.2	S	20 59.3 -00.4	90 44.3 -00.9	S	23 06.5 -00.1	39 19.6 -30.0	S	16 58.2 -10.4	17										
18	87 36.3 -00.2	S	20 58.9 -00.5	105 43.4 -00.9	S	23 06.4 -00.1	53 49.6 -29.8	S	16 47.8 -10.5	18										
19	102 36.1 -00.2	S	20 58.4 -00.5	120 42.5 -01.0	S	23 06.3 -00.1	68 19.8 -29.8	S	16 37.3 -10.5	19										
20	117 35.9 -00.3	S	20 57.9 -00.5	135 41.5 -00.9	S	23 06.2 -00.1	82 50.0 -29.7	S	16 26.8 -10.7	20										
21	132 35.6 -00.2	S	20 57.4 -00.4	150 40.6 -01.0	S	23 06.1 -00.1	97 20.3 -29.6	S	16 16.1 -10.7	21										
22	147 35.4 -00.2	S	20 57.0 -00.5	165 39.6 -00.9	S	23 06.0 -00.1	111 50.7 -29.5	S	16 05.4 -10.7	22										
23	162 35.2 -00.2	S	20 56.5 -00.5	180 38.7 -01.0	S	23 05.9 -00.1	126 21.2 -29.4	S	15 54.7 -10.9	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16'3	16'3	16'3	16'3	16'3	16'3	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	15'6	15'6	15'5	15'5	15'5	15'4
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	57'3	57'2	57'1	56'9	56'8	56'7
SHA	063°	063°	063°	062°	062°	062°	SHA	081°	081°	081°	081°	080°	080°	SHA	037°	035°	033°	031°	028°	026°
Greenwich Culmination Time: 12:09							Greenwich Culmination Time: 10:56							Greenwich Culmination Time: 14:17						

UT	Mars				Jupiter				Saturn				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	83 28.1 +01.3	N	13 49.6 +00.4	166 07.5 +01.8	S	19 15.1 -00.1	169 00.7 +02.1	S	19 49.1 +00.0	00										
01	98 29.4 +01.3	N	13 50.0 +00.5	181 09.3 +01.9	S	19 15.0 -00.1	184 02.8 +02.2	S	19 49.1 -00.1	01										
02	113 30.7 +01.3	N	13 50.5 +00.4	196 11.2 +01.8	S	19 14.9 -00.2	199 05.0 +02.1	S	19 49.0 -00.1	02										
03	128 32.0 +01.3	N	13 50.9 +00.5	211 13.0 +01.9	S	19 14.7 -00.1	214 07.1 +02.2	S	19 48.9 +00.0	03										
04	143 33.3 +01.3	N	13 51.4 +00.4	226 14.9 +01.9	S	19 14.6 -00.2	229 09.3 +02.2	S	19 48.9 -00.1	04										
05	158 34.6 +01.3	N	13 51.8 +00.5	241 16.8 +01.8	S	19 14.4 -00.1	244 11.5 +02.1	S	19 48.8 -00.1	05										
06	173 35.9 +01.3	N	13 52.3 +00.4	256 18.6 +01.9	S	19 14.3 -00.2	259 13.6 +02.2	S	19 48.7 +00.0	06										
07	188 37.2 +01.3	N	13 52.7 +00.5	271 20.5 +01.8	S	19 14.1 -00.1	274 15.8 +02.1	S	19 48.7 -00.1	07										
08	203 38.5 +01.3	N	13 53.2 +00.4	286 22.3 +01.9	S	19 14.0 -00.2	289 17.9 +02.2	S	19 48.6 -00.1	08										
09	218 39.8 +01.3	N	13 53.6 +00.5	301 24.2 +01.8	S	19 13.8 -00.1	304 20.1 +02.1	S	19 48.5 +00.0	09										
10	233 41.1 +01.2	N	13 54.1 +00.4	316 26.0 +01.9	S	19 13.7 -00.1	319 22.2 +02.2	S	19 48.5 -00.1	10										
11	248 42.3 +01.3	N	13 54.5 +00.5	331 27.9 +01.9	S	19 13.6 -00.2	334 24.4 +02.2	S	19 48.4 -00.1	11										
12	263 43.6 +01.3	N	13 55.0 +00.4	346 29.8 +01.8	S	19 13.4 -00.1	349 26.6 +02.1	S	19 48.3 +00.0	12										
13	278 44.9 +01.3	N	13 55.4 +00.5	1 31.6 +01.9	S	19 13.3 -00.2	4 28.7 +02.2	S	19 48.3 -00.1	13										
14	293 46.2 +01.3	N	13 55.9 +00.4	16 33.5 +01.8	S	19 13.1 -00.1	19 30.9 +02.1	S	19 48.2 -00.1	14										
15	308 47.5 +01.3	N	13 56.3 +00.4	31 35.3 +01.9	S	19 13.0 -00.2	34 33.0 +02.2	S	19 48.1 +00.0	15										
16	323 48.8 +01.3	N	13 56.7 +00.5	46 37.2 +01.9	S	19 12.8 -00.1	49 35.2 +02.1	S	19 48.1 -00.1	16										
17	338 50.1 +01.3	N	13 57.2 +00.4	61 39.1 +01.8	S	19 12.7 -00.1	64 37.3 +02.2	S	19 48.0 -00.1	17										
18	353 51.4 +01.2	N	13 57.6 +00.5	76 40.9 +01.9	S	19 12.6 -00.2	79 39.5 +02.2	S	19 47.9 +00.0	18										
19	8 52.6 +01.3	N	13 58.1 +00.4	91 42.8 +01.8	S	19 12.4 -00.1	94 41.7 +02.1	S	19 47.9 -00.1	19										
20	23 53.9 +01.3	N	13 58.5 +00.5	106 44.6 +01.9	S	19 12.3 -00.2	109 43.8 +02.2	S	19 47.8 -00.1	20										
21	38 55.2 +01.3	N	13 59.0 +00.4	121 46.5 +01.9	S	19 12.1 -00.1	124 46.0 +02.1	S	19 47.7 +00.0	21										
22	53 56.5 +01.3	N	13 59.4 +00.5	136 48.4 +01.8	S	19 12.0 -00.2	139 48.1 +02.2	S	19 47.7 -00.1	22										
23	68 57.8 +01.3	N	13 59.9 +00.4	151 50.2 +01.9	S	19 11.8 -00.1	154 50.3 +02.1	S	19 47.6 -00.1	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	00'3	00'3	00'3	00'3	00'3	00'3	SD	00'1	00'1	00'1	00'1	00'1	00'1
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP	00'0	00'0	00'0	00'0	00'0	00'0
SHA	329°	329°	329°	329°	328°	328°	SHA	051°	051°	051°	051°	051°	051°	SHA	054°	054°	054°	054°	054°	054°
Greenwich Culmination Time: 18:24							Greenwich Culmination Time: 12:53							Greenwich Culmination Time: 12:42						

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	177 35.0 -00.2	S	20 56.0 -00.5	195 37.7 -00.9	S	23 05.8 -00.1	140 51.8 -29.3	S	15 43.8 -10.9	00										
01	192 34.8 -00.2	S	20 55.5 -00.5	210 36.8 -00.9	S	23 05.7 -00.1	155 22.5 -29.2	S	15 32.9 -10.9	01										
02	207 34.6 -00.2	S	20 55.0 -00.4	225 35.9 -01.0	S	23 05.6 -00.2	169 53.3 -29.1	S	15 22.0 -11.1	02										
03	222 34.4 -00.3	S	20 54.6 -00.5	240 34.9 -00.9	S	23 05.4 -00.1	184 24.2 -29.1	S	15 10.9 -11.0	03										
04	237 34.1 -00.2	S	20 54.1 -00.5	255 34.0 -01.0	S	23 05.3 -00.1	198 55.1 -28.9	S	14 59.9 -11.2	04										
05	252 33.9 -00.2	S	20 53.6 -00.5	270 33.0 -00.9	S	23 05.2 -00.1	213 26.2 -28.8	S	14 48.7 -11.2	05										
06	267 33.7 -00.2	S	20 53.1 -00.4	285 32.1 -01.0	S	23 05.1 -00.1	227 57.4 -28.8	S	14 37.5 -11.2	06										
07	282 33.5 -00.2	S	20 52.7 -00.5	300 31.1 -00.9	S	23 05.0 -00.1	242 28.6 -28.7	S	14 26.3 -11.3	07										
08	297 33.3 -00.2	S	20 52.2 -00.5	315 30.2 -00.9	S	23 04.9 -00.2	256 59.9 -28.5	S	14 15.0 -11.4	08										
09	312 33.1 -00.2	S	20 51.7 -00.5	330 29.3 -01.0	S	23 04.7 -00.1	271 31.4 -28.5	S	14 03.6 -11.4	09										
10	327 32.9 -00.2	S	20 51.2 -00.5	345 28.3 -00.9	S	23 04.6 -00.1	286 02.9 -28.4	S	13 52.2 -11.5	10										
11	342 32.7 -00.3	S	20 50.7 -00.5	0 27.4 -01.0	S	23 04.5 -00.1	300 34.5 -28.3	S	13 40.7 -11.5	11										
12	357 32.4 -00.2	S	20 50.2 -00.4	15 26.4 -00.9	S	23 04.4 -00.2	315 06.2 -28.3	S	13 29.2 -11.6	12										
13	12 32.2 -00.2	S	20 49.8 -00.5	30 25.5 -01.0	S	23 04.2 -00.1	329 37.9 -28.1	S	13 17.6 -11.6	13										
14	27 32.0 -00.2	S	20 49.3 -00.5	45 24.5 -00.9	S	23 04.1 -00.1	344 09.8 -28.1	S	13 06.0 -11.7	14										
15	42 31.8 -00.2	S	20 48.8 -00.5	60 23.6 -00.9	S	23 04.0 -00.2	358 41.7 -28.0	S	12 54.3 -11.7	15										
16	57 31.6 -00.2	S	20 48.3 -00.5	75 22.7 -01.0	S	23 03.8 -00.1	13 13.7 -27.9	S	12 42.6 -11.7	16										
17	72 31.4 -00.2	S	20 47.8 -00.5	90 21.7 -00.9	S	23 03.7 -00.1	27 45.8 -27.8	S	12 30.9 -11.8	17										
18	87 31.2 -00.2	S	20 47.3 -00.5	105 20.8 -01.0	S	23 03.6 -00.2	42 18.0 -27.8	S	12 19.1 -11.9	18										
19	102 31.0 -00.2	S	20 46.8 -00.5	120 19.8 -00.9	S	23 03.4 -00.1	56 50.2 -27.6	S	12 07.2 -11.9	19										
20	117 30.8 -00.2	S	20 46.3 -00.5	135 18.9 -00.9	S	23 03.3 -00.1	71 22.6 -27.6	S	11 55.3 -11.9	20										
21	132 30.6 -00.2	S	20 45.8 -00.4	150 18.0 -01.0	S	23 03.2 -00.2	85 55.0 -27.5	S	11 43.4 -12.0	21										
22	147 30.4 -00.3	S	20 45.4 -00.5	165 17.0 -00.9	S	23 03.0 -00.1	100 27.5 -27.5	S	11 31.4 -12.0	22										
23	162 30.1 -00.2	S	20 44.9 -00.5	180 16.1 -01.0	S	23 02.9 -00.1	115 00.0 -27.3	S	11 19.4 -12.0	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16'3	16'3	16'3	16'3	16'3	16'3	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	15'4	15'4	15'3	15'3	15'3	15'2
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	56'6	56'4	56'3	56'2	56'1	56'0
SHA	062°	062°	061°	061°	061°	061°	SHA	080°	080°	079°	079°	079°	079°	SHA	024°	022°	020°	018°	016°	014°
Greenwich Culmination Time: 12:09							Greenwich Culmination Time: 10:58							Greenwich Culmination Time: 15:05						

UT	Mars				Jupiter				Saturn				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	83 59.1 +01.2	N	14 00.3 +00.5	166 52.1 +01.8	S	19 11.7 -00.1	169 52.4 +02.2	S	19 47.5 +00.0	00										
01	99 00.3 +01.3	N	14 00.8 +00.4	181 53.9 +01.9	S	19 11.6 -00.2	184 54.6 +02.2	S	19 47.5 -00.1	01										
02	114 01.6 +01.3	N	14 01.2 +00.5	196 55.8 +01.9	S	19 11.4 -00.1	199 56.8 +02.1	S	19 47.4 -00.1	02										
03	129 02.9 +01.3	N	14 01.7 +00.4	211 57.7 +01.8	S	19 11.3 -00.2	214 58.9 +02.2	S	19 47.3 +00.0	03										
04	144 04.2 +01.3	N	14 02.1 +00.5	226 59.5 +01.9	S	19 11.1 -00.1	230 01.1 +02.1	S	19 47.3 -00.1	04										
05	159 05.5 +01.3	N	14 02.6 +00.4	242 01.4 +01.8	S	19 11.0 -00.2	245 03.2 +02.2	S	19 47.2 -00.1	05										
06	174 06.8 +01.2	N	14 03.0 +00.5	257 03.2 +01.9	S	19 10.8 -00.1	260 05.4 +02.1	S	19 47.1 +00.0	06										
07	189 08.0 +01.3	N	14 03.5 +00.4	272 05.1 +01.9	S	19 10.7 -00.2	275 07.5 +02.2	S	19 47.1 -00.1	07										
08	204 09.3 +01.3	N	14 03.9 +00.5	287 07.0 +01.8	S	19 10.5 -00.1	290 09.7 +02.2	S	19 47.0 -00.1	08										
09	219 10.6 +01.3	N	14 04.4 +00.4	302 08.8 +01.9	S	19 10.4 -00.1	305 11.9 +02.1	S	19 46.9 +00.0	09										
10	234 11.9 +01.2	N	14 04.8 +00.5	317 10.7 +01.8	S	19 10.3 -00.2	320 14.0 +02.2	S	19 46.9 -00.1	10										
11	249 13.1 +01.3	N	14 05.3 +00.4	332 12.5 +01.9	S	19 10.1 -00.1	335 16.2 +02.1	S	19 46.8 +00.0	11										
12	264 14.4 +01.3	N	14 05.7 +00.4	347 14.4 +01.9	S	19 10.0 -00.2	350 18.3 +02.2	S	19 46.8 -00.1	12										
13	279 15.7 +01.3	N	14 06.1 +00.5	2 16.3 +01.8	S	19 09.8 -00.1	5 20.5 +02.1	S	19 46.7 -00.1	13										
14	294 17.0 +01.3	N	14 06.6 +00.4	17 18.1 +01.9	S	19 09.7 -00.2	20 22.6 +02.2	S	19 46.6 +00.0	14										
15	309 18.3 +01.2	N	14 07.0 +00.5	32 20.0 +01.8	S	19 09.5 -00.1	35 24.8 +02.2	S	19 46.6 -00.1	15										
16	324 19.5 +01.3	N	14 07.5 +00.4	47 21.8 +01.9	S	19 09.4 -00.1	50 27.0 +02.1	S	19 46.5 -00.1	16										
17	339 20.8 +01.3	N	14 07.9 +00.5	62 23.7 +01.9	S	19 09.3 -00.2	65 29.1 +02.2	S	19 46.4 +00.0	17										
18	354 22.1 +01.3	N	14 08.4 +00.4	77 25.6 +01.8	S	19 09.1 -00.1	80 31.3 +02.1	S	19 46.4 -00.1	18										
19	9 23.4 +01.2	N	14 08.8 +00.5	92 27.4 +01.9	S	19 09.0 -00.2	95 33.4 +02.2	S	19 46.3 -00.1	19										
20	24 24.6 +01.3	N	14 09.3 +00.4	107 29.3 +01.8	S	19 08.8 -00.1	110 35.6 +02.1	S	19 46.2 +00.0	20										
21	39 25.9 +01.3	N	14 09.7 +00.5	122 31.1 +01.9	S	19 08.7 -00.2	125 37.7 +02.2	S	19 46.2 -00.1	21										
22	54 27.2 +01.3	N	14 10.2 +00.4	137 33.0 +01.8	S	19 08.5 -00.1	140 39.9 +02.2	S	19 46.1 -00.1	22										
23	69 28.5 +01.2	N	14 10.6 +00.5	152 34.8 +01.9	S	19 08.4 -00.2	155 42.1 +02.1	S	19 46.0 +00.0	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	00'3	00'3	00'3	00'3	00'3	00'3	SD	00'1	00'1	00'1	00'1	00'1	00'1
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP	00'0	00'0	00'0	00'0	00'0	00'0
SHA	328°	328°	328°	328°	328°	328°	SHA	051°	051°	051°	051°	051°	051°	SHA	054°	054°	054°	054°	054°	054°
Greenwich Culmination Time: 18:22							Greenwich Culmination Time: 12:50							Greenwich Culmination Time: 12:38						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 29.9 -00.2	S 20 44.4 -00.5	195 15.1 -00.9	S 23 02.8 -00.2	129 32.7 -27.3	S 11 07.4 -12.1	00						
01	192 29.7 -00.2	S 20 43.9 -00.5	210 14.2 -00.9	S 23 02.6 -00.1	144 05.4 -27.2	S 10 55.3 -12.1	01						
02	207 29.5 -00.2	S 20 43.4 -00.5	225 13.3 -01.0	S 23 02.5 -00.2	158 38.2 -27.2	S 10 43.2 -12.1	02						
03	222 29.3 -00.2	S 20 42.9 -00.5	240 12.3 -00.9	S 23 02.3 -00.1	173 11.0 -27.0	S 10 31.1 -12.2	03						
04	237 29.1 -00.2	S 20 42.4 -00.5	255 11.4 -01.0	S 23 02.2 -00.2	187 44.0 -27.0	S 10 18.9 -12.2	04						
05	252 28.9 -00.2	S 20 41.9 -00.5	270 10.4 -00.9	S 23 02.0 -00.1	202 17.0 -27.0	S 10 06.7 -12.2	05						
06	267 28.7 -00.2	S 20 41.4 -00.5	285 09.5 -00.9	S 23 01.9 -00.2	216 50.0 -26.8	S 09 54.5 -12.3	06						
07	282 28.5 -00.2	S 20 40.9 -00.5	300 08.6 -01.0	S 23 01.7 -00.1	231 23.2 -26.8	S 09 42.2 -12.3	07						
08	297 28.3 -00.2	S 20 40.4 -00.5	315 07.6 -00.9	S 23 01.6 -00.2	245 56.4 -26.7	S 09 29.9 -12.3	08						
09	312 28.1 -00.2	S 20 39.9 -00.5	330 06.7 -01.0	S 23 01.4 -00.1	260 29.7 -26.7	S 09 17.6 -12.4	09						
10	327 27.9 -00.2	S 20 39.4 -00.5	345 05.7 -00.9	S 23 01.3 -00.2	275 03.0 -26.6	S 09 05.2 -12.3	10						
11	342 27.7 -00.2	S 20 38.9 -00.5	0 04.8 -00.9	S 23 01.1 -00.1	289 36.4 -26.5	S 08 52.9 -12.4	11						
12	357 27.5 -00.2	S 20 38.4 -00.5	15 03.9 -01.0	S 23 01.0 -00.2	304 09.9 -26.5	S 08 40.5 -12.5	12						
13	12 27.3 -00.2	S 20 37.9 -00.5	30 02.9 -00.9	S 23 00.8 -00.1	318 43.4 -26.4	S 08 28.0 -12.4	13						
14	27 27.1 -00.2	S 20 37.4 -00.5	45 02.0 -01.0	S 23 00.7 -00.2	333 17.0 -26.4	S 08 15.6 -12.5	14						
15	42 26.9 -00.2	S 20 36.9 -00.5	60 01.0 -00.9	S 23 00.5 -00.1	347 50.6 -26.3	S 08 03.1 -12.5	15						
16	57 26.7 -00.2	S 20 36.4 -00.5	75 00.1 -00.9	S 23 00.4 -00.2	2 24.3 -26.2	S 07 50.6 -12.5	16						
17	72 26.5 -00.2	S 20 35.9 -00.5	89 59.2 -01.0	S 23 00.2 -00.2	16 58.1 -26.2	S 07 38.1 -12.5	17						
18	87 26.3 -00.2	S 20 35.4 -00.5	104 58.2 -00.9	S 23 00.0 -00.1	31 31.9 -26.1	S 07 25.6 -12.5	18						
19	102 26.1 -00.2	S 20 34.9 -00.5	119 57.3 -00.9	S 22 59.9 -00.2	46 05.8 -26.1	S 07 13.1 -12.6	19						
20	117 25.9 -00.2	S 20 34.4 -00.5	134 56.4 -01.0	S 22 59.7 -00.2	60 39.7 -26.0	S 07 00.5 -12.6	20						
21	132 25.7 -00.2	S 20 33.9 -00.5	149 55.4 -00.9	S 22 59.5 -00.1	75 13.7 -26.0	S 06 47.9 -12.6	21						
22	147 25.5 -00.2	S 20 33.4 -00.6	164 54.5 -01.0	S 22 59.4 -00.2	89 47.7 -25.9	S 06 35.3 -12.6	22						
23	162 25.3 -00.2	S 20 32.8 -00.5	179 53.5 -00.9	S 22 59.2 -00.2	104 21.8 -25.8	S 06 22.7 -12.6	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'3 16'3 16'3 16'3 16'3 16'3		SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 15'2 15'2 15'2 15'1 15'1 15'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 55'9 55'7 55'6 55'5 55'4 55'3								
	SHA 061° 061° 060° 060° 060° 060°		SHA 079° 078° 078° 078° 078° 077°		SHA 012° 010° 008° 006° 004° 002°								
	Greenwich Culmination Time: 12:10		Greenwich Culmination Time: 10:59		Greenwich Culmination Time: 15:50								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	84 29.7 +01.3	N 14 11.1 +00.4	167 36.7 +01.9	S 19 08.2 -00.1	170 44.2 +02.2	S 19 46.0 -00.1	00						
01	99 31.0 +01.3	N 14 11.5 +00.5	182 38.6 +01.8	S 19 08.1 -00.1	185 46.4 +02.1	S 19 45.9 -00.1	01						
02	114 32.3 +01.2	N 14 12.0 +00.4	197 40.4 +01.9	S 19 08.0 -00.2	200 48.5 +02.2	S 19 45.8 +00.0	02						
03	129 33.5 +01.3	N 14 12.4 +00.5	212 42.3 +01.8	S 19 07.8 -00.1	215 50.7 +02.1	S 19 45.8 -00.1	03						
04	144 34.8 +01.3	N 14 12.9 +00.4	227 44.1 +01.9	S 19 07.7 -00.2	230 52.8 +02.2	S 19 45.7 -00.1	04						
05	159 36.1 +01.3	N 14 13.3 +00.5	242 46.0 +01.9	S 19 07.5 -00.1	245 55.0 +02.2	S 19 45.6 +00.0	05						
06	174 37.4 +01.2	N 14 13.8 +00.4	257 47.9 +01.8	S 19 07.4 -00.2	260 57.2 +02.1	S 19 45.6 -00.1	06						
07	189 38.6 +01.3	N 14 14.2 +00.4	272 49.7 +01.9	S 19 07.2 -00.1	275 59.3 +02.2	S 19 45.5 -00.1	07						
08	204 39.9 +01.3	N 14 14.6 +00.5	287 51.6 +01.8	S 19 07.1 -00.2	291 01.5 +02.1	S 19 45.4 +00.0	08						
09	219 41.2 +01.2	N 14 15.1 +00.4	302 53.4 +01.9	S 19 06.9 -00.1	306 03.6 +02.2	S 19 45.4 -00.1	09						
10	234 42.4 +01.3	N 14 15.5 +00.5	317 55.3 +01.9	S 19 06.8 -00.2	321 05.8 +02.1	S 19 45.3 -00.1	10						
11	249 43.7 +01.3	N 14 16.0 +00.4	332 57.2 +01.8	S 19 06.6 -00.1	336 07.9 +02.2	S 19 45.2 +00.0	11						
12	264 45.0 +01.2	N 14 16.4 +00.5	347 59.0 +01.9	S 19 06.5 -00.1	351 10.1 +02.2	S 19 45.2 -00.1	12						
13	279 46.2 +01.3	N 14 16.9 +00.4	3 00.9 +01.8	S 19 06.4 -00.2	6 12.3 +02.1	S 19 45.1 -00.1	13						
14	294 47.5 +01.3	N 14 17.3 +00.5	18 02.7 +01.9	S 19 06.2 -00.1	21 14.4 +02.2	S 19 45.0 +00.0	14						
15	309 48.8 +01.2	N 14 17.8 +00.4	33 04.6 +01.9	S 19 06.1 -00.2	36 16.6 +02.1	S 19 45.0 -00.1	15						
16	324 50.0 +01.3	N 14 18.2 +00.5	48 06.5 +01.8	S 19 05.9 -00.1	51 18.7 +02.2	S 19 44.9 -00.1	16						
17	339 51.3 +01.3	N 14 18.7 +00.4	63 08.3 +01.9	S 19 05.8 -00.2	66 20.9 +02.1	S 19 44.8 +00.0	17						
18	354 52.6 +01.2	N 14 19.1 +00.5	78 10.2 +01.8	S 19 05.6 -00.1	81 23.0 +02.2	S 19 44.8 -00.1	18						
19	9 53.8 +01.3	N 14 19.6 +00.4	93 12.0 +01.9	S 19 05.5 -00.2	96 25.2 +02.2	S 19 44.7 -00.1	19						
20	24 55.1 +01.3	N 14 20.0 +00.5	108 13.9 +01.8	S 19 05.3 -00.1	111 27.4 +02.1	S 19 44.6 +00.0	20						
21	39 56.4 +01.2	N 14 20.5 +00.4	123 15.7 +01.9	S 19 05.2 -00.2	126 29.5 +02.2	S 19 44.6 -00.1	21						
22	54 57.6 +01.3	N 14 20.9 +00.5	138 17.6 +01.9	S 19 05.0 -00.1	141 31.7 +02.1	S 19 44.5 -00.1	22						
23	69 58.9 +01.3	N 14 21.4 +00.4	153 19.5 +01.8	S 19 04.9 -00.1	156 33.8 +02.2	S 19 44.4 +00.0	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 00'3 00'3 00'3 00'3 00'3 00'3		SD 00'1 00'1 00'1 00'1 00'1 00'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0								
	SHA 328° 328° 328° 328° 328° 327°		SHA 051° 051° 051° 051° 051° 051°		SHA 054° 054° 054° 054° 054° 054°								
	Greenwich Culmination Time: 18:20		Greenwich Culmination Time: 12:47		Greenwich Culmination Time: 12:35								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 25.1 -00.2	S	20 32.3 -00.5	194 52.6 -00.9	S	22 59.0 -00.1	118 56.0 -25.8	S	06 10.1 -12.6	00			
01	192 24.9 -00.2	S	20 31.8 -00.5	209 51.7 -01.0	S	22 58.9 -00.2	133 30.2 -25.8	S	05 57.5 -12.7	01			
02	207 24.7 -00.2	S	20 31.3 -00.5	224 50.7 -00.9	S	22 58.7 -00.2	148 04.4 -25.7	S	05 44.8 -12.6	02			
03	222 24.5 -00.2	S	20 30.8 -00.5	239 49.8 -00.9	S	22 58.5 -00.2	162 38.7 -25.7	S	05 32.2 -12.7	03			
04	237 24.3 -00.2	S	20 30.3 -00.5	254 48.9 -01.0	S	22 58.3 -00.1	177 13.0 -25.6	S	05 19.5 -12.7	04			
05	252 24.1 -00.2	S	20 29.8 -00.5	269 47.9 -00.9	S	22 58.2 -00.2	191 47.4 -25.6	S	05 06.8 -12.7	05			
06	267 23.9 -00.2	S	20 29.3 -00.5	284 47.0 -01.0	S	22 58.0 -00.2	206 21.8 -25.5	S	04 54.1 -12.7	06			
07	282 23.7 -00.2	S	20 28.8 -00.6	299 46.0 -00.9	S	22 57.8 -00.2	220 56.3 -25.5	S	04 41.4 -12.7	07			
08	297 23.5 -00.2	S	20 28.2 -00.5	314 45.1 -00.9	S	22 57.6 -00.1	235 30.8 -25.5	S	04 28.7 -12.7	08			
09	312 23.3 -00.2	S	20 27.7 -00.5	329 44.2 -01.0	S	22 57.5 -00.2	250 05.3 -25.4	S	04 16.0 -12.7	09			
10	327 23.1 -00.2	S	20 27.2 -00.5	344 43.2 -00.9	S	22 57.3 -00.2	264 39.9 -25.4	S	04 03.3 -12.7	10			
11	342 22.9 -00.2	S	20 26.7 -00.5	359 42.3 -00.9	S	22 57.1 -00.2	279 14.5 -25.3	S	03 50.6 -12.8	11			
12	357 22.7 -00.2	S	20 26.2 -00.5	14 41.4 -01.0	S	22 56.9 -00.2	293 49.2 -25.3	S	03 37.8 -12.7	12			
13	12 22.5 -00.2	S	20 25.7 -00.6	29 40.4 -00.9	S	22 56.7 -00.2	308 23.9 -25.3	S	03 25.1 -12.7	13			
14	27 22.3 -00.2	S	20 25.1 -00.5	44 39.5 -00.9	S	22 56.5 -00.1	322 58.6 -25.2	S	03 12.4 -12.8	14			
15	42 22.1 -00.2	S	20 24.6 -00.5	59 38.6 -01.0	S	22 56.4 -00.2	337 33.4 -25.2	S	02 59.6 -12.7	15			
16	57 21.9 -00.2	S	20 24.1 -00.5	74 37.6 -00.9	S	22 56.2 -00.2	352 08.2 -25.2	S	02 46.9 -12.7	16			
17	72 21.7 -00.2	S	20 23.6 -00.5	89 36.7 -00.9	S	22 56.0 -00.2	6 43.0 -25.1	S	02 34.2 -12.8	17			
18	87 21.5 -00.2	S	20 23.1 -00.6	104 35.8 -01.0	S	22 55.8 -00.2	21 17.9 -25.1	S	02 21.4 -12.7	18			
19	102 21.3 -00.2	S	20 22.5 -00.5	119 34.8 -00.9	S	22 55.6 -00.2	35 52.8 -25.1	S	02 08.7 -12.7	19			
20	117 21.1 -00.2	S	20 22.0 -00.5	134 33.9 -00.9	S	22 55.4 -00.2	50 27.7 -25.1	S	01 56.0 -12.8	20			
21	132 20.9 -00.2	S	20 21.5 -00.5	149 33.0 -01.0	S	22 55.2 -00.2	65 02.6 -25.0	S	01 43.2 -12.7	21			
22	147 20.7 -00.2	S	20 21.0 -00.6	164 32.0 -00.9	S	22 55.0 -00.2	79 37.6 -25.0	S	01 30.5 -12.7	22			
23	162 20.5 -00.1	S	20 20.4 -00.5	179 31.1 -00.9	S	22 54.8 -00.2	94 12.6 -24.9	S	01 17.8 -12.8	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'0 15'0 15'0 15'0 15'0 14'9						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 55'2 55'1 55'0 55'0 54'9 54'8						
	SHA 060° 060° 059° 059° 059° 059°			SHA 077° 077° 077° 076° 076° 076°			SHA 000° 358° 357° 355° 353° 351°						
	Greenwich Culmination Time: 12:10			Greenwich Culmination Time: 11:01			Greenwich Culmination Time: 16:32						
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	85 00.2 +01.2	N	14 21.8 +00.4	168 21.3 +01.9	S	19 04.8 -00.2	171 36.0 +02.1	S	19 44.4 -00.1	00			
01	100 01.4 +01.3	N	14 22.2 +00.5	183 23.2 +01.8	S	19 04.6 -00.1	186 38.1 +02.2	S	19 44.3 -00.1	01			
02	115 02.7 +01.3	N	14 22.7 +00.4	198 25.0 +01.9	S	19 04.5 -00.2	201 40.3 +02.1	S	19 44.2 +00.0	02			
03	130 04.0 +01.2	N	14 23.1 +00.5	213 26.9 +01.9	S	19 04.3 -00.1	216 42.4 +02.2	S	19 44.2 -00.1	03			
04	145 05.2 +01.3	N	14 23.6 +00.4	228 28.8 +01.8	S	19 04.2 -00.2	231 44.6 +02.2	S	19 44.1 -00.1	04			
05	160 06.5 +01.2	N	14 24.0 +00.5	243 30.6 +01.9	S	19 04.0 -00.1	246 46.8 +02.1	S	19 44.0 +00.0	05			
06	175 07.7 +01.3	N	14 24.5 +00.4	258 32.5 +01.8	S	19 03.9 -00.2	261 48.9 +02.2	S	19 44.0 -00.1	06			
07	190 09.0 +01.3	N	14 24.9 +00.5	273 34.3 +01.9	S	19 03.7 -00.1	276 51.1 +02.1	S	19 43.9 -00.1	07			
08	205 10.3 +01.2	N	14 25.4 +00.4	288 36.2 +01.9	S	19 03.6 -00.2	291 53.2 +02.2	S	19 43.8 +00.0	08			
09	220 11.5 +01.3	N	14 25.8 +00.5	303 38.1 +01.8	S	19 03.4 -00.1	306 55.4 +02.1	S	19 43.8 -00.1	09			
10	235 12.8 +01.2	N	14 26.3 +00.4	318 39.9 +01.9	S	19 03.3 -00.1	321 57.5 +02.2	S	19 43.7 -00.1	10			
11	250 14.0 +01.3	N	14 26.7 +00.5	333 41.8 +01.8	S	19 03.2 -00.2	336 59.7 +02.2	S	19 43.6 +00.0	11			
12	265 15.3 +01.3	N	14 27.2 +00.4	348 43.6 +01.9	S	19 03.0 -00.1	352 01.9 +02.1	S	19 43.6 -00.1	12			
13	280 16.6 +01.2	N	14 27.6 +00.5	3 45.5 +01.8	S	19 02.9 -00.2	7 04.0 +02.2	S	19 43.5 -00.1	13			
14	295 17.8 +01.3	N	14 28.1 +00.4	18 47.3 +01.9	S	19 02.7 -00.1	22 06.2 +02.1	S	19 43.4 +00.0	14			
15	310 19.1 +01.2	N	14 28.5 +00.5	33 49.2 +01.9	S	19 02.6 -00.2	37 08.3 +02.2	S	19 43.4 -00.1	15			
16	325 20.3 +01.3	N	14 29.0 +00.4	48 51.1 +01.8	S	19 02.4 -00.1	52 10.5 +02.1	S	19 43.3 -00.1	16			
17	340 21.6 +01.2	N	14 29.4 +00.4	63 52.9 +01.9	S	19 02.3 -00.2	67 12.6 +02.2	S	19 43.2 +00.0	17			
18	355 22.8 +01.3	N	14 29.8 +00.5	78 54.8 +01.8	S	19 02.1 -00.1	82 14.8 +02.2	S	19 43.2 -00.1	18			
19	10 24.1 +01.2	N	14 30.3 +00.4	93 56.6 +01.9	S	19 02.0 -00.2	97 17.0 +02.1	S	19 43.1 -00.1	19			
20	25 25.3 +01.3	N	14 30.7 +00.5	108 58.5 +01.9	S	19 01.8 -00.1	112 19.1 +02.2	S	19 43.0 +00.0	20			
21	40 26.6 +01.3	N	14 31.2 +00.4	124 00.4 +01.8	S	19 01.7 -00.2	127 21.3 +02.1	S	19 43.0 -00.1	21			
22	55 27.9 +01.2	N	14 31.6 +00.5	139 02.2 +01.9	S	19 01.5 -00.1	142 23.4 +02.2	S	19 42.9 -00.1	22			
23	70 29.1 +01.3	N	14 32.1 +00.4	154 04.1 +01.8	S	19 01.4 -00.1	157 25.6 +02.1	S	19 42.8 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 327° 327° 327° 327° 327° 327°			SHA 051° 051° 051° 051° 051° 051°			SHA 054° 054° 054° 054° 054° 054°						
	Greenwich Culmination Time: 18:18			Greenwich Culmination Time: 12:44			Greenwich Culmination Time: 12:31						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 20.4 -00.2	S	20 19.9 -00.5	194 30.2 -01.0	S	22 54.6 -00.2	108 47.7 -25.0	S	01 05.0 -12.7	00			
01	192 20.2 -00.2	S	20 19.4 -00.5	209 29.2 -00.9	S	22 54.4 -00.2	123 22.7 -24.9	S	00 52.3 -12.7	01			
02	207 20.0 -00.2	S	20 18.9 -00.6	224 28.3 -00.9	S	22 54.2 -00.2	137 57.8 -24.9	S	00 39.6 -12.7	02			
03	222 19.8 -00.2	S	20 18.3 -00.5	239 27.4 -01.0	S	22 54.0 -00.2	152 32.9 -24.9	S	00 26.9 -12.7	03			
04	237 19.6 -00.2	S	20 17.8 -00.5	254 26.4 -00.9	S	22 53.8 -00.2	167 08.0 -24.9	S	00 14.2 -12.7	04			
05	252 19.4 -00.2	S	20 17.3 -00.5	269 25.5 -00.9	S	22 53.6 -00.2	181 43.1 -24.8	S	00 01.5 -12.7	05			
06	267 19.2 -00.2	S	20 16.8 -00.6	284 24.6 -01.0	S	22 53.4 -00.2	196 18.3 -24.8	N	00 11.2 +12.6	06			
07	282 19.0 -00.2	S	20 16.2 -00.5	299 23.6 -00.9	S	22 53.2 -00.2	210 53.5 -24.8	N	00 23.8 +12.7	07			
08	297 18.8 -00.2	S	20 15.7 -00.5	314 22.7 -00.9	S	22 53.0 -00.2	225 28.7 -24.8	N	00 36.5 +12.6	08			
09	312 18.6 -00.2	S	20 15.2 -00.6	329 21.8 -01.0	S	22 52.8 -00.2	240 03.9 -24.8	N	00 49.1 +12.7	09			
10	327 18.4 -00.1	S	20 14.6 -00.5	344 20.8 -00.9	S	22 52.6 -00.3	254 39.1 -24.8	N	01 01.8 +12.6	10			
11	342 18.3 -00.2	S	20 14.1 -00.5	359 19.9 -00.9	S	22 52.3 -00.2	269 14.3 -24.7	N	01 14.4 +12.6	11			
12	357 18.1 -00.2	S	20 13.6 -00.6	14 19.0 -01.0	S	22 52.1 -00.2	283 49.6 -24.8	N	01 27.0 +12.6	12			
13	12 17.9 -00.2	S	20 13.0 -00.5	29 18.0 -00.9	S	22 51.9 -00.2	298 24.8 -24.7	N	01 39.6 +12.6	13			
14	27 17.7 -00.2	S	20 12.5 -00.5	44 17.1 -00.9	S	22 51.7 -00.2	313 00.1 -24.7	N	01 52.2 +12.6	14			
15	42 17.5 -00.2	S	20 12.0 -00.6	59 16.2 -01.0	S	22 51.5 -00.2	327 35.4 -24.8	N	02 04.8 +12.6	15			
16	57 17.3 -00.2	S	20 11.4 -00.5	74 15.2 -00.9	S	22 51.3 -00.3	342 10.6 -24.7	N	02 17.4 +12.5	16			
17	72 17.1 -00.2	S	20 10.9 -00.5	89 14.3 -00.9	S	22 51.0 -00.2	356 45.9 -24.7	N	02 29.9 +12.5	17			
18	87 16.9 -00.1	S	20 10.4 -00.6	104 13.4 -00.9	S	22 50.8 -00.2	11 21.2 -24.7	N	02 42.4 +12.6	18			
19	102 16.8 -00.2	S	20 09.8 -00.5	119 12.5 -01.0	S	22 50.6 -00.2	25 56.5 -24.7	N	02 55.0 +12.5	19			
20	117 16.6 -00.2	S	20 09.3 -00.6	134 11.5 -00.9	S	22 50.4 -00.2	40 31.8 -24.7	N	03 07.5 +12.4	20			
21	132 16.4 -00.2	S	20 08.7 -00.5	149 10.6 -00.9	S	22 50.2 -00.3	55 07.1 -24.6	N	03 19.9 +12.5	21			
22	147 16.2 -00.2	S	20 08.2 -00.5	164 09.7 -01.0	S	22 49.9 -00.2	69 42.5 -24.7	N	03 32.4 +12.4	22			
23	162 16.0 -00.2	S	20 07.7 -00.6	179 08.7 -00.9	S	22 49.7 -00.2	84 17.8 -24.7	N	03 44.8 +12.5	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 14'9 14'9 14'9 14'9 14'8 14'8						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 54'7 54'7 54'6 54'5 54'5 54'4						
	SHA 059° 058° 058° 058° 058° 058°			SHA 076° 076° 075° 075° 075° 075°			SHA 349° 347° 346° 344° 342° 340°						
	Greenwich Culmination Time: 12:10			Greenwich Culmination Time: 11:02			Greenwich Culmination Time: 17:13						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	85 30.4 +01.2	N	14 32.5 +00.5	169 05.9 +01.9	S	19 01.3 -00.2	172 27.7 +02.2	S	19 42.8 -00.1	00			
01	100 31.6 +01.3	N	14 33.0 +00.4	184 07.8 +01.9	S	19 01.1 -00.1	187 29.9 +02.1	S	19 42.7 -00.1	01			
02	115 32.9 +01.2	N	14 33.4 +00.5	199 09.7 +01.8	S	19 01.0 -00.2	202 32.0 +02.2	S	19 42.6 +00.0	02			
03	130 34.1 +01.3	N	14 33.9 +00.4	214 11.5 +01.9	S	19 00.8 -00.1	217 34.2 +02.2	S	19 42.6 -00.1	03			
04	145 35.4 +01.2	N	14 34.3 +00.5	229 13.4 +01.8	S	19 00.7 -00.2	232 36.4 +02.1	S	19 42.5 -00.1	04			
05	160 36.6 +01.3	N	14 34.8 +00.4	244 15.2 +01.9	S	19 00.5 -00.1	247 38.5 +02.2	S	19 42.4 +00.0	05			
06	175 37.9 +01.2	N	14 35.2 +00.4	259 17.1 +01.8	S	19 00.4 -00.2	262 40.7 +02.1	S	19 42.4 -00.1	06			
07	190 39.1 +01.3	N	14 35.6 +00.5	274 18.9 +01.9	S	19 00.2 -00.1	277 42.8 +02.2	S	19 42.3 -00.1	07			
08	205 40.4 +01.2	N	14 36.1 +00.4	289 20.8 +01.9	S	19 00.1 -00.2	292 45.0 +02.1	S	19 42.2 +00.0	08			
09	220 41.6 +01.3	N	14 36.5 +00.5	304 22.7 +01.8	S	18 59.9 -00.1	307 47.1 +02.2	S	19 42.2 -00.1	09			
10	235 42.9 +01.2	N	14 37.0 +00.4	319 24.5 +01.9	S	18 59.8 -00.2	322 49.3 +02.2	S	19 42.1 -00.1	10			
11	250 44.1 +01.3	N	14 37.4 +00.5	334 26.4 +01.8	S	18 59.6 -00.1	337 51.5 +02.1	S	19 42.0 -00.1	11			
12	265 45.4 +01.2	N	14 37.9 +00.4	349 28.2 +01.9	S	18 59.5 -00.2	352 53.6 +02.2	S	19 41.9 +00.0	12			
13	280 46.6 +01.3	N	14 38.3 +00.5	4 30.1 +01.9	S	18 59.3 -00.1	7 55.8 +02.1	S	19 41.9 -00.1	13			
14	295 47.9 +01.2	N	14 38.8 +00.4	19 32.0 +01.8	S	18 59.2 -00.1	22 57.9 +02.2	S	19 41.8 -00.1	14			
15	310 49.1 +01.3	N	14 39.2 +00.5	34 33.8 +01.9	S	18 59.1 -00.2	38 00.1 +02.1	S	19 41.7 +00.0	15			
16	325 50.4 +01.2	N	14 39.7 +00.4	49 35.7 +01.8	S	18 58.9 -00.1	53 02.2 +02.2	S	19 41.7 -00.1	16			
17	340 51.6 +01.3	N	14 40.1 +00.5	64 37.5 +01.9	S	18 58.8 -00.2	68 04.4 +02.2	S	19 41.6 -00.1	17			
18	355 52.9 +01.2	N	14 40.6 +00.4	79 39.4 +01.9	S	18 58.6 -00.1	83 06.6 +02.1	S	19 41.5 +00.0	18			
19	10 54.1 +01.3	N	14 41.0 +00.4	94 41.3 +01.8	S	18 58.5 -00.2	98 08.7 +02.2	S	19 41.5 -00.1	19			
20	25 55.4 +01.2	N	14 41.4 +00.5	109 43.1 +01.9	S	18 58.3 -00.1	113 10.9 +02.1	S	19 41.4 -00.1	20			
21	40 56.6 +01.2	N	14 41.9 +00.4	124 45.0 +01.8	S	18 58.2 -00.2	128 13.0 +02.2	S	19 41.3 +00.0	21			
22	55 57.8 +01.3	N	14 42.3 +00.5	139 46.8 +01.9	S	18 58.0 -00.1	143 15.2 +02.1	S	19 41.3 -00.1	22			
23	70 59.1 +01.2	N	14 42.8 +00.4	154 48.7 +01.8	S	18 57.9 -00.2	158 17.3 +02.2	S	19 41.2 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 327° 327° 327° 327° 327° 326°			SHA 050° 050° 050° 050° 050° 050°			SHA 054° 054° 054° 054° 054° 054°						
	Greenwich Culmination Time: 18:16			Greenwich Culmination Time: 12:42			Greenwich Culmination Time: 12:28						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 15.8 -00.1	S	20 07.1 -00.5	194 07.8 -00.9	S	22 49.5 -00.3	98 53.1 -24.7	N	03 57.3 +12.4	00			
01	192 15.7 -00.2	S	20 06.6 -00.6	209 06.9 -00.9	S	22 49.2 -00.2	113 28.4 -24.7	N	04 09.7 +12.3	01			
02	207 15.5 -00.2	S	20 06.0 -00.5	224 06.0 -01.0	S	22 49.0 -00.2	128 03.7 -24.7	N	04 22.0 +12.4	02			
03	222 15.3 -00.2	S	20 05.5 -00.6	239 05.0 -00.9	S	22 48.8 -00.3	142 39.0 -24.7	N	04 34.4 +12.3	03			
04	237 15.1 -00.2	S	20 04.9 -00.5	254 04.1 -00.9	S	22 48.5 -00.2	157 14.3 -24.7	N	04 46.7 +12.4	04			
05	252 14.9 -00.2	S	20 04.4 -00.5	269 03.2 -01.0	S	22 48.3 -00.2	171 49.6 -24.7	N	04 59.1 +12.3	05			
06	267 14.7 -00.1	S	20 03.9 -00.6	284 02.2 -00.9	S	22 48.1 -00.3	186 24.9 -24.8	N	05 11.4 +12.2	06			
07	282 14.6 -00.2	S	20 03.3 -00.5	299 01.3 -00.9	S	22 47.8 -00.2	201 00.1 -24.7	N	05 23.6 +12.3	07			
08	297 14.4 -00.2	S	20 02.8 -00.6	314 00.4 -00.9	S	22 47.6 -00.2	215 35.4 -24.7	N	05 35.9 +12.2	08			
09	312 14.2 -00.2	S	20 02.2 -00.5	328 59.5 -01.0	S	22 47.4 -00.3	230 10.7 -24.8	N	05 48.1 +12.2	09			
10	327 14.0 -00.2	S	20 01.7 -00.6	343 58.5 -00.9	S	22 47.1 -00.2	244 45.9 -24.7	N	06 00.3 +12.1	10			
11	342 13.8 -00.1	S	20 01.1 -00.5	358 57.6 -00.9	S	22 46.9 -00.3	259 21.2 -24.8	N	06 12.4 +12.2	11			
12	357 13.7 -00.2	S	20 00.6 -00.6	13 56.7 -01.0	S	22 46.6 -00.2	273 56.4 -24.8	N	06 24.6 +12.1	12			
13	12 13.5 -00.2	S	20 00.0 -00.5	28 55.7 -00.9	S	22 46.4 -00.3	288 31.6 -24.8	N	06 36.7 +12.1	13			
14	27 13.3 -00.2	S	19 59.5 -00.6	43 54.8 -00.9	S	22 46.1 -00.2	303 06.8 -24.8	N	06 48.8 +12.0	14			
15	42 13.1 -00.2	S	19 58.9 -00.5	58 53.9 -00.9	S	22 45.9 -00.2	317 42.0 -24.9	N	07 00.8 +12.1	15			
16	57 12.9 -00.1	S	19 58.4 -00.6	73 53.0 -01.0	S	22 45.7 -00.3	332 17.1 -24.8	N	07 12.9 +12.0	16			
17	72 12.8 -00.2	S	19 57.8 -00.5	88 52.0 -00.9	S	22 45.4 -00.2	346 52.3 -24.9	N	07 24.9 +11.9	17			
18	87 12.6 -00.2	S	19 57.3 -00.6	103 51.1 -00.9	S	22 45.2 -00.3	1 27.4 -24.9	N	07 36.8 +12.0	18			
19	102 12.4 -00.2	S	19 56.7 -00.5	118 50.2 -00.9	S	22 44.9 -00.2	16 02.5 -24.9	N	07 48.8 +11.9	19			
20	117 12.2 -00.2	S	19 56.2 -00.6	133 49.3 -01.0	S	22 44.7 -00.3	30 37.6 -24.9	N	08 00.7 +11.8	20			
21	132 12.0 -00.1	S	19 55.6 -00.6	148 48.3 -00.9	S	22 44.4 -00.3	45 12.7 -25.0	N	08 12.5 +11.9	21			
22	147 11.9 -00.2	S	19 55.0 -00.5	163 47.4 -00.9	S	22 44.1 -00.2	59 47.7 -24.9	N	08 24.4 +11.8	22			
23	162 11.7 -00.2	S	19 54.5 -00.6	178 46.5 -00.9	S	22 43.9 -00.3	74 22.8 -25.0	N	08 36.2 +11.7	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 14'8 14'8 14'8 14'8 14'8 14'8						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 54'4 54'4 54'3 54'3 54'3 54'2						
	SHA 058° 057° 057° 057° 057° 057°			SHA 074° 074° 074° 074° 074° 073°			SHA 338° 337° 335° 333° 331° 329°						
	Greenwich Culmination Time: 12:11			Greenwich Culmination Time: 11:04			Greenwich Culmination Time: 17:54						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	86 00.3 +01.3	N	14 43.2 +00.5	169 50.5 +01.9	S	18 57.7 -00.1	173 19.5 +02.1	S	19 41.1 +00.0	00			
01	101 01.6 +01.2	N	14 43.7 +00.4	184 52.4 +01.9	S	18 57.6 -00.2	188 21.6 +02.2	S	19 41.1 -00.1	01			
02	116 02.8 +01.3	N	14 44.1 +00.5	199 54.3 +01.8	S	18 57.4 -00.1	203 23.8 +02.2	S	19 41.0 -00.1	02			
03	131 04.1 +01.2	N	14 44.6 +00.4	214 56.1 +01.9	S	18 57.3 -00.2	218 26.0 +02.1	S	19 40.9 +00.0	03			
04	146 05.3 +01.2	N	14 45.0 +00.5	229 58.0 +01.8	S	18 57.1 -00.1	233 28.1 +02.2	S	19 40.9 -00.1	04			
05	161 06.5 +01.3	N	14 45.5 +00.4	244 59.8 +01.9	S	18 57.0 -00.2	248 30.3 +02.1	S	19 40.8 -00.1	05			
06	176 07.8 +01.2	N	14 45.9 +00.5	260 01.7 +01.9	S	18 56.8 -00.1	263 32.4 +02.2	S	19 40.7 +00.0	06			
07	191 09.0 +01.3	N	14 46.4 +00.4	275 03.6 +01.8	S	18 56.7 -00.1	278 34.6 +02.1	S	19 40.7 -00.1	07			
08	206 10.3 +01.2	N	14 46.8 +00.4	290 05.4 +01.9	S	18 56.6 -00.2	293 36.7 +02.2	S	19 40.6 -00.1	08			
09	221 11.5 +01.3	N	14 47.2 +00.5	305 07.3 +01.8	S	18 56.4 -00.1	308 38.9 +02.2	S	19 40.5 +00.0	09			
10	236 12.8 +01.2	N	14 47.7 +00.4	320 09.1 +01.9	S	18 56.3 -00.2	323 41.1 +02.1	S	19 40.5 -00.1	10			
11	251 14.0 +01.2	N	14 48.1 +00.5	335 11.0 +01.8	S	18 56.1 -00.1	338 43.2 +02.2	S	19 40.4 -00.1	11			
12	266 15.2 +01.3	N	14 48.6 +00.4	350 12.8 +01.9	S	18 56.0 -00.2	353 45.4 +02.1	S	19 40.3 +00.0	12			
13	281 16.5 +01.2	N	14 49.0 +00.5	5 14.7 +01.9	S	18 55.8 -00.1	8 47.5 +02.2	S	19 40.3 -00.1	13			
14	296 17.7 +01.2	N	14 49.5 +00.4	20 16.6 +01.8	S	18 55.7 -00.2	23 49.7 +02.1	S	19 40.2 -00.1	14			
15	311 18.9 +01.3	N	14 49.9 +00.5	35 18.4 +01.9	S	18 55.5 -00.1	38 51.8 +02.2	S	19 40.1 +00.0	15			
16	326 20.2 +01.2	N	14 50.4 +00.4	50 20.3 +01.8	S	18 55.4 -00.2	53 54.0 +02.1	S	19 40.1 -00.1	16			
17	341 21.4 +01.3	N	14 50.8 +00.5	65 22.1 +01.9	S	18 55.2 -00.1	68 56.1 +02.2	S	19 40.0 -00.1	17			
18	356 22.7 +01.2	N	14 51.3 +00.4	80 24.0 +01.9	S	18 55.1 -00.2	83 58.3 +02.2	S	19 39.9 +00.0	18			
19	11 23.9 +01.2	N	14 51.7 +00.4	95 25.9 +01.8	S	18 54.9 -00.1	99 00.5 +02.1	S	19 39.9 -00.1	19			
20	26 25.1 +01.3	N	14 52.1 +00.5	110 27.7 +01.9	S	18 54.8 -00.2	114 02.6 +02.2	S	19 39.8 -00.1	20			
21	41 26.4 +01.2	N	14 52.6 +00.4	125 29.6 +01.8	S	18 54.6 -00.1	129 04.8 +02.1	S	19 39.7 +00.0	21			
22	56 27.6 +01.2	N	14 53.0 +00.5	140 31.4 +01.9	S	18 54.5 -00.2	144 06.9 +02.2	S	19 39.7 -00.1	22			
23	71 28.8 +01.3	N	14 53.5 +00.4	155 33.3 +01.8	S	18 54.3 -00.1	159 09.1 +02.1	S	19 39.6 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 326° 326° 326° 326° 326° 326°			SHA 050° 050° 050° 050° 050° 050°			SHA 054° 054° 054° 054° 054° 054°						
	Greenwich Culmination Time: 18:14			Greenwich Culmination Time: 12:39			Greenwich Culmination Time: 12:24						

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	177 11.5 -00.2	S	19 53.9 -00.5	193 45.6 -01.0	S	22 43.6 -00.2	88 57.8 -25.1	N	08 47.9 +11.8	00										
01	192 11.3 -00.1	S	19 53.4 -00.6	208 44.6 -00.9	S	22 43.4 -00.3	103 32.7 -25.0	N	08 59.7 +11.7	01										
02	207 11.2 -00.2	S	19 52.8 -00.5	223 43.7 -00.9	S	22 43.1 -00.2	118 07.7 -25.1	N	09 11.4 +11.6	02										
03	222 11.0 -00.2	S	19 52.3 -00.6	238 42.8 -00.9	S	22 42.9 -00.3	132 42.6 -25.1	N	09 23.0 +11.6	03										
04	237 10.8 -00.2	S	19 51.7 -00.6	253 41.9 -00.9	S	22 42.6 -00.3	147 17.5 -25.1	N	09 34.6 +11.6	04										
05	252 10.6 -00.1	S	19 51.1 -00.5	268 41.0 -01.0	S	22 42.3 -00.2	161 52.4 -25.2	N	09 46.2 +11.6	05										
06	267 10.5 -00.2	S	19 50.6 -00.6	283 40.0 -00.9	S	22 42.1 -00.3	176 27.2 -25.2	N	09 57.8 +11.5	06										
07	282 10.3 -00.2	S	19 50.0 -00.5	298 39.1 -00.9	S	22 41.8 -00.3	191 02.0 -25.2	N	10 09.3 +11.5	07										
08	297 10.1 -00.2	S	19 49.5 -00.6	313 38.2 -00.9	S	22 41.5 -00.2	205 36.8 -25.3	N	10 20.8 +11.4	08										
09	312 09.9 -00.1	S	19 48.9 -00.6	328 37.3 -01.0	S	22 41.3 -00.3	220 11.5 -25.3	N	10 32.2 +11.4	09										
10	327 09.8 -00.2	S	19 48.3 -00.5	343 36.3 -00.9	S	22 41.0 -00.3	234 46.2 -25.3	N	10 43.6 +11.3	10										
11	342 09.6 -00.2	S	19 47.8 -00.6	358 35.4 -00.9	S	22 40.7 -00.2	249 20.9 -25.4	N	10 54.9 +11.3	11										
12	357 09.4 -00.1	S	19 47.2 -00.6	13 34.5 -00.9	S	22 40.5 -00.3	263 55.5 -25.4	N	11 06.2 +11.3	12										
13	12 09.3 -00.2	S	19 46.6 -00.5	28 33.6 -00.9	S	22 40.2 -00.3	278 30.1 -25.4	N	11 17.5 +11.2	13										
14	27 09.1 -00.2	S	19 46.1 -00.6	43 32.7 -01.0	S	22 39.9 -00.3	293 04.7 -25.5	N	11 28.7 +11.2	14										
15	42 08.9 -00.2	S	19 45.5 -00.6	58 31.7 -00.9	S	22 39.6 -00.2	307 39.2 -25.5	N	11 39.9 +11.1	15										
16	57 08.7 -00.1	S	19 44.9 -00.5	73 30.8 -00.9	S	22 39.4 -00.3	322 13.7 -25.5	N	11 51.0 +11.1	16										
17	72 08.6 -00.2	S	19 44.4 -00.6	88 29.9 -00.9	S	22 39.1 -00.3	336 48.2 -25.6	N	12 02.1 +11.1	17										
18	87 08.4 -00.2	S	19 43.8 -00.6	103 29.0 -00.9	S	22 38.8 -00.3	351 22.6 -25.7	N	12 13.2 +11.0	18										
19	102 08.2 -00.1	S	19 43.2 -00.5	118 28.1 -01.0	S	22 38.5 -00.3	5 56.9 -25.6	N	12 24.2 +10.9	19										
20	117 08.1 -00.2	S	19 42.7 -00.6	133 27.1 -00.9	S	22 38.2 -00.2	20 31.3 -25.8	N	12 35.1 +10.9	20										
21	132 07.9 -00.2	S	19 42.1 -00.6	148 26.2 -00.9	S	22 38.0 -00.3	35 05.5 -25.7	N	12 46.0 +10.9	21										
22	147 07.7 -00.1	S	19 41.5 -00.5	163 25.3 -00.9	S	22 37.7 -00.3	49 39.8 -25.8	N	12 56.9 +10.8	22										
23	162 07.6 -00.2	S	19 41.0 -00.6	178 24.4 -00.9	S	22 37.4 -00.3	64 14.0 -25.9	N	13 07.7 +10.7	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16'3	16'3	16'3	16'3	16'3	16'3	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD						
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP						
SHA	057°	056°	056°	056°	056°	056°	SHA	073°	073°	073°	072°	072°	072°	SHA						
Greenwich Culmination Time: 12:11							Greenwich Culmination Time: 11:05							Greenwich Culmination Time: 18:35						

UT	Mars				Jupiter				Saturn				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	86 30.1 +01.2	N	14 53.9 +00.5	170 35.1 +01.9	S	18 54.2 -00.2	174 11.2 +02.2	S	19 39.5 +00.0	00										
01	101 31.3 +01.2	N	14 54.4 +00.4	185 37.0 +01.9	S	18 54.0 -00.1	189 13.4 +02.2	S	19 39.5 -00.1	01										
02	116 32.5 +01.3	N	14 54.8 +00.5	200 38.9 +01.8	S	18 53.9 -00.2	204 15.6 +02.1	S	19 39.4 -00.1	02										
03	131 33.8 +01.2	N	14 55.3 +00.4	215 40.7 +01.9	S	18 53.7 -00.1	219 17.7 +02.2	S	19 39.3 +00.0	03										
04	146 35.0 +01.2	N	14 55.7 +00.5	230 42.6 +01.8	S	18 53.6 -00.2	234 19.9 +02.1	S	19 39.3 -00.1	04										
05	161 36.2 +01.3	N	14 56.2 +00.4	245 44.4 +01.9	S	18 53.4 -00.1	249 22.0 +02.2	S	19 39.2 -00.1	05										
06	176 37.5 +01.2	N	14 56.6 +00.4	260 46.3 +01.9	S	18 53.3 -00.2	264 24.2 +02.1	S	19 39.1 +00.0	06										
07	191 38.7 +01.2	N	14 57.0 +00.5	275 48.2 +01.8	S	18 53.1 -00.1	279 26.3 +02.2	S	19 39.1 -00.1	07										
08	206 39.9 +01.3	N	14 57.5 +00.4	290 50.0 +01.9	S	18 53.0 -00.1	294 28.5 +02.2	S	19 39.0 -00.1	08										
09	221 41.2 +01.2	N	14 57.9 +00.5	305 51.9 +01.8	S	18 52.9 -00.2	309 30.7 +02.1	S	19 38.9 +00.0	09										
10	236 42.4 +01.2	N	14 58.4 +00.4	320 53.7 +01.9	S	18 52.7 -00.1	324 32.8 +02.2	S	19 38.9 -00.1	10										
11	251 43.6 +01.3	N	14 58.8 +00.5	335 55.6 +01.8	S	18 52.6 -00.2	339 35.0 +02.1	S	19 38.8 -00.1	11										
12	266 44.9 +01.2	N	14 59.3 +00.4	350 57.4 +01.9	S	18 52.4 -00.1	354 37.1 +02.2	S	19 38.7 +00.0	12										
13	281 46.1 +01.2	N	14 59.7 +00.5	5 59.3 +01.9	S	18 52.3 -00.2	9 39.3 +02.1	S	19 38.7 -00.1	13										
14	296 47.3 +01.2	N	15 00.2 +00.4	21 01.2 +01.8	S	18 52.1 -00.1	24 41.4 +02.2	S	19 38.6 -00.1	14										
15	311 48.5 +01.3	N	15 00.6 +00.4	36 03.0 +01.9	S	18 52.0 -00.2	39 43.6 +02.1	S	19 38.5 -00.1	15										
16	326 49.8 +01.2	N	15 01.0 +00.5	51 04.9 +01.8	S	18 51.8 -00.1	54 45.7 +02.2	S	19 38.4 +00.0	16										
17	341 51.0 +01.2	N	15 01.5 +00.4	66 06.7 +01.9	S	18 51.7 -00.2	69 47.9 +02.2	S	19 38.4 -00.1	17										
18	356 52.2 +01.3	N	15 01.9 +00.5	81 08.6 +01.9	S	18 51.5 -00.1	84 50.1 +02.1	S	19 38.3 -00.1	18										
19	11 53.5 +01.2	N	15 02.4 +00.4	96 10.5 +01.8	S	18 51.4 -00.2	99 52.2 +02.2	S	19 38.2 +00.0	19										
20	26 54.7 +01.2	N	15 02.8 +00.5	111 12.3 +01.9	S	18 51.2 -00.1	114 54.4 +02.1	S	19 38.2 -00.1	20										
21	41 55.9 +01.2	N	15 03.3 +00.4	126 14.2 +01.8	S	18 51.1 -00.2	129 56.5 +02.2	S	19 38.1 -00.1	21										
22	56 57.1 +01.3	N	15 03.7 +00.5	141 16.0 +01.9	S	18 50.9 -00.1	144 58.7 +02.1	S	19 38.0 +00.0	22										
23	71 58.4 +01.2	N	15 04.2 +00.4	156 17.9 +01.9	S	18 50.8 -00.2	160 00.8 +02.2	S	19 38.0 -00.1	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	00'3	00'3	00'3	00'3	00'3	00'3	SD						
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP						
SHA	326°	326°	326°	326°	326°	325°	SHA	050°	050°	050°	050°	050°	050°	SHA						
Greenwich Culmination Time: 18:12							Greenwich Culmination Time: 12:36							Greenwich Culmination Time: 12:21						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 07.4 -00.2	S 19 40.4 -00.6	193 23.5 -01.0	S 22 37.1 -00.3	78 48.1 -25.9	N 13 18.4 +10.7	00						
01	192 07.2 -00.1	S 19 39.8 -00.6	208 22.5 -00.9	S 22 36.8 -00.3	93 22.2 -25.9	N 13 29.1 +10.7	01						
02	207 07.1 -00.2	S 19 39.2 -00.5	223 21.6 -00.9	S 22 36.5 -00.3	107 56.3 -26.0	N 13 39.8 +10.6	02						
03	222 06.9 -00.2	S 19 38.7 -00.6	238 20.7 -00.9	S 22 36.2 -00.3	122 30.3 -26.1	N 13 50.4 +10.5	03						
04	237 06.7 -00.1	S 19 38.1 -00.6	253 19.8 -00.9	S 22 35.9 -00.2	137 04.2 -26.1	N 14 00.9 +10.5	04						
05	252 06.6 -00.2	S 19 37.5 -00.6	268 18.9 -00.9	S 22 35.7 -00.3	151 38.1 -26.1	N 14 11.4 +10.5	05						
06	267 06.4 -00.2	S 19 36.9 -00.5	283 18.0 -01.0	S 22 35.4 -00.3	166 12.0 -26.2	N 14 21.9 +10.3	06						
07	282 06.2 -00.1	S 19 36.4 -00.6	298 17.0 -00.9	S 22 35.1 -00.3	180 45.8 -26.3	N 14 32.2 +10.4	07						
08	297 06.1 -00.2	S 19 35.8 -00.6	313 16.1 -00.9	S 22 34.8 -00.3	195 19.5 -26.3	N 14 42.6 +10.2	08						
09	312 05.9 -00.2	S 19 35.2 -00.6	328 15.2 -00.9	S 22 34.5 -00.3	209 53.2 -26.3	N 14 52.8 +10.3	09						
10	327 05.7 -00.1	S 19 34.6 -00.5	343 14.3 -00.9	S 22 34.2 -00.3	224 26.9 -26.4	N 15 03.1 +10.1	10						
11	342 05.6 -00.2	S 19 34.1 -00.6	358 13.4 -00.9	S 22 33.9 -00.3	239 00.5 -26.5	N 15 13.2 +10.1	11						
12	357 05.4 -00.2	S 19 33.5 -00.6	13 12.5 -01.0	S 22 33.6 -00.3	253 34.0 -26.5	N 15 23.3 +10.1	12						
13	12 05.2 -00.1	S 19 32.9 -00.6	28 11.5 -00.9	S 22 33.3 -00.3	268 07.5 -26.6	N 15 33.4 +09.9	13						
14	27 05.1 -00.2	S 19 32.3 -00.6	43 10.6 -00.9	S 22 33.0 -00.3	282 40.9 -26.6	N 15 43.3 +09.9	14						
15	42 04.9 -00.2	S 19 31.7 -00.6	58 09.7 -00.9	S 22 32.7 -00.3	297 14.3 -26.7	N 15 53.2 +09.9	15						
16	57 04.7 -00.1	S 19 31.1 -00.5	73 08.8 -00.9	S 22 32.4 -00.3	311 47.6 -26.7	N 16 03.1 +09.8	16						
17	72 04.6 -00.2	S 19 30.6 -00.6	88 07.9 -00.9	S 22 32.1 -00.4	326 20.9 -26.8	N 16 12.9 +09.7	17						
18	87 04.4 -00.1	S 19 30.0 -00.6	103 07.0 -00.9	S 22 31.7 -00.3	340 54.1 -26.9	N 16 22.6 +09.7	18						
19	102 04.3 -00.2	S 19 29.4 -00.6	118 06.1 -00.9	S 22 31.4 -00.3	355 27.2 -26.9	N 16 32.3 +09.6	19						
20	117 04.1 -00.2	S 19 28.8 -00.6	133 05.2 -01.0	S 22 31.1 -00.3	10 00.3 -27.0	N 16 41.9 +09.5	20						
21	132 03.9 -00.1	S 19 28.2 -00.6	148 04.2 -00.9	S 22 30.8 -00.3	24 33.3 -27.1	N 16 51.4 +09.5	21						
22	147 03.8 -00.2	S 19 27.6 -00.5	163 03.3 -00.9	S 22 30.5 -00.3	39 06.2 -27.1	N 17 00.9 +09.4	22						
23	162 03.6 -00.1	S 19 27.1 -00.6	178 02.4 -00.9	S 22 30.2 -00.3	53 39.1 -27.2	N 17 10.3 +09.3	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'3 16'3 16'3 16'3 16'3 16'3		SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 14'8 14'8 14'8 14'8 14'8 14'8								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 54'2 54'2 54'3 54'3 54'3 54'4								
	SHA 055° 055° 055° 055° 055° 055°		SHA 072° 071° 071° 071° 071° 071°		SHA 316° 314° 312° 311° 309° 307°								
	Greenwich Culmination Time: 12:11		Greenwich Culmination Time: 11:07		Greenwich Culmination Time: 19:18								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	86 59.6 +01.2	N 15 04.6 +00.4	171 19.8 +01.8	S 18 50.6 -00.1	175 03.0 +02.2	S 19 37.9 -00.1	00						
01	102 00.8 +01.2	N 15 05.0 +00.5	186 21.6 +01.9	S 18 50.5 -00.2	190 05.2 +02.1	S 19 37.8 +00.0	01						
02	117 02.0 +01.3	N 15 05.5 +00.4	201 23.5 +01.8	S 18 50.3 -00.1	205 07.3 +02.2	S 19 37.8 -00.1	02						
03	132 03.3 +01.2	N 15 05.9 +00.5	216 25.3 +01.9	S 18 50.2 -00.2	220 09.5 +02.1	S 19 37.7 -00.1	03						
04	147 04.5 +01.2	N 15 06.4 +00.4	231 27.2 +01.8	S 18 50.0 -00.1	235 11.6 +02.2	S 19 37.6 +00.0	04						
05	162 05.7 +01.2	N 15 06.8 +00.5	246 29.0 +01.9	S 18 49.9 -00.2	250 13.8 +02.1	S 19 37.6 -00.1	05						
06	177 06.9 +01.3	N 15 07.3 +00.4	261 30.9 +01.9	S 18 49.7 -00.1	265 15.9 +02.2	S 19 37.5 -00.1	06						
07	192 08.2 +01.2	N 15 07.7 +00.5	276 32.8 +01.8	S 18 49.6 -00.2	280 18.1 +02.1	S 19 37.4 +00.0	07						
08	207 09.4 +01.2	N 15 08.2 +00.4	291 34.6 +01.9	S 18 49.4 -00.1	295 20.2 +02.2	S 19 37.4 -00.1	08						
09	222 10.6 +01.2	N 15 08.6 +00.4	306 36.5 +01.8	S 18 49.3 -00.2	310 22.4 +02.2	S 19 37.3 -00.1	09						
10	237 11.8 +01.3	N 15 09.0 +00.5	321 38.3 +01.9	S 18 49.1 -00.1	325 24.6 +02.1	S 19 37.2 +00.0	10						
11	252 13.1 +01.2	N 15 09.5 +00.4	336 40.2 +01.9	S 18 49.0 -00.2	340 26.7 +02.2	S 19 37.2 -00.1	11						
12	267 14.3 +01.2	N 15 09.9 +00.5	351 42.1 +01.8	S 18 48.8 -00.1	355 28.9 +02.1	S 19 37.1 -00.1	12						
13	282 15.5 +01.2	N 15 10.4 +00.4	6 43.9 +01.9	S 18 48.7 -00.2	10 31.0 +02.2	S 19 37.0 +00.0	13						
14	297 16.7 +01.2	N 15 10.8 +00.5	21 45.8 +01.8	S 18 48.5 -00.1	25 33.2 +02.1	S 19 37.0 -00.1	14						
15	312 17.9 +01.3	N 15 11.3 +00.4	36 47.6 +01.9	S 18 48.4 -00.2	40 35.3 +02.2	S 19 36.9 -00.1	15						
16	327 19.2 +01.2	N 15 11.7 +00.5	51 49.5 +01.8	S 18 48.2 -00.1	55 37.5 +02.2	S 19 36.8 +00.0	16						
17	342 20.4 +01.2	N 15 12.2 +00.4	66 51.3 +01.9	S 18 48.1 -00.2	70 39.7 +02.1	S 19 36.8 -00.1	17						
18	357 21.6 +01.2	N 15 12.6 +00.4	81 53.2 +01.9	S 18 47.9 -00.1	85 41.8 +02.2	S 19 36.7 -00.1	18						
19	12 22.8 +01.2	N 15 13.0 +00.5	96 55.1 +01.8	S 18 47.8 -00.2	100 44.0 +02.1	S 19 36.6 +00.0	19						
20	27 24.0 +01.2	N 15 13.5 +00.4	111 56.9 +01.9	S 18 47.6 -00.1	115 46.1 +02.2	S 19 36.6 -00.1	20						
21	42 25.2 +01.3	N 15 13.9 +00.5	126 58.8 +01.8	S 18 47.5 -00.2	130 48.3 +02.1	S 19 36.5 -00.1	21						
22	57 26.5 +01.2	N 15 14.4 +00.4	142 00.6 +01.9	S 18 47.3 -00.1	145 50.4 +02.2	S 19 36.4 +00.0	22						
23	72 27.7 +01.2	N 15 14.8 +00.5	157 02.5 +01.9	S 18 47.2 -00.2	160 52.6 +02.1	S 19 36.4 -00.1	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 00'3 00'3 00'3 00'3 00'3 00'3		SD 00'1 00'1 00'1 00'1 00'1 00'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0								
	SHA 325° 325° 325° 325° 325° 325°		SHA 050° 050° 050° 050° 050° 050°		SHA 053° 053° 053° 053° 053° 053°								
	Greenwich Culmination Time: 18:10		Greenwich Culmination Time: 12:33		Greenwich Culmination Time: 12:18								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 03.5 -00.2	S	19 26.5 -00.6	193 01.5 -00.9	S	22 29.9 -00.3	68 11.9 -27.2	N	17 19.6 +09.3	00			
01	192 03.3 -00.2	S	19 25.9 -00.6	208 00.6 -00.9	S	22 29.6 -00.4	82 44.7 -27.3	N	17 28.9 +09.2	01			
02	207 03.1 -00.1	S	19 25.3 -00.6	222 59.7 -00.9	S	22 29.2 -00.3	97 17.4 -27.4	N	17 38.1 +09.1	02			
03	222 03.0 -00.2	S	19 24.7 -00.6	237 58.8 -00.9	S	22 28.9 -00.3	111 50.0 -27.4	N	17 47.2 +09.1	03			
04	237 02.8 -00.1	S	19 24.1 -00.6	252 57.9 -01.0	S	22 28.6 -00.3	126 22.6 -27.5	N	17 56.3 +08.9	04			
05	252 02.7 -00.2	S	19 23.5 -00.6	267 56.9 -00.9	S	22 28.3 -00.3	140 55.1 -27.5	N	18 05.2 +09.0	05			
06	267 02.5 -00.2	S	19 22.9 -00.6	282 56.0 -00.9	S	22 28.0 -00.4	155 27.6 -27.7	N	18 14.2 +08.8	06			
07	282 02.3 -00.1	S	19 22.3 -00.5	297 55.1 -00.9	S	22 27.6 -00.3	169 59.9 -27.7	N	18 23.0 +08.7	07			
08	297 02.2 -00.2	S	19 21.8 -00.6	312 54.2 -00.9	S	22 27.3 -00.3	184 32.2 -27.7	N	18 31.7 +08.7	08			
09	312 02.0 -00.1	S	19 21.2 -00.6	327 53.3 -00.9	S	22 27.0 -00.3	199 04.5 -27.9	N	18 40.4 +08.6	09			
10	327 01.9 -00.2	S	19 20.6 -00.6	342 52.4 -00.9	S	22 26.7 -00.4	213 36.6 -27.8	N	18 49.0 +08.6	10			
11	342 01.7 -00.1	S	19 20.0 -00.6	357 51.5 -00.9	S	22 26.3 -00.3	228 08.8 -28.0	N	18 57.6 +08.4	11			
12	357 01.6 -00.2	S	19 19.4 -00.6	12 50.6 -00.9	S	22 26.0 -00.3	242 40.8 -28.1	N	19 06.0 +08.4	12			
13	12 01.4 -00.1	S	19 18.8 -00.6	27 49.7 -00.9	S	22 25.7 -00.4	257 12.7 -28.1	N	19 14.4 +08.3	13			
14	27 01.3 -00.2	S	19 18.2 -00.6	42 48.8 -01.0	S	22 25.3 -00.3	271 44.6 -28.1	N	19 22.7 +08.2	14			
15	42 01.1 -00.2	S	19 17.6 -00.6	57 47.8 -00.9	S	22 25.0 -00.3	286 16.5 -28.3	N	19 30.9 +08.1	15			
16	57 00.9 -00.1	S	19 17.0 -00.6	72 46.9 -00.9	S	22 24.7 -00.4	300 48.2 -28.3	N	19 39.0 +08.1	16			
17	72 00.8 -00.2	S	19 16.4 -00.6	87 46.0 -00.9	S	22 24.3 -00.3	315 19.9 -28.4	N	19 47.1 +08.0	17			
18	87 00.6 -00.1	S	19 15.8 -00.6	102 45.1 -00.9	S	22 24.0 -00.3	329 51.5 -28.4	N	19 55.1 +07.8	18			
19	102 00.5 -00.2	S	19 15.2 -00.6	117 44.2 -00.9	S	22 23.7 -00.4	344 23.1 -28.6	N	20 02.9 +07.8	19			
20	117 00.3 -00.1	S	19 14.6 -00.6	132 43.3 -00.9	S	22 23.3 -00.3	358 54.5 -28.6	N	20 10.7 +07.8	20			
21	132 00.2 -00.2	S	19 14.0 -00.6	147 42.4 -00.9	S	22 23.0 -00.4	13 25.9 -28.6	N	20 18.5 +07.6	21			
22	147 00.0 -00.1	S	19 13.4 -00.6	162 41.5 -00.9	S	22 22.6 -00.3	27 57.3 -28.8	N	20 26.1 +07.5	22			
23	161 59.9 -00.2	S	19 12.8 -00.6	177 40.6 -00.9	S	22 22.3 -00.3	42 28.5 -28.8	N	20 33.6 +07.5	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'3 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 14'8 14'8 14'8 14'9 14'9 14'9						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 54'4 54'4 54'5 54'6 54'6 54'7						
	SHA 054° 054° 054° 054° 054° 054°			SHA 070° 070° 070° 070° 069° 069°			SHA 305° 303° 301° 299° 297° 295°						
	Greenwich Culmination Time: 12:11			Greenwich Culmination Time: 11:08			Greenwich Culmination Time: 20:04						
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	87 28.9 +01.2	N	15 15.3 +00.4	172 04.4 +01.8	S	18 47.0 -00.1	175 54.7 +02.2	S	19 36.3 -00.1	00			
01	102 30.1 +01.2	N	15 15.7 +00.4	187 06.2 +01.9	S	18 46.9 -00.2	190 56.9 +02.2	S	19 36.2 -00.1	01			
02	117 31.3 +01.2	N	15 16.1 +00.5	202 08.1 +01.8	S	18 46.7 -00.1	205 59.1 +02.1	S	19 36.1 +00.0	02			
03	132 32.5 +01.3	N	15 16.6 +00.4	217 09.9 +01.9	S	18 46.6 -00.2	221 01.2 +02.2	S	19 36.1 -00.1	03			
04	147 33.8 +01.2	N	15 17.0 +00.5	232 11.8 +01.8	S	18 46.4 -00.1	236 03.4 +02.1	S	19 36.0 -00.1	04			
05	162 35.0 +01.2	N	15 17.5 +00.4	247 13.6 +01.9	S	18 46.3 -00.2	251 05.5 +02.2	S	19 35.9 +00.0	05			
06	177 36.2 +01.2	N	15 17.9 +00.5	262 15.5 +01.9	S	18 46.1 -00.1	266 07.7 +02.1	S	19 35.9 -00.1	06			
07	192 37.4 +01.2	N	15 18.4 +00.4	277 17.4 +01.8	S	18 46.0 -00.2	281 09.8 +02.2	S	19 35.8 -00.1	07			
08	207 38.6 +01.2	N	15 18.8 +00.4	292 19.2 +01.9	S	18 45.8 -00.1	296 12.0 +02.1	S	19 35.7 +00.0	08			
09	222 39.8 +01.2	N	15 19.2 +00.5	307 21.1 +01.8	S	18 45.7 -00.2	311 14.1 +02.2	S	19 35.7 -00.1	09			
10	237 41.0 +01.3	N	15 19.7 +00.4	322 22.9 +01.9	S	18 45.5 -00.1	326 16.3 +02.2	S	19 35.6 -00.1	10			
11	252 42.3 +01.2	N	15 20.1 +00.5	337 24.8 +01.9	S	18 45.4 -00.2	341 18.5 +02.1	S	19 35.5 +00.0	11			
12	267 43.5 +01.2	N	15 20.6 +00.4	352 26.7 +01.8	S	18 45.2 -00.1	356 20.6 +02.2	S	19 35.5 -00.1	12			
13	282 44.7 +01.2	N	15 21.0 +00.5	7 28.5 +01.9	S	18 45.1 -00.2	11 22.8 +02.1	S	19 35.4 -00.1	13			
14	297 45.9 +01.2	N	15 21.5 +00.4	22 30.4 +01.8	S	18 44.9 -00.1	26 24.9 +02.2	S	19 35.3 +00.0	14			
15	312 47.1 +01.2	N	15 21.9 +00.4	37 32.2 +01.9	S	18 44.8 -00.2	41 27.1 +02.1	S	19 35.3 -00.1	15			
16	327 48.3 +01.2	N	15 22.3 +00.5	52 34.1 +01.8	S	18 44.6 -00.1	56 29.2 +02.2	S	19 35.2 -00.1	16			
17	342 49.5 +01.2	N	15 22.8 +00.4	67 35.9 +01.9	S	18 44.5 -00.2	71 31.4 +02.2	S	19 35.1 +00.0	17			
18	357 50.7 +01.2	N	15 23.2 +00.5	82 37.8 +01.9	S	18 44.3 -00.1	86 33.6 +02.1	S	19 35.1 -00.1	18			
19	12 51.9 +01.3	N	15 23.7 +00.4	97 39.7 +01.8	S	18 44.2 -00.2	101 35.7 +02.2	S	19 35.0 -00.1	19			
20	27 53.2 +01.2	N	15 24.1 +00.5	112 41.5 +01.9	S	18 44.0 -00.1	116 37.9 +02.1	S	19 34.9 +00.0	20			
21	42 54.4 +01.2	N	15 24.6 +00.4	127 43.4 +01.8	S	18 43.9 -00.2	131 40.0 +02.2	S	19 34.9 -00.1	21			
22	57 55.6 +01.2	N	15 25.0 +00.4	142 45.2 +01.9	S	18 43.7 -00.1	146 42.2 +02.1	S	19 34.8 -00.1	22			
23	72 56.8 +01.2	N	15 25.4 +00.5	157 47.1 +01.9	S	18 43.6 -00.2	161 44.3 +02.2	S	19 34.7 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 325° 325° 325° 325° 325° 324°			SHA 050° 049° 049° 049° 049° 049°			SHA 053° 053° 053° 053° 053° 053°						
	Greenwich Culmination Time: 18:08			Greenwich Culmination Time: 12:30			Greenwich Culmination Time: 12:14						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 59.7 -00.1	S	19 12.2 -00.6	192 39.7 -00.9	S	22 22.0 -00.4	56 59.7 -28.9	N	20 41.1 +07.3	00			
01	191 59.6 -00.2	S	19 11.6 -00.6	207 38.8 -00.9	S	22 21.6 -00.3	71 30.8 -28.9	N	20 48.4 +07.3	01			
02	206 59.4 -00.1	S	19 11.0 -00.6	222 37.9 -00.9	S	22 21.3 -00.4	86 01.9 -29.1	N	20 55.7 +07.2	02			
03	221 59.3 -00.2	S	19 10.4 -00.6	237 37.0 -00.9	S	22 20.9 -00.3	100 32.8 -29.1	N	21 02.9 +07.1	03			
04	236 59.1 -00.1	S	19 09.8 -00.6	252 36.1 -00.9	S	22 20.6 -00.4	115 03.7 -29.2	N	21 10.0 +07.0	04			
05	251 59.0 -00.2	S	19 09.2 -00.6	267 35.2 -00.9	S	22 20.2 -00.3	129 34.5 -29.2	N	21 17.0 +06.9	05			
06	266 58.8 -00.1	S	19 08.6 -00.6	282 34.3 -00.9	S	22 19.9 -00.4	144 05.3 -29.3	N	21 23.9 +06.8	06			
07	281 58.7 -00.2	S	19 08.0 -00.6	297 33.4 -00.9	S	22 19.5 -00.3	158 36.0 -29.4	N	21 30.7 +06.7	07			
08	296 58.5 -00.1	S	19 07.4 -00.6	312 32.5 -01.0	S	22 19.2 -00.4	173 06.6 -29.5	N	21 37.4 +06.6	08			
09	311 58.4 -00.2	S	19 06.8 -00.7	327 31.5 -00.9	S	22 18.8 -00.3	187 37.1 -29.5	N	21 44.0 +06.5	09			
10	326 58.2 -00.1	S	19 06.1 -00.6	342 30.6 -00.9	S	22 18.5 -00.4	202 07.6 -29.7	N	21 50.5 +06.4	10			
11	341 58.1 -00.2	S	19 05.5 -00.6	357 29.7 -00.9	S	22 18.1 -00.4	216 37.9 -29.7	N	21 56.9 +06.3	11			
12	356 57.9 -00.1	S	19 04.9 -00.6	12 28.8 -00.9	S	22 17.7 -00.3	231 08.2 -29.7	N	22 03.2 +06.2	12			
13	11 57.8 -00.2	S	19 04.3 -00.6	27 27.9 -00.9	S	22 17.4 -00.4	245 38.5 -29.9	N	22 09.4 +06.2	13			
14	26 57.6 -00.1	S	19 03.7 -00.6	42 27.0 -00.9	S	22 17.0 -00.3	260 08.6 -29.9	N	22 15.6 +06.0	14			
15	41 57.5 -00.2	S	19 03.1 -00.6	57 26.1 -00.9	S	22 16.7 -00.4	274 38.7 -29.9	N	22 21.6 +05.9	15			
16	56 57.3 -00.1	S	19 02.5 -00.6	72 25.2 -00.9	S	22 16.3 -00.4	289 08.8 -30.1	N	22 27.5 +05.8	16			
17	71 57.2 -00.1	S	19 01.9 -00.6	87 24.3 -00.9	S	22 15.9 -00.3	303 38.7 -30.1	N	22 33.3 +05.7	17			
18	86 57.1 -00.2	S	19 01.3 -00.7	102 23.4 -00.9	S	22 15.6 -00.4	318 08.6 -30.2	N	22 39.0 +05.6	18			
19	101 56.9 -00.1	S	19 00.6 -00.6	117 22.5 -00.9	S	22 15.2 -00.4	332 38.4 -30.3	N	22 44.6 +05.5	19			
20	116 56.8 -00.2	S	19 00.0 -00.6	132 21.6 -00.9	S	22 14.8 -00.3	347 08.1 -30.3	N	22 50.1 +05.4	20			
21	131 56.6 -00.1	S	18 59.4 -00.6	147 20.7 -00.9	S	22 14.5 -00.4	1 37.8 -30.4	N	22 55.5 +05.2	21			
22	146 56.5 -00.2	S	18 58.8 -00.6	162 19.8 -00.9	S	22 14.1 -00.4	16 07.4 -30.5	N	23 00.7 +05.2	22			
23	161 56.3 -00.1	S	18 58.2 -00.6	177 18.9 -00.9	S	22 13.7 -00.3	30 36.9 -30.5	N	23 05.9 +05.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 14'9 14'9 15'0 15'0 15'0 15'0						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 54'7 54'8 54'9 55'0 55'0 55'1						
	SHA 053° 053° 053° 053° 053° 053°			SHA 069° 069° 069° 068° 068° 068°			SHA 292° 290° 288° 286° 284° 282°						
	Greenwich Culmination Time: 12:12			Greenwich Culmination Time: 11:10			Greenwich Culmination Time: 20:53						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	87 58.0 +01.2	N	15 25.9 +00.4	172 49.0 +01.8	S	18 43.4 -00.1	176 46.5 +02.2	S	19 34.7 -00.1	00			
01	102 59.2 +01.2	N	15 26.3 +00.5	187 50.8 +01.9	S	18 43.3 -00.2	191 48.7 +02.1	S	19 34.6 -00.1	01			
02	118 00.4 +01.2	N	15 26.8 +00.4	202 52.7 +01.8	S	18 43.1 -00.1	206 50.8 +02.2	S	19 34.5 +00.0	02			
03	133 01.6 +01.2	N	15 27.2 +00.5	217 54.5 +01.9	S	18 43.0 -00.2	221 53.0 +02.1	S	19 34.5 -00.1	03			
04	148 02.8 +01.2	N	15 27.7 +00.4	232 56.4 +01.9	S	18 42.8 -00.1	236 55.1 +02.2	S	19 34.4 -00.1	04			
05	163 04.0 +01.2	N	15 28.1 +00.4	247 58.3 +01.8	S	18 42.7 -00.2	251 57.3 +02.1	S	19 34.3 +00.0	05			
06	178 05.2 +01.2	N	15 28.5 +00.5	263 00.1 +01.9	S	18 42.5 -00.1	266 59.4 +02.2	S	19 34.3 -00.1	06			
07	193 06.4 +01.2	N	15 29.0 +00.4	278 02.0 +01.8	S	18 42.4 -00.2	282 01.6 +02.2	S	19 34.2 -00.1	07			
08	208 07.6 +01.2	N	15 29.4 +00.5	293 03.8 +01.9	S	18 42.2 -00.1	297 03.8 +02.1	S	19 34.1 +00.0	08			
09	223 08.8 +01.3	N	15 29.9 +00.4	308 05.7 +01.8	S	18 42.1 -00.2	312 05.9 +02.2	S	19 34.1 -00.1	09			
10	238 10.1 +01.2	N	15 30.3 +00.4	323 07.5 +01.9	S	18 41.9 -00.1	327 08.1 +02.1	S	19 34.0 -00.1	10			
11	253 11.3 +01.2	N	15 30.7 +00.5	338 09.4 +01.9	S	18 41.8 -00.2	342 10.2 +02.2	S	19 33.9 -00.1	11			
12	268 12.5 +01.2	N	15 31.2 +00.4	353 11.3 +01.8	S	18 41.6 -00.1	357 12.4 +02.1	S	19 33.8 +00.0	12			
13	283 13.7 +01.2	N	15 31.6 +00.5	8 13.1 +01.9	S	18 41.5 -00.2	12 14.5 +02.2	S	19 33.8 -00.1	13			
14	298 14.9 +01.2	N	15 32.1 +00.4	23 15.0 +01.8	S	18 41.3 -00.1	27 16.7 +02.2	S	19 33.7 -00.1	14			
15	313 16.1 +01.2	N	15 32.5 +00.5	38 16.8 +01.9	S	18 41.2 -00.2	42 18.9 +02.1	S	19 33.6 +00.0	15			
16	328 17.3 +01.2	N	15 33.0 +00.4	53 18.7 +01.9	S	18 41.0 -00.1	57 21.0 +02.2	S	19 33.6 -00.1	16			
17	343 18.5 +01.2	N	15 33.4 +00.4	68 20.6 +01.8	S	18 40.9 -00.2	72 23.2 +02.1	S	19 33.5 -00.1	17			
18	358 19.7 +01.2	N	15 33.8 +00.5	83 22.4 +01.9	S	18 40.7 -00.1	87 25.3 +02.2	S	19 33.4 +00.0	18			
19	13 20.9 +01.2	N	15 34.3 +00.4	98 24.3 +01.8	S	18 40.6 -00.2	102 27.5 +02.1	S	19 33.4 -00.1	19			
20	28 22.1 +01.2	N	15 34.7 +00.5	113 26.1 +01.9	S	18 40.4 -00.1	117 29.6 +02.2	S	19 33.3 -00.1	20			
21	43 23.3 +01.2	N	15 35.2 +00.4	128 28.0 +01.8	S	18 40.3 -00.2	132 31.8 +02.2	S	19 33.2 +00.0	21			
22	58 24.5 +01.2	N	15 35.6 +00.4	143 29.8 +01.9	S	18 40.1 -00.1	147 34.0 +02.1	S	19 33.2 -00.1	22			
23	73 25.7 +01.2	N	15 36.0 +00.5	158 31.7 +01.9	S	18 40.0 -00.2	162 36.1 +02.2	S	19 33.1 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 324° 324° 324° 324° 324° 324°			SHA 049° 049° 049° 049° 049° 049°			SHA 053° 053° 053° 053° 053° 053°						
	Greenwich Culmination Time: 18:06			Greenwich Culmination Time: 12:27			Greenwich Culmination Time: 12:11						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 56.2 -00.1	S	18 57.6 -00.6	192 18.0 -00.9	S	22 13.4 -00.4	45 06.4 -30.7	N	23 11.0 +04.9	00			
01	191 56.1 -00.2	S	18 57.0 -00.7	207 17.1 -00.9	S	22 13.0 -00.4	59 35.7 -30.7	N	23 15.9 +04.8	01			
02	206 55.9 -00.1	S	18 56.3 -00.6	222 16.2 -00.9	S	22 12.6 -00.4	74 05.0 -30.7	N	23 20.7 +04.8	02			
03	221 55.8 -00.2	S	18 55.7 -00.6	237 15.3 -00.9	S	22 12.2 -00.3	88 34.3 -30.8	N	23 25.5 +04.6	03			
04	236 55.6 -00.1	S	18 55.1 -00.6	252 14.4 -00.8	S	22 11.9 -00.4	103 03.5 -30.9	N	23 30.1 +04.5	04			
05	251 55.5 -00.2	S	18 54.5 -00.6	267 13.6 -00.9	S	22 11.5 -00.4	117 32.6 -31.0	N	23 34.6 +04.3	05			
06	266 55.3 -00.1	S	18 53.9 -00.7	282 12.7 -00.9	S	22 11.1 -00.4	132 01.6 -31.0	N	23 38.9 +04.3	06			
07	281 55.2 -00.1	S	18 53.2 -00.6	297 11.8 -00.9	S	22 10.7 -00.4	146 30.6 -31.1	N	23 43.2 +04.1	07			
08	296 55.1 -00.2	S	18 52.6 -00.6	312 10.9 -00.9	S	22 10.3 -00.3	160 59.5 -31.2	N	23 47.3 +04.1	08			
09	311 54.9 -00.1	S	18 52.0 -00.6	327 10.0 -00.9	S	22 10.0 -00.4	175 28.3 -31.2	N	23 51.4 +03.9	09			
10	326 54.8 -00.2	S	18 51.4 -00.6	342 09.1 -00.9	S	22 09.6 -00.4	189 57.1 -31.3	N	23 55.3 +03.8	10			
11	341 54.6 -00.1	S	18 50.8 -00.7	357 08.2 -00.9	S	22 09.2 -00.4	204 25.8 -31.3	N	23 59.1 +03.6	11			
12	356 54.5 -00.1	S	18 50.1 -00.6	12 07.3 -00.9	S	22 08.8 -00.4	218 54.5 -31.5	N	24 02.7 +03.6	12			
13	11 54.4 -00.2	S	18 49.5 -00.6	27 06.4 -00.9	S	22 08.4 -00.4	233 23.0 -31.4	N	24 06.3 +03.4	13			
14	26 54.2 -00.1	S	18 48.9 -00.6	42 05.5 -00.9	S	22 08.0 -00.4	247 51.6 -31.6	N	24 09.7 +03.3	14			
15	41 54.1 -00.1	S	18 48.3 -00.7	57 04.6 -00.9	S	22 07.6 -00.3	262 20.0 -31.6	N	24 13.0 +03.2	15			
16	56 54.0 -00.2	S	18 47.6 -00.6	72 03.7 -00.9	S	22 07.3 -00.4	276 48.4 -31.6	N	24 16.2 +03.0	16			
17	71 53.8 -00.1	S	18 47.0 -00.6	87 02.8 -00.9	S	22 06.9 -00.4	291 16.8 -31.7	N	24 19.2 +03.0	17			
18	86 53.7 -00.2	S	18 46.4 -00.7	102 01.9 -00.9	S	22 06.5 -00.4	305 45.1 -31.8	N	24 22.2 +02.8	18			
19	101 53.5 -00.1	S	18 45.7 -00.6	117 01.0 -00.9	S	22 06.1 -00.4	320 13.3 -31.9	N	24 25.0 +02.7	19			
20	116 53.4 -00.1	S	18 45.1 -00.6	132 00.1 -00.9	S	22 05.7 -00.4	334 41.4 -31.8	N	24 27.7 +02.5	20			
21	131 53.3 -00.2	S	18 44.5 -00.6	146 59.2 -00.8	S	22 05.3 -00.4	349 09.6 -32.0	N	24 30.2 +02.4	21			
22	146 53.1 -00.1	S	18 43.9 -00.7	161 58.4 -00.9	S	22 04.9 -00.4	3 37.6 -32.0	N	24 32.6 +02.3	22			
23	161 53.0 -00.1	S	18 43.2 -00.6	176 57.5 -00.9	S	22 04.5 -00.4	18 05.6 -32.1	N	24 34.9 +02.2	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'0 15'1 15'1 15'1 15'1 15'2						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 55'2 55'3 55'4 55'5 55'6 55'7						
	SHA 052° 052° 052° 052° 052° 051°			SHA 068° 067° 067° 067° 067° 067°			SHA 279° 277° 275° 273° 270° 268°						
	Greenwich Culmination Time: 12:12			Greenwich Culmination Time: 11:11			Greenwich Culmination Time: 21:44						
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	88 26.9 +01.2	N	15 36.5 +00.4	173 33.6 +01.8	S	18 39.8 -00.1	177 38.3 +02.1	S	19 33.0 +00.0	00			
01	103 28.1 +01.2	N	15 36.9 +00.5	188 35.4 +01.9	S	18 39.7 -00.2	192 40.4 +02.2	S	19 33.0 -00.1	01			
02	118 29.3 +01.2	N	15 37.4 +00.4	203 37.3 +01.8	S	18 39.5 -00.2	207 42.6 +02.1	S	19 32.9 -00.1	02			
03	133 30.5 +01.2	N	15 37.8 +00.5	218 39.1 +01.9	S	18 39.3 -00.1	222 44.7 +02.2	S	19 32.8 -00.1	03			
04	148 31.7 +01.2	N	15 38.3 +00.4	233 41.0 +01.9	S	18 39.2 -00.2	237 46.9 +02.1	S	19 32.7 +00.0	04			
05	163 32.9 +01.2	N	15 38.7 +00.4	248 42.9 +01.8	S	18 39.0 -00.1	252 49.0 +02.2	S	19 32.7 -00.1	05			
06	178 34.1 +01.2	N	15 39.1 +00.5	263 44.7 +01.9	S	18 38.9 -00.2	267 51.2 +02.2	S	19 32.6 -00.1	06			
07	193 35.3 +01.2	N	15 39.6 +00.4	278 46.6 +01.8	S	18 38.7 -00.1	282 53.4 +02.1	S	19 32.5 +00.0	07			
08	208 36.5 +01.2	N	15 40.0 +00.5	293 48.4 +01.9	S	18 38.6 -00.2	297 55.5 +02.2	S	19 32.5 -00.1	08			
09	223 37.7 +01.2	N	15 40.5 +00.4	308 50.3 +01.9	S	18 38.4 -00.1	312 57.7 +02.1	S	19 32.4 -00.1	09			
10	238 38.9 +01.1	N	15 40.9 +00.4	323 52.2 +01.8	S	18 38.3 -00.2	327 59.8 +02.2	S	19 32.3 +00.0	10			
11	253 40.0 +01.2	N	15 41.3 +00.5	338 54.0 +01.9	S	18 38.1 -00.1	343 02.0 +02.1	S	19 32.3 -00.1	11			
12	268 41.2 +01.2	N	15 41.8 +00.4	353 55.9 +01.8	S	18 38.0 -00.2	358 04.1 +02.2	S	19 32.2 -00.1	12			
13	283 42.4 +01.2	N	15 42.2 +00.5	8 57.7 +01.9	S	18 37.8 -00.1	13 06.3 +02.2	S	19 32.1 +00.0	13			
14	298 43.6 +01.2	N	15 42.7 +00.4	23 59.6 +01.8	S	18 37.7 -00.2	28 08.5 +02.1	S	19 32.1 -00.1	14			
15	313 44.8 +01.2	N	15 43.1 +00.4	39 01.4 +01.9	S	18 37.5 -00.1	43 10.6 +02.2	S	19 32.0 -00.1	15			
16	328 46.0 +01.2	N	15 43.5 +00.5	54 03.3 +01.9	S	18 37.4 -00.2	58 12.8 +02.1	S	19 31.9 +00.0	16			
17	343 47.2 +01.2	N	15 44.0 +00.4	69 05.2 +01.8	S	18 37.2 -00.1	73 14.9 +02.2	S	19 31.9 -00.1	17			
18	358 48.4 +01.2	N	15 44.4 +00.5	84 07.0 +01.9	S	18 37.1 -00.2	88 17.1 +02.1	S	19 31.8 -00.1	18			
19	13 49.6 +01.2	N	15 44.9 +00.4	99 08.9 +01.8	S	18 36.9 -00.1	103 19.2 +02.2	S	19 31.7 +00.0	19			
20	28 50.8 +01.2	N	15 45.3 +00.4	114 10.7 +01.9	S	18 36.8 -00.2	118 21.4 +02.2	S	19 31.7 -00.1	20			
21	43 52.0 +01.2	N	15 45.7 +00.5	129 12.6 +01.9	S	18 36.6 -00.1	133 23.6 +02.1	S	19 31.6 -00.1	21			
22	58 53.2 +01.2	N	15 46.2 +00.4	144 14.5 +01.8	S	18 36.5 -00.2	148 25.7 +02.2	S	19 31.5 -00.1	22			
23	73 54.4 +01.2	N	15 46.6 +00.5	159 16.3 +01.9	S	18 36.3 -00.1	163 27.9 +02.1	S	19 31.4 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 324° 324° 324° 324° 324° 323°			SHA 049° 049° 049° 049° 049° 049°			SHA 053° 053° 053° 053° 053° 053°						
	Greenwich Culmination Time: 18:04			Greenwich Culmination Time: 12:24			Greenwich Culmination Time: 12:07						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 52.9 -00.2	S	18 42.6 -00.6	191 56.6 -00.9	S	22 04.1 -00.4	32 33.5 -32.1	N	24 37.1 +02.0				
01	191 52.7 -00.1	S	18 42.0 -00.7	206 55.7 -00.9	S	22 03.7 -00.4	47 01.4 -32.1	N	24 39.1 +01.9				
02	206 52.6 -00.1	S	18 41.3 -00.6	221 54.8 -00.9	S	22 03.3 -00.4	61 29.3 -32.2	N	24 41.0 +01.8				
03	221 52.5 -00.2	S	18 40.7 -00.6	236 53.9 -00.9	S	22 02.9 -00.4	75 57.1 -32.3	N	24 42.8 +01.7				
04	236 52.3 -00.1	S	18 40.1 -00.7	251 53.0 -00.9	S	22 02.5 -00.4	90 24.8 -32.3	N	24 44.5 +01.5				
05	251 52.2 -00.1	S	18 39.4 -00.6	266 52.1 -00.9	S	22 02.1 -00.4	104 52.5 -32.4	N	24 46.0 +01.3				
06	266 52.1 -00.2	S	18 38.8 -00.6	281 51.2 -00.9	S	22 01.7 -00.4	119 20.1 -32.4	N	24 47.3 +01.3				
07	281 51.9 -00.1	S	18 38.2 -00.7	296 50.3 -00.8	S	22 01.3 -00.4	133 47.7 -32.4	N	24 48.6 +01.1				
08	296 51.8 -00.1	S	18 37.5 -00.6	311 49.5 -00.9	S	22 00.9 -00.5	148 15.3 -32.5	N	24 49.7 +01.0				
09	311 51.7 -00.2	S	18 36.9 -00.6	326 48.6 -00.9	S	22 00.4 -00.4	162 42.8 -32.5	N	24 50.7 +00.8				
10	326 51.5 -00.1	S	18 36.3 -00.7	341 47.7 -00.9	S	22 00.0 -00.4	177 10.3 -32.6	N	24 51.5 +00.7				
11	341 51.4 -00.1	S	18 35.6 -00.6	356 46.8 -00.9	S	21 59.6 -00.4	191 37.7 -32.6	N	24 52.2 +00.6				
12	356 51.3 -00.2	S	18 35.0 -00.7	11 45.9 -00.9	S	21 59.2 -00.4	206 05.1 -32.7	N	24 52.8 +00.4				
13	11 51.1 -00.1	S	18 34.3 -00.6	26 45.0 -00.9	S	21 58.8 -00.4	220 32.4 -32.7	N	24 53.2 +00.3				
14	26 51.0 -00.1	S	18 33.7 -00.6	41 44.1 -00.9	S	21 58.4 -00.4	234 59.7 -32.7	N	24 53.5 +00.2				
15	41 50.9 -00.1	S	18 33.1 -00.7	56 43.2 -00.8	S	21 58.0 -00.5	249 27.0 -32.8	N	24 53.7 +00.0				
16	56 50.8 -00.2	S	18 32.4 -00.6	71 42.4 -00.9	S	21 57.5 -00.4	263 54.2 -32.8	N	24 53.7 -00.1				
17	71 50.6 -00.1	S	18 31.8 -00.7	86 41.5 -00.9	S	21 57.1 -00.4	278 21.4 -32.8	N	24 53.6 -00.3				
18	86 50.5 -00.1	S	18 31.1 -00.6	101 40.6 -00.9	S	21 56.7 -00.4	292 48.6 -32.9	N	24 53.3 -00.4				
19	101 50.4 -00.2	S	18 30.5 -00.6	116 39.7 -00.9	S	21 56.3 -00.4	307 15.7 -32.9	N	24 52.9 -00.5				
20	116 50.2 -00.1	S	18 29.9 -00.7	131 38.8 -00.9	S	21 55.9 -00.5	321 42.8 -32.9	N	24 52.4 -00.7				
21	131 50.1 -00.1	S	18 29.2 -00.6	146 37.9 -00.8	S	21 55.4 -00.4	336 09.9 -33.0	N	24 51.7 -00.8				
22	146 50.0 -00.1	S	18 28.6 -00.7	161 37.1 -00.9	S	21 55.0 -00.4	350 36.9 -33.0	N	24 50.9 -00.9				
23	161 49.9 -00.2	S	18 27.9 -00.6	176 36.2 -00.9	S	21 54.6 -00.4	5 03.9 -33.0	N	24 50.0 -01.1				
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'2 15'2 15'2 15'3 15'3 15'3						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 55'8 55'9 56'0 56'1 56'2 56'3						
	SHA 051° 051° 051° 051° 051° 050°			SHA 066° 066° 066° 066° 065° 065°			SHA 266° 264° 261° 259° 257° 254°						
	Greenwich Culmination Time: 12:12			Greenwich Culmination Time: 11:12			Greenwich Culmination Time: 22:38						

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	88 55.6 +01.1	N	15 47.1 +00.4	174 18.2 +01.8	S	18 36.2 -00.2	178 30.0 +02.2	S	19 31.4 -00.1				
01	103 56.7 +01.2	N	15 47.5 +00.4	189 20.0 +01.9	S	18 36.0 -00.1	193 32.2 +02.1	S	19 31.3 -00.1				
02	118 57.9 +01.2	N	15 47.9 +00.5	204 21.9 +01.9	S	18 35.9 -00.2	208 34.3 +02.2	S	19 31.2 +00.0				
03	133 59.1 +01.2	N	15 48.4 +00.4	219 23.8 +01.8	S	18 35.7 -00.1	223 36.5 +02.1	S	19 31.2 -00.1				
04	149 00.3 +01.2	N	15 48.8 +00.5	234 25.6 +01.9	S	18 35.6 -00.2	238 38.6 +02.2	S	19 31.1 -00.1				
05	164 01.5 +01.2	N	15 49.3 +00.4	249 27.5 +01.8	S	18 35.4 -00.2	253 40.8 +02.2	S	19 31.0 +00.0				
06	179 02.7 +01.2	N	15 49.7 +00.4	264 29.3 +01.9	S	18 35.2 -00.1	268 43.0 +02.1	S	19 31.0 -00.1				
07	194 03.9 +01.2	N	15 50.1 +00.5	279 31.2 +01.8	S	18 35.1 -00.2	283 45.1 +02.2	S	19 30.9 -00.1				
08	209 05.1 +01.2	N	15 50.6 +00.4	294 33.0 +01.9	S	18 34.9 -00.1	298 47.3 +02.1	S	19 30.8 +00.0				
09	224 06.3 +01.1	N	15 51.0 +00.4	309 34.9 +01.9	S	18 34.8 -00.2	313 49.4 +02.2	S	19 30.8 -00.1				
10	239 07.4 +01.2	N	15 51.4 +00.5	324 36.8 +01.8	S	18 34.6 -00.1	328 51.6 +02.1	S	19 30.7 -00.1				
11	254 08.6 +01.2	N	15 51.9 +00.4	339 38.6 +01.9	S	18 34.5 -00.2	343 53.7 +02.2	S	19 30.6 +00.0				
12	269 09.8 +01.2	N	15 52.3 +00.5	354 40.5 +01.8	S	18 34.3 -00.1	358 55.9 +02.2	S	19 30.6 -00.1				
13	284 11.0 +01.2	N	15 52.8 +00.4	9 42.3 +01.9	S	18 34.2 -00.2	13 58.1 +02.1	S	19 30.5 -00.1				
14	299 12.2 +01.2	N	15 53.2 +00.4	24 44.2 +01.9	S	18 34.0 -00.1	29 00.2 +02.2	S	19 30.4 +00.0				
15	314 13.4 +01.2	N	15 53.6 +00.5	39 46.1 +01.8	S	18 33.9 -00.2	44 02.4 +02.1	S	19 30.4 -00.1				
16	329 14.6 +01.1	N	15 54.1 +00.4	54 47.9 +01.9	S	18 33.7 -00.1	59 04.5 +02.2	S	19 30.3 -00.1				
17	344 15.7 +01.2	N	15 54.5 +00.5	69 49.8 +01.8	S	18 33.6 -00.2	74 06.7 +02.1	S	19 30.2 -00.1				
18	359 16.9 +01.2	N	15 55.0 +00.4	84 51.6 +01.9	S	18 33.4 -00.1	89 08.8 +02.2	S	19 30.1 +00.0				
19	14 18.1 +01.2	N	15 55.4 +00.4	99 53.5 +01.9	S	18 33.3 -00.2	104 11.0 +02.2	S	19 30.1 -00.1				
20	29 19.3 +01.2	N	15 55.8 +00.5	114 55.4 +01.8	S	18 33.1 -00.1	119 13.2 +02.1	S	19 30.0 -00.1				
21	44 20.5 +01.2	N	15 56.3 +00.4	129 57.2 +01.9	S	18 33.0 -00.2	134 15.3 +02.2	S	19 29.9 +00.0				
22	59 21.7 +01.2	N	15 56.7 +00.5	144 59.1 +01.8	S	18 32.8 -00.1	149 17.5 +02.1	S	19 29.9 -00.1				
23	74 22.9 +01.1	N	15 57.2 +00.4	160 00.9 +01.9	S	18 32.7 -00.2	164 19.6 +02.2	S	19 29.8 -00.1				
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 323° 323° 323° 323° 323° 323°			SHA 049° 049° 049° 049° 049° 049°			SHA 053° 053° 053° 053° 053° 053°						
	Greenwich Culmination Time: 18:02			Greenwich Culmination Time: 12:21			Greenwich Culmination Time: 12:04						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 49.7 -00.1	S	18 27.3 -00.7	191 35.3 -00.9	S	21 54.2 -00.5	19 30.9 -33.0	N	24 48.9 -01.3	00			
01	191 49.6 -00.1	S	18 26.6 -00.6	206 34.4 -00.9	S	21 53.7 -00.4	33 57.9 -33.0	N	24 47.6 -01.4	01			
02	206 49.5 -00.1	S	18 26.0 -00.6	221 33.5 -00.9	S	21 53.3 -00.4	48 24.9 -33.1	N	24 46.2 -01.5	02			
03	221 49.4 -00.2	S	18 25.4 -00.7	236 32.6 -00.8	S	21 52.9 -00.5	62 51.8 -33.1	N	24 44.7 -01.6	03			
04	236 49.2 -00.1	S	18 24.7 -00.6	251 31.8 -00.9	S	21 52.4 -00.4	77 18.7 -33.1	N	24 43.1 -01.8	04			
05	251 49.1 -00.1	S	18 24.1 -00.7	266 30.9 -00.9	S	21 52.0 -00.4	91 45.6 -33.2	N	24 41.3 -02.0	05			
06	266 49.0 -00.1	S	18 23.4 -00.6	281 30.0 -00.9	S	21 51.6 -00.5	106 12.4 -33.1	N	24 39.3 -02.1	06			
07	281 48.9 -00.2	S	18 22.8 -00.7	296 29.1 -00.9	S	21 51.1 -00.4	120 39.3 -33.2	N	24 37.2 -02.2	07			
08	296 48.7 -00.1	S	18 22.1 -00.6	311 28.2 -00.8	S	21 50.7 -00.4	135 06.1 -33.1	N	24 35.0 -02.4	08			
09	311 48.6 -00.1	S	18 21.5 -00.7	326 27.4 -00.9	S	21 50.3 -00.5	149 33.0 -33.2	N	24 32.6 -02.5	09			
10	326 48.5 -00.1	S	18 20.8 -00.6	341 26.5 -00.9	S	21 49.8 -00.4	163 59.8 -33.2	N	24 30.1 -02.6	10			
11	341 48.4 -00.1	S	18 20.2 -00.7	356 25.6 -00.9	S	21 49.4 -00.5	178 26.6 -33.2	N	24 27.5 -02.8	11			
12	356 48.3 -00.2	S	18 19.5 -00.6	11 24.7 -00.9	S	21 48.9 -00.4	192 53.4 -33.3	N	24 24.7 -03.0	12			
13	11 48.1 -00.1	S	18 18.9 -00.7	26 23.8 -00.8	S	21 48.5 -00.5	207 20.1 -33.2	N	24 21.7 -03.1	13			
14	26 48.0 -00.1	S	18 18.2 -00.7	41 23.0 -00.9	S	21 48.0 -00.4	221 46.9 -33.2	N	24 18.6 -03.2	14			
15	41 47.9 -00.1	S	18 17.5 -00.6	56 22.1 -00.9	S	21 47.6 -00.4	236 13.7 -33.2	N	24 15.4 -03.4	15			
16	56 47.8 -00.2	S	18 16.9 -00.7	71 21.2 -00.9	S	21 47.2 -00.5	250 40.5 -33.3	N	24 12.0 -03.5	16			
17	71 47.6 -00.1	S	18 16.2 -00.6	86 20.3 -00.8	S	21 46.7 -00.4	265 07.2 -33.2	N	24 08.5 -03.6	17			
18	86 47.5 -00.1	S	18 15.6 -00.7	101 19.5 -00.9	S	21 46.3 -00.5	279 34.0 -33.2	N	24 04.9 -03.8	18			
19	101 47.4 -00.1	S	18 14.9 -00.6	116 18.6 -00.9	S	21 45.8 -00.4	294 00.8 -33.3	N	24 01.1 -04.0	19			
20	116 47.3 -00.1	S	18 14.3 -00.7	131 17.7 -00.9	S	21 45.4 -00.5	308 27.5 -33.2	N	23 57.1 -04.1	20			
21	131 47.2 -00.1	S	18 13.6 -00.6	146 16.8 -00.8	S	21 44.9 -00.4	322 54.3 -33.2	N	23 53.0 -04.2	21			
22	146 47.1 -00.2	S	18 13.0 -00.7	161 16.0 -00.9	S	21 44.5 -00.5	337 21.1 -33.2	N	23 48.8 -04.3	22			
23	161 46.9 -00.1	S	18 12.3 -00.7	176 15.1 -00.9	S	21 44.0 -00.5	351 47.9 -33.2	N	23 44.5 -04.5	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'4 15'4 15'4 15'4 15'5 15'5						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 56'4 56'5 56'6 56'7 56'8 56'9						
	SHA 050° 050° 050° 050° 050° 049°			SHA 065° 065° 065° 064° 064° 064°			SHA 252° 249° 247° 245° 242° 240°						
	Greenwich Culmination Time: 12:12			Greenwich Culmination Time: 11:14			Greenwich Culmination Time: 23:34						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	89 24.0 +01.2	N	15 57.6 +00.4	175 02.8 +01.8	S	18 32.5 -00.2	179 21.8 +02.1	S	19 29.7 +00.0	00			
01	104 25.2 +01.2	N	15 58.0 +00.5	190 04.6 +01.9	S	18 32.3 -00.1	194 23.9 +02.2	S	19 29.7 -00.1	01			
02	119 26.4 +01.2	N	15 58.5 +00.4	205 06.5 +01.9	S	18 32.2 -00.2	209 26.1 +02.2	S	19 29.6 -00.1	02			
03	134 27.6 +01.2	N	15 58.9 +00.4	220 08.4 +01.8	S	18 32.0 -00.1	224 28.3 +02.1	S	19 29.5 +00.0	03			
04	149 28.8 +01.1	N	15 59.3 +00.5	235 10.2 +01.9	S	18 31.9 -00.2	239 30.4 +02.2	S	19 29.5 -00.1	04			
05	164 29.9 +01.2	N	15 59.8 +00.4	250 12.1 +01.8	S	18 31.7 -00.1	254 32.6 +02.1	S	19 29.4 -00.1	05			
06	179 31.1 +01.2	N	16 00.2 +00.5	265 13.9 +01.9	S	18 31.6 -00.2	269 34.7 +02.2	S	19 29.3 +00.0	06			
07	194 32.3 +01.2	N	16 00.7 +00.4	280 15.8 +01.9	S	18 31.4 -00.1	284 36.9 +02.1	S	19 29.3 -00.1	07			
08	209 33.5 +01.2	N	16 01.1 +00.4	295 17.7 +01.8	S	18 31.3 -00.2	299 39.0 +02.2	S	19 29.2 -00.1	08			
09	224 34.7 +01.1	N	16 01.5 +00.5	310 19.5 +01.9	S	18 31.1 -00.1	314 41.2 +02.2	S	19 29.1 +00.0	09			
10	239 35.8 +01.2	N	16 02.0 +00.4	325 21.4 +01.8	S	18 31.0 -00.2	329 43.4 +02.1	S	19 29.1 -00.1	10			
11	254 37.0 +01.2	N	16 02.4 +00.4	340 23.2 +01.9	S	18 30.8 -00.1	344 45.5 +02.2	S	19 29.0 -00.1	11			
12	269 38.2 +01.2	N	16 02.8 +00.5	355 25.1 +01.9	S	18 30.7 -00.2	359 47.7 +02.1	S	19 28.9 -00.1	12			
13	284 39.4 +01.2	N	16 03.3 +00.4	10 27.0 +01.8	S	18 30.5 -00.1	14 49.8 +02.2	S	19 28.8 +00.0	13			
14	299 40.6 +01.1	N	16 03.7 +00.5	25 28.8 +01.9	S	18 30.4 -00.2	29 52.0 +02.1	S	19 28.8 -00.1	14			
15	314 41.7 +01.2	N	16 04.2 +00.4	40 30.7 +01.8	S	18 30.2 -00.2	44 54.1 +02.2	S	19 28.7 -00.1	15			
16	329 42.9 +01.2	N	16 04.6 +00.4	55 32.5 +01.9	S	18 30.0 -00.1	59 56.3 +02.2	S	19 28.6 +00.0	16			
17	344 44.1 +01.2	N	16 05.0 +00.5	70 34.4 +01.9	S	18 29.9 -00.2	74 58.5 +02.1	S	19 28.6 -00.1	17			
18	359 45.3 +01.1	N	16 05.5 +00.4	85 36.3 +01.8	S	18 29.7 -00.1	90 00.6 +02.2	S	19 28.5 -00.1	18			
19	14 46.4 +01.2	N	16 05.9 +00.4	100 38.1 +01.9	S	18 29.6 -00.2	105 02.8 +02.1	S	19 28.4 +00.0	19			
20	29 47.6 +01.2	N	16 06.3 +00.5	115 40.0 +01.8	S	18 29.4 -00.1	120 04.9 +02.2	S	19 28.4 -00.1	20			
21	44 48.8 +01.2	N	16 06.8 +00.4	130 41.8 +01.9	S	18 29.3 -00.2	135 07.1 +02.1	S	19 28.3 -00.1	21			
22	59 50.0 +01.1	N	16 07.2 +00.5	145 43.7 +01.8	S	18 29.1 -00.1	150 09.2 +02.2	S	19 28.2 +00.0	22			
23	74 51.1 +01.2	N	16 07.7 +00.4	160 45.5 +01.9	S	18 29.0 -00.2	165 11.4 +02.2	S	19 28.2 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 323° 323° 323° 323° 323° 322°			SHA 049° 048° 048° 048° 048° 048°			SHA 053° 053° 053° 053° 053° 053°						
	Greenwich Culmination Time: 18:00			Greenwich Culmination Time: 12:18			Greenwich Culmination Time: 12:00						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 46.8 -00.1	S	18 11.6 -00.6	191 14.2 -00.9	S	21 43.5 -00.4	6 14.7 -33.2	N	23 40.0 -04.7	00			
01	191 46.7 -00.1	S	18 11.0 -00.7	206 13.3 -00.8	S	21 43.1 -00.5	20 41.5 -33.2	N	23 35.3 -04.8	01			
02	206 46.6 -00.1	S	18 10.3 -00.6	221 12.5 -00.9	S	21 42.6 -00.4	35 08.3 -33.2	N	23 30.5 -04.9	02			
03	221 46.5 -00.2	S	18 09.7 -00.7	236 11.6 -00.9	S	21 42.2 -00.5	49 35.1 -33.2	N	23 25.6 -05.1	03			
04	236 46.3 -00.1	S	18 09.0 -00.7	251 10.7 -00.9	S	21 41.7 -00.4	64 01.9 -33.1	N	23 20.5 -05.2	04			
05	251 46.2 -00.1	S	18 08.3 -00.6	266 09.8 -00.8	S	21 41.3 -00.5	78 28.8 -33.2	N	23 15.3 -05.3	05			
06	266 46.1 -00.1	S	18 07.7 -00.7	281 09.0 -00.9	S	21 40.8 -00.5	92 55.6 -33.1	N	23 10.0 -05.5	06			
07	281 46.0 -00.1	S	18 07.0 -00.6	296 08.1 -00.9	S	21 40.3 -00.4	107 22.5 -33.1	N	23 04.5 -05.6	07			
08	296 45.9 -00.1	S	18 06.4 -00.7	311 07.2 -00.8	S	21 39.9 -00.5	121 49.4 -33.1	N	22 58.9 -05.8	08			
09	311 45.8 -00.1	S	18 05.7 -00.7	326 06.4 -00.9	S	21 39.4 -00.5	136 16.3 -33.1	N	22 53.1 -05.9	09			
10	326 45.7 -00.2	S	18 05.0 -00.6	341 05.5 -00.9	S	21 38.9 -00.4	150 43.2 -33.0	N	22 47.2 -06.0	10			
11	341 45.5 -00.1	S	18 04.4 -00.7	356 04.6 -00.9	S	21 38.5 -00.5	165 10.2 -33.1	N	22 41.2 -06.1	11			
12	356 45.4 -00.1	S	18 03.7 -00.7	11 03.7 -00.8	S	21 38.0 -00.5	179 37.1 -33.0	N	22 35.1 -06.4	12			
13	11 45.3 -00.1	S	18 03.0 -00.6	26 02.9 -00.9	S	21 37.5 -00.4	194 04.1 -33.0	N	22 28.7 -06.4	13			
14	26 45.2 -00.1	S	18 02.4 -00.7	41 02.0 -00.9	S	21 37.1 -00.5	208 31.1 -32.9	N	22 22.3 -06.6	14			
15	41 45.1 -00.1	S	18 01.7 -00.7	56 01.1 -00.8	S	21 36.6 -00.5	222 58.2 -33.0	N	22 15.7 -06.7	15			
16	56 45.0 -00.1	S	18 01.0 -00.6	71 00.3 -00.9	S	21 36.1 -00.5	237 25.2 -32.9	N	22 09.0 -06.8	16			
17	71 44.9 -00.1	S	18 00.4 -00.7	85 59.4 -00.9	S	21 35.6 -00.4	251 52.3 -32.9	N	22 02.2 -07.0	17			
18	86 44.8 -00.2	S	17 59.7 -00.7	100 58.5 -00.8	S	21 35.2 -00.5	266 19.4 -32.8	N	21 55.2 -07.1	18			
19	101 44.6 -00.1	S	17 59.0 -00.6	115 57.7 -00.9	S	21 34.7 -00.5	280 46.6 -32.8	N	21 48.1 -07.2	19			
20	116 44.5 -00.1	S	17 58.4 -00.7	130 56.8 -00.9	S	21 34.2 -00.5	295 13.8 -32.8	N	21 40.9 -07.4	20			
21	131 44.4 -00.1	S	17 57.7 -00.7	145 55.9 -00.8	S	21 33.7 -00.4	309 41.0 -32.8	N	21 33.5 -07.5	21			
22	146 44.3 -00.1	S	17 57.0 -00.7	160 55.1 -00.9	S	21 33.3 -00.5	324 08.2 -32.7	N	21 26.0 -07.6	22			
23	161 44.2 -00.1	S	17 56.3 -00.6	175 54.2 -00.9	S	21 32.8 -00.5	338 35.5 -32.8	N	21 18.4 -07.8	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'5 15'6 15'6 15'6 15'6 15'7						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 57'0 57'1 57'2 57'3 57'4 57'5						
	SHA 049° 049° 049° 049° 049° 048°			SHA 064° 063° 063° 063° 063° 063°			SHA 238° 235° 233° 230° 228° 226°						
	Greenwich Culmination Time: 12:12			Greenwich Culmination Time: 11:15			Greenwich Culmination Time: -1:00						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	89 52.3 +01.2	N	16 08.1 +00.4	175 47.4 +01.9	S	18 28.8 -00.1	180 13.6 +02.1	S	19 28.1 -00.1	00			
01	104 53.5 +01.2	N	16 08.5 +00.5	190 49.3 +01.8	S	18 28.7 -00.2	195 15.7 +02.2	S	19 28.0 +00.0	01			
02	119 54.7 +01.1	N	16 09.0 +00.4	205 51.1 +01.9	S	18 28.5 -00.1	210 17.9 +02.1	S	19 28.0 -00.1	02			
03	134 55.8 +01.2	N	16 09.4 +00.4	220 53.0 +01.8	S	18 28.4 -00.2	225 20.0 +02.2	S	19 27.9 -00.1	03			
04	149 57.0 +01.2	N	16 09.8 +00.5	235 54.8 +01.9	S	18 28.2 -00.1	240 22.2 +02.1	S	19 27.8 -00.1	04			
05	164 58.2 +01.2	N	16 10.3 +00.4	250 56.7 +01.9	S	18 28.1 -00.2	255 24.3 +02.2	S	19 27.7 +00.0	05			
06	179 59.4 +01.1	N	16 10.7 +00.4	265 58.6 +01.8	S	18 27.9 -00.2	270 26.5 +02.2	S	19 27.7 -00.1	06			
07	195 00.5 +01.2	N	16 11.1 +00.5	281 00.4 +01.9	S	18 27.7 -00.1	285 28.7 +02.1	S	19 27.6 -00.1	07			
08	210 01.7 +01.2	N	16 11.6 +00.4	296 02.3 +01.8	S	18 27.6 -00.2	300 30.8 +02.2	S	19 27.5 +00.0	08			
09	225 02.9 +01.1	N	16 12.0 +00.4	311 04.1 +01.9	S	18 27.4 -00.1	315 33.0 +02.1	S	19 27.5 -00.1	09			
10	240 04.0 +01.2	N	16 12.4 +00.5	326 06.0 +01.9	S	18 27.3 -00.2	330 35.1 +02.2	S	19 27.4 -00.1	10			
11	255 05.2 +01.2	N	16 12.9 +00.4	341 07.9 +01.8	S	18 27.1 -00.1	345 37.3 +02.1	S	19 27.3 +00.0	11			
12	270 06.4 +01.2	N	16 13.3 +00.5	356 09.7 +01.9	S	18 27.0 -00.2	0 39.4 +02.2	S	19 27.3 -00.1	12			
13	285 07.6 +01.1	N	16 13.8 +00.4	11 11.6 +01.8	S	18 26.8 -00.1	15 41.6 +02.2	S	19 27.2 -00.1	13			
14	300 08.7 +01.2	N	16 14.2 +00.4	26 13.4 +01.9	S	18 26.7 -00.2	30 43.8 +02.1	S	19 27.1 +00.0	14			
15	315 09.9 +01.2	N	16 14.6 +00.5	41 15.3 +01.9	S	18 26.5 -00.1	45 45.9 +02.2	S	19 27.1 -00.1	15			
16	330 11.1 +01.1	N	16 15.1 +00.4	56 17.2 +01.8	S	18 26.4 -00.2	60 48.1 +02.1	S	19 27.0 -00.1	16			
17	345 12.2 +01.2	N	16 15.5 +00.4	71 19.0 +01.9	S	18 26.2 -00.1	75 50.2 +02.2	S	19 26.9 +00.0	17			
18	0 13.4 +01.2	N	16 15.9 +00.5	86 20.9 +01.8	S	18 26.1 -00.2	90 52.4 +02.1	S	19 26.9 -00.1	18			
19	15 14.6 +01.1	N	16 16.4 +00.4	101 22.7 +01.9	S	18 25.9 -00.1	105 54.5 +02.2	S	19 26.8 -00.1	19			
20	30 15.7 +01.2	N	16 16.8 +00.4	116 24.6 +01.9	S	18 25.8 -00.2	120 56.7 +02.2	S	19 26.7 -00.1	20			
21	45 16.9 +01.2	N	16 17.2 +00.5	131 26.5 +01.8	S	18 25.6 -00.2	135 58.9 +02.1	S	19 26.6 +00.0	21			
22	60 18.1 +01.1	N	16 17.7 +00.4	146 28.3 +01.9	S	18 25.4 -00.1	151 01.0 +02.2	S	19 26.6 -00.1	22			
23	75 19.2 +01.2	N	16 18.1 +00.4	161 30.2 +01.8	S	18 25.3 -00.2	166 03.2 +02.1	S	19 26.5 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 322° 322° 322° 322° 322° 322°			SHA 048° 048° 048° 048° 048° 048°			SHA 053° 053° 053° 053° 053° 053°						
	Greenwich Culmination Time: 17:59			Greenwich Culmination Time: 12:15			Greenwich Culmination Time: 11:57						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 44.1 -00.1	S	17 55.7 -00.7	190 53.3 -00.8	S	21 32.3 -00.5	353 02.7 -32.6	N	21 10.6 -07.9	00			
01	191 44.0 -00.1	S	17 55.0 -00.7	205 52.5 -00.9	S	21 31.8 -00.5	7 30.1 -32.7	N	21 02.7 -08.0	01			
02	206 43.9 -00.1	S	17 54.3 -00.6	220 51.6 -00.9	S	21 31.3 -00.5	21 57.4 -32.6	N	20 54.7 -08.1	02			
03	221 43.8 -00.1	S	17 53.7 -00.7	235 50.7 -00.8	S	21 30.8 -00.4	36 24.8 -32.5	N	20 46.6 -08.3	03			
04	236 43.7 -00.1	S	17 53.0 -00.7	250 49.9 -00.9	S	21 30.4 -00.5	50 52.3 -32.6	N	20 38.3 -08.4	04			
05	251 43.6 -00.2	S	17 52.3 -00.7	265 49.0 -00.9	S	21 29.9 -00.5	65 19.7 -32.5	N	20 29.9 -08.5	05			
06	266 43.4 -00.1	S	17 51.6 -00.6	280 48.1 -00.8	S	21 29.4 -00.5	79 47.2 -32.4	N	20 21.4 -08.6	06			
07	281 43.3 -00.1	S	17 51.0 -00.7	295 47.3 -00.9	S	21 28.9 -00.5	94 14.8 -32.4	N	20 12.8 -08.8	07			
08	296 43.2 -00.1	S	17 50.3 -00.7	310 46.4 -00.8	S	21 28.4 -00.5	108 42.4 -32.4	N	20 04.0 -08.8	08			
09	311 43.1 -00.1	S	17 49.6 -00.7	325 45.6 -00.9	S	21 27.9 -00.5	123 10.0 -32.3	N	19 55.2 -09.0	09			
10	326 43.0 -00.1	S	17 48.9 -00.7	340 44.7 -00.9	S	21 27.4 -00.5	137 37.7 -32.4	N	19 46.2 -09.2	10			
11	341 42.9 -00.1	S	17 48.2 -00.6	355 43.8 -00.8	S	21 26.9 -00.5	152 05.3 -32.2	N	19 37.0 -09.2	11			
12	356 42.8 -00.1	S	17 47.6 -00.7	10 43.0 -00.9	S	21 26.4 -00.5	166 33.1 -32.2	N	19 27.8 -09.3	12			
13	11 42.7 -00.1	S	17 46.9 -00.7	25 42.1 -00.8	S	21 25.9 -00.5	181 00.9 -32.2	N	19 18.5 -09.5	13			
14	26 42.6 -00.1	S	17 46.2 -00.7	40 41.3 -00.9	S	21 25.4 -00.5	195 28.7 -32.2	N	19 09.0 -09.6	14			
15	41 42.5 -00.1	S	17 45.5 -00.7	55 40.4 -00.9	S	21 24.9 -00.5	209 56.5 -32.0	N	18 59.4 -09.7	15			
16	56 42.4 -00.1	S	17 44.8 -00.6	70 39.5 -00.8	S	21 24.4 -00.5	224 24.5 -32.1	N	18 49.7 -09.8	16			
17	71 42.3 -00.1	S	17 44.2 -00.7	85 38.7 -00.9	S	21 23.9 -00.5	238 52.4 -32.0	N	18 39.9 -09.9	17			
18	86 42.2 -00.1	S	17 43.5 -00.7	100 37.8 -00.8	S	21 23.4 -00.5	253 20.4 -32.0	N	18 30.0 -10.1	18			
19	101 42.1 -00.1	S	17 42.8 -00.7	115 37.0 -00.9	S	21 22.9 -00.5	267 48.4 -31.9	N	18 19.9 -10.1	19			
20	116 42.0 -00.1	S	17 42.1 -00.7	130 36.1 -00.9	S	21 22.4 -00.5	282 16.5 -31.9	N	18 09.8 -10.3	20			
21	131 41.9 -00.1	S	17 41.4 -00.6	145 35.2 -00.8	S	21 21.9 -00.5	296 44.6 -31.8	N	17 59.5 -10.3	21			
22	146 41.8 -00.1	S	17 40.8 -00.7	160 34.4 -00.9	S	21 21.4 -00.5	311 12.8 -31.8	N	17 49.2 -10.5	22			
23	161 41.7 -00.1	S	17 40.1 -00.7	175 33.5 -00.8	S	21 20.9 -00.5	325 41.0 -31.8	N	17 38.7 -10.6	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'7 15'7 15'7 15'8 15'8 15'8						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 57'6 57'7 57'8 57'9 58'0 58'1						
	SHA 048° 048° 048° 048° 048° 047°			SHA 062° 062° 062° 062° 061° 061°			SHA 223° 221° 219° 216° 214° 212°						
	Greenwich Culmination Time: 12:13			Greenwich Culmination Time: 11:17			Greenwich Culmination Time: 00:28						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	90 20.4 +01.2	N	16 18.5 +00.5	176 32.0 +01.9	S	18 25.1 -00.1	181 05.3 +02.2	S	19 26.4 +00.0	00			
01	105 21.6 +01.1	N	16 19.0 +00.4	191 33.9 +01.9	S	18 25.0 -00.2	196 07.5 +02.1	S	19 26.4 -00.1	01			
02	120 22.7 +01.2	N	16 19.4 +00.4	206 35.8 +01.8	S	18 24.8 -00.1	211 09.6 +02.2	S	19 26.3 -00.1	02			
03	135 23.9 +01.2	N	16 19.8 +00.5	221 37.6 +01.9	S	18 24.7 -00.2	226 11.8 +02.2	S	19 26.2 +00.0	03			
04	150 25.1 +01.1	N	16 20.3 +00.4	236 39.5 +01.8	S	18 24.5 -00.1	241 14.0 +02.1	S	19 26.2 -00.1	04			
05	165 26.2 +01.2	N	16 20.7 +00.4	251 41.3 +01.9	S	18 24.4 -00.2	256 16.1 +02.2	S	19 26.1 -00.1	05			
06	180 27.4 +01.2	N	16 21.1 +00.5	266 43.2 +01.9	S	18 24.2 -00.1	271 18.3 +02.1	S	19 26.0 +00.0	06			
07	195 28.6 +01.1	N	16 21.6 +00.4	281 45.1 +01.8	S	18 24.1 -00.2	286 20.4 +02.2	S	19 26.0 -00.1	07			
08	210 29.7 +01.2	N	16 22.0 +00.5	296 46.9 +01.9	S	18 23.9 -00.2	301 22.6 +02.1	S	19 25.9 -00.1	08			
09	225 30.9 +01.1	N	16 22.5 +00.4	311 48.8 +01.8	S	18 23.7 -00.1	316 24.7 +02.2	S	19 25.8 +00.0	09			
10	240 32.0 +01.2	N	16 22.9 +00.4	326 50.6 +01.9	S	18 23.6 -00.2	331 26.9 +02.2	S	19 25.8 -00.1	10			
11	255 33.2 +01.2	N	16 23.3 +00.5	341 52.5 +01.9	S	18 23.4 -00.1	346 29.1 +02.1	S	19 25.7 -00.1	11			
12	270 34.4 +01.1	N	16 23.8 +00.4	356 54.4 +01.8	S	18 23.3 -00.2	1 31.2 +02.2	S	19 25.6 -00.1	12			
13	285 35.5 +01.2	N	16 24.2 +00.4	11 56.2 +01.9	S	18 23.1 -00.1	16 33.4 +02.1	S	19 25.5 +00.0	13			
14	300 36.7 +01.2	N	16 24.6 +00.5	26 58.1 +01.8	S	18 23.0 -00.2	31 35.5 +02.2	S	19 25.5 -00.1	14			
15	315 37.9 +01.1	N	16 25.1 +00.4	41 59.9 +01.9	S	18 22.8 -00.1	46 37.7 +02.2	S	19 25.4 -00.1	15			
16	330 39.0 +01.2	N	16 25.5 +00.4	57 01.8 +01.9	S	18 22.7 -00.2	61 39.9 +02.1	S	19 25.3 +00.0	16			
17	345 40.2 +01.1	N	16 25.9 +00.5	72 03.7 +01.8	S	18 22.5 -00.2	76 42.0 +02.2	S	19 25.3 -00.1	17			
18	0 41.3 +01.2	N	16 26.4 +00.4	87 05.5 +01.9	S	18 22.3 -00.1	91 44.2 +02.1	S	19 25.2 -00.1	18			
19	15 42.5 +01.2	N	16 26.8 +00.4	102 07.4 +01.8	S	18 22.2 -00.2	106 46.3 +02.2	S	19 25.1 +00.0	19			
20	30 43.7 +01.1	N	16 27.2 +00.5	117 09.2 +01.9	S	18 22.0 -00.1	121 48.5 +02.1	S	19 25.1 -00.1	20			
21	45 44.8 +01.2	N	16 27.7 +00.4	132 11.1 +01.9	S	18 21.9 -00.2	136 50.6 +02.2	S	19 25.0 -00.1	21			
22	60 46.0 +01.1	N	16 28.1 +00.4	147 13.0 +01.8	S	18 21.7 -00.1	151 52.8 +02.2	S	19 24.9 +00.0	22			
23	75 47.1 +01.2	N	16 28.5 +00.5	162 14.8 +01.9	S	18 21.6 -00.2	166 55.0 +02.1	S	19 24.9 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 322° 322° 322° 322° 321° 321°			SHA 048° 048° 048° 048° 048° 048°			SHA 053° 053° 053° 053° 053° 053°						
	Greenwich Culmination Time: 17:57			Greenwich Culmination Time: 12:12			Greenwich Culmination Time: 11:53						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 41.6 -00.1	S	17 39.4 -00.7	190 32.7 -00.9	S	21 20.4 -00.5	340 09.2 -31.7	N	17 28.1 -10.7	00			
01	191 41.5 -00.1	S	17 38.7 -00.7	205 31.8 -00.8	S	21 19.9 -00.5	354 37.5 -31.7	N	17 17.4 -10.8	01			
02	206 41.4 -00.1	S	17 38.0 -00.7	220 31.0 -00.9	S	21 19.4 -00.6	9 05.8 -31.6	N	17 06.6 -10.8	02			
03	221 41.3 -00.1	S	17 37.3 -00.7	235 30.1 -00.8	S	21 18.8 -00.5	23 34.2 -31.5	N	16 55.8 -11.0	03			
04	236 41.2 -00.1	S	17 36.6 -00.7	250 29.3 -00.9	S	21 18.3 -00.5	38 02.7 -31.6	N	16 44.8 -11.1	04			
05	251 41.1 -00.1	S	17 35.9 -00.6	265 28.4 -00.9	S	21 17.8 -00.5	52 31.1 -31.5	N	16 33.7 -11.2	05			
06	266 41.0 -00.1	S	17 35.3 -00.7	280 27.5 -00.8	S	21 17.3 -00.5	66 59.6 -31.4	N	16 22.5 -11.3	06			
07	281 40.9 -00.1	S	17 34.6 -00.7	295 26.7 -00.9	S	21 16.8 -00.5	81 28.2 -31.4	N	16 11.2 -11.4	07			
08	296 40.8 -00.1	S	17 33.9 -00.7	310 25.8 -00.8	S	21 16.3 -00.5	95 56.8 -31.4	N	15 59.8 -11.4	08			
09	311 40.7 -00.1	S	17 33.2 -00.7	325 25.0 -00.9	S	21 15.8 -00.6	110 25.4 -31.3	N	15 48.4 -11.6	09			
10	326 40.6 -00.1	S	17 32.5 -00.7	340 24.1 -00.8	S	21 15.2 -00.5	124 54.1 -31.2	N	15 36.8 -11.7	10			
11	341 40.5 -00.1	S	17 31.8 -00.7	355 23.3 -00.9	S	21 14.7 -00.5	139 22.9 -31.2	N	15 25.1 -11.7	11			
12	356 40.4 -00.1	S	17 31.1 -00.7	10 22.4 -00.8	S	21 14.2 -00.5	153 51.7 -31.2	N	15 13.4 -11.9	12			
13	11 40.3 -00.1	S	17 30.4 -00.7	25 21.6 -00.9	S	21 13.7 -00.6	168 20.5 -31.2	N	15 01.5 -11.9	13			
14	26 40.2 -00.1	S	17 29.7 -00.7	40 20.7 -00.8	S	21 13.1 -00.5	182 49.3 -31.1	N	14 49.6 -12.1	14			
15	41 40.1 -00.1	S	17 29.0 -00.7	55 19.9 -00.9	S	21 12.6 -00.5	197 18.2 -31.0	N	14 37.5 -12.1	15			
16	56 40.0 -00.1	S	17 28.3 -00.6	70 19.0 -00.8	S	21 12.1 -00.5	211 47.2 -31.0	N	14 25.4 -12.2	16			
17	71 39.9 -00.1	S	17 27.7 -00.7	85 18.2 -00.9	S	21 11.6 -00.6	226 16.2 -31.0	N	14 13.2 -12.2	17			
18	86 39.8 -00.1	S	17 27.0 -00.7	100 17.3 -00.8	S	21 11.0 -00.5	240 45.2 -30.9	N	14 01.0 -12.4	18			
19	101 39.7 -00.1	S	17 26.3 -00.7	115 16.5 -00.9	S	21 10.5 -00.5	255 14.3 -30.9	N	13 48.6 -12.5	19			
20	116 39.6 -00.1	S	17 25.6 -00.7	130 15.6 -00.8	S	21 10.0 -00.6	269 43.4 -30.8	N	13 36.1 -12.5	20			
21	131 39.5 +00.0	S	17 24.9 -00.7	145 14.8 -00.9	S	21 09.4 -00.5	284 12.6 -30.8	N	13 23.6 -12.6	21			
22	146 39.5 -00.1	S	17 24.2 -00.7	160 13.9 -00.8	S	21 08.9 -00.5	298 41.8 -30.7	N	13 11.0 -12.7	22			
23	161 39.4 -00.1	S	17 23.5 -00.7	175 13.1 -00.8	S	21 08.4 -00.6	313 11.1 -30.8	N	12 58.3 -12.7	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'8 15'9 15'9 15'9 15'9 15'9						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 58'1 58'2 58'3 58'4 58'4 58'5						
	SHA 047° 047° 047° 047° 046° 046°			SHA 061° 061° 061° 060° 060° 060°			SHA 210° 207° 205° 203° 201° 198°						
	Greenwich Culmination Time: 12:13			Greenwich Culmination Time: 11:18			Greenwich Culmination Time: 01:22						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	90 48.3 +01.2	N	16 29.0 +00.4	177 16.7 +01.8	S	18 21.4 -00.1	181 57.1 +02.2	S	19 24.8 -00.1	00			
01	105 49.5 +01.1	N	16 29.4 +00.4	192 18.5 +01.9	S	18 21.3 -00.2	196 59.3 +02.1	S	19 24.7 +00.0	01			
02	120 50.6 +01.2	N	16 29.8 +00.5	207 20.4 +01.9	S	18 21.1 -00.1	212 01.4 +02.2	S	19 24.7 -00.1	02			
03	135 51.8 +01.1	N	16 30.3 +00.4	222 22.3 +01.8	S	18 21.0 -00.2	227 03.6 +02.1	S	19 24.6 -00.1	03			
04	150 52.9 +01.2	N	16 30.7 +00.4	237 24.1 +01.9	S	18 20.8 -00.2	242 05.7 +02.2	S	19 24.5 -00.1	04			
05	165 54.1 +01.1	N	16 31.1 +00.5	252 26.0 +01.9	S	18 20.6 -00.1	257 07.9 +02.2	S	19 24.4 +00.0	05			
06	180 55.2 +01.2	N	16 31.6 +00.4	267 27.9 +01.8	S	18 20.5 -00.2	272 10.1 +02.1	S	19 24.4 -00.1	06			
07	195 56.4 +01.2	N	16 32.0 +00.4	282 29.7 +01.9	S	18 20.3 -00.1	287 12.2 +02.2	S	19 24.3 -00.1	07			
08	210 57.6 +01.1	N	16 32.4 +00.4	297 31.6 +01.8	S	18 20.2 -00.2	302 14.4 +02.1	S	19 24.2 +00.0	08			
09	225 58.7 +01.2	N	16 32.8 +00.5	312 33.4 +01.9	S	18 20.0 -00.1	317 16.5 +02.2	S	19 24.2 -00.1	09			
10	240 59.9 +01.1	N	16 33.3 +00.4	327 35.3 +01.9	S	18 19.9 -00.2	332 18.7 +02.2	S	19 24.1 -00.1	10			
11	256 01.0 +01.2	N	16 33.7 +00.4	342 37.2 +01.8	S	18 19.7 -00.1	347 20.9 +02.1	S	19 24.0 +00.0	11			
12	271 02.2 +01.1	N	16 34.1 +00.5	357 39.0 +01.9	S	18 19.6 -00.2	2 23.0 +02.2	S	19 24.0 -00.1	12			
13	286 03.3 +01.2	N	16 34.6 +00.4	12 40.9 +01.8	S	18 19.4 -00.2	17 25.2 +02.1	S	19 23.9 -00.1	13			
14	301 04.5 +01.1	N	16 35.0 +00.4	27 42.7 +01.9	S	18 19.2 -00.1	32 27.3 +02.2	S	19 23.8 +00.0	14			
15	316 05.6 +01.2	N	16 35.4 +00.5	42 44.6 +01.9	S	18 19.1 -00.2	47 29.5 +02.1	S	19 23.8 -00.1	15			
16	331 06.8 +01.1	N	16 35.9 +00.4	57 46.5 +01.8	S	18 18.9 -00.1	62 31.6 +02.2	S	19 23.7 -00.1	16			
17	346 07.9 +01.2	N	16 36.3 +00.4	72 48.3 +01.9	S	18 18.8 -00.2	77 33.8 +02.2	S	19 23.6 +00.0	17			
18	1 09.1 +01.1	N	16 36.7 +00.5	87 50.2 +01.8	S	18 18.6 -00.1	92 36.0 +02.1	S	19 23.6 -00.1	18			
19	16 10.2 +01.2	N	16 37.2 +00.4	102 52.0 +01.9	S	18 18.5 -00.2	107 38.1 +02.2	S	19 23.5 -00.1	19			
20	31 11.4 +01.1	N	16 37.6 +00.4	117 53.9 +01.9	S	18 18.3 -00.1	122 40.3 +02.1	S	19 23.4 -00.1	20			
21	46 12.5 +01.2	N	16 38.0 +00.5	132 55.8 +01.8	S	18 18.2 -00.2	137 42.4 +02.2	S	19 23.3 +00.0	21			
22	61 13.7 +01.2	N	16 38.5 +00.4	147 57.6 +01.9	S	18 18.0 -00.2	152 44.6 +02.1	S	19 23.3 -00.1	22			
23	76 14.9 +01.1	N	16 38.9 +00.4	162 59.5 +01.8	S	18 17.8 -00.1	167 46.7 +02.2	S	19 23.2 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 321° 321° 321° 321° 321° 321°			SHA 048° 048° 048° 048° 048° 048°			SHA 052° 052° 052° 052° 052° 052°						
	Greenwich Culmination Time: 17:55			Greenwich Culmination Time: 12:09			Greenwich Culmination Time: 11:50						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 39.3 -00.1	S	17 22.8 -00.7	190 12.3 -00.9	S	21 07.8 -00.5	327 40.3 -30.6	N	12 45.6 -12.9	00			
01	191 39.2 -00.1	S	17 22.1 -00.7	205 11.4 -00.8	S	21 07.3 -00.5	342 09.7 -30.7	N	12 32.7 -12.9	01			
02	206 39.1 -00.1	S	17 21.4 -00.7	220 10.6 -00.9	S	21 06.8 -00.6	356 39.0 -30.6	N	12 19.8 -13.0	02			
03	221 39.0 -00.1	S	17 20.7 -00.7	235 09.7 -00.8	S	21 06.2 -00.5	11 08.4 -30.5	N	12 06.8 -13.0	03			
04	236 38.9 -00.1	S	17 20.0 -00.7	250 08.9 -00.9	S	21 05.7 -00.6	25 37.9 -30.5	N	11 53.8 -13.1	04			
05	251 38.8 -00.1	S	17 19.3 -00.7	265 08.0 -00.8	S	21 05.1 -00.5	40 07.4 -30.5	N	11 40.7 -13.2	05			
06	266 38.7 -00.1	S	17 18.6 -00.7	280 07.2 -00.9	S	21 04.6 -00.5	54 36.9 -30.5	N	11 27.5 -13.3	06			
07	281 38.6 -00.1	S	17 17.9 -00.7	295 06.3 -00.8	S	21 04.1 -00.6	69 06.4 -30.4	N	11 14.2 -13.3	07			
08	296 38.5 +00.0	S	17 17.2 -00.7	310 05.5 -00.8	S	21 03.5 -00.5	83 36.0 -30.3	N	11 00.9 -13.4	08			
09	311 38.5 -00.1	S	17 16.5 -00.7	325 04.7 -00.9	S	21 03.0 -00.6	98 05.7 -30.4	N	10 47.5 -13.5	09			
10	326 38.4 -00.1	S	17 15.8 -00.7	340 03.8 -00.8	S	21 02.4 -00.5	112 35.3 -30.3	N	10 34.0 -13.5	10			
11	341 38.3 -00.1	S	17 15.1 -00.7	355 03.0 -00.9	S	21 01.9 -00.6	127 05.0 -30.2	N	10 20.5 -13.6	11			
12	356 38.2 -00.1	S	17 14.4 -00.7	10 02.1 -00.8	S	21 01.3 -00.5	141 34.8 -30.3	N	10 06.9 -13.6	12			
13	11 38.1 -00.1	S	17 13.7 -00.7	25 01.3 -00.9	S	21 00.8 -00.6	156 04.5 -30.2	N	09 53.3 -13.7	13			
14	26 38.0 -00.1	S	17 13.0 -00.8	40 00.4 -00.8	S	21 00.2 -00.5	170 34.3 -30.1	N	09 39.6 -13.8	14			
15	41 37.9 -00.1	S	17 12.2 -00.7	54 59.6 -00.8	S	20 59.7 -00.6	185 04.2 -30.2	N	09 25.8 -13.8	15			
16	56 37.8 -00.1	S	17 11.5 -00.7	69 58.8 -00.9	S	20 59.1 -00.5	199 34.0 -30.1	N	09 12.0 -13.8	16			
17	71 37.7 +00.0	S	17 10.8 -00.7	84 57.9 -00.8	S	20 58.6 -00.6	214 03.9 -30.0	N	08 58.2 -13.9	17			
18	86 37.7 -00.1	S	17 10.1 -00.7	99 57.1 -00.9	S	20 58.0 -00.5	228 33.9 -30.1	N	08 44.3 -14.0	18			
19	101 37.6 -00.1	S	17 09.4 -00.7	114 56.2 -00.8	S	20 57.5 -00.6	243 03.8 -30.0	N	08 30.3 -14.0	19			
20	116 37.5 -00.1	S	17 08.7 -00.7	129 55.4 -00.8	S	20 56.9 -00.6	257 33.8 -30.0	N	08 16.3 -14.1	20			
21	131 37.4 -00.1	S	17 08.0 -00.7	144 54.6 -00.9	S	20 56.3 -00.5	272 03.8 -30.0	N	08 02.2 -14.1	21			
22	146 37.3 -00.1	S	17 07.3 -00.7	159 53.7 -00.8	S	20 55.8 -00.6	286 33.8 -29.9	N	07 48.1 -14.2	22			
23	161 37.2 +00.0	S	17 06.6 -00.7	174 52.9 -00.8	S	20 55.2 -00.5	301 03.9 -29.9	N	07 33.9 -14.2	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'0 16'0 16'0 16'0 16'0 16'0						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 58'6 58'6 58'7 58'7 58'8 58'8						
	SHA 046° 046° 046° 046° 045° 045°			SHA 060° 059° 059° 059° 059° 059°			SHA 196° 194° 192° 190° 187° 185°						
	Greenwich Culmination Time: 12:13			Greenwich Culmination Time: 11:19			Greenwich Culmination Time: 02:13						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	91 16.0 +01.2	N	16 39.3 +00.5	178 01.3 +01.9	S	18 17.7 -00.2	182 48.9 +02.2	S	19 23.1 +00.0	00			
01	106 17.2 +01.1	N	16 39.8 +00.4	193 03.2 +01.9	S	18 17.5 -00.1	197 51.1 +02.1	S	19 23.1 -00.1	01			
02	121 18.3 +01.2	N	16 40.2 +00.4	208 05.1 +01.8	S	18 17.4 -00.2	212 53.2 +02.2	S	19 23.0 -00.1	02			
03	136 19.5 +01.1	N	16 40.6 +00.4	223 06.9 +01.9	S	18 17.2 -00.1	227 55.4 +02.1	S	19 22.9 +00.0	03			
04	151 20.6 +01.2	N	16 41.0 +00.5	238 08.8 +01.8	S	18 17.1 -00.2	242 57.5 +02.2	S	19 22.9 -00.1	04			
05	166 21.8 +01.1	N	16 41.5 +00.4	253 10.6 +01.9	S	18 16.9 -00.1	257 59.7 +02.2	S	19 22.8 -00.1	05			
06	181 22.9 +01.1	N	16 41.9 +00.4	268 12.5 +01.9	S	18 16.8 -00.2	273 01.9 +02.1	S	19 22.7 +00.0	06			
07	196 24.0 +01.2	N	16 42.3 +00.5	283 14.4 +01.8	S	18 16.6 -00.2	288 04.0 +02.2	S	19 22.7 -00.1	07			
08	211 25.2 +01.1	N	16 42.8 +00.4	298 16.2 +01.9	S	18 16.4 -00.1	303 06.2 +02.1	S	19 22.6 -00.1	08			
09	226 26.3 +01.2	N	16 43.2 +00.4	313 18.1 +01.8	S	18 16.3 -00.2	318 08.3 +02.2	S	19 22.5 -00.1	09			
10	241 27.5 +01.1	N	16 43.6 +00.5	328 19.9 +01.9	S	18 16.1 -00.1	333 10.5 +02.1	S	19 22.4 +00.0	10			
11	256 28.6 +01.2	N	16 44.1 +00.4	343 21.8 +01.9	S	18 16.0 -00.2	348 12.6 +02.2	S	19 22.4 -00.1	11			
12	271 29.8 +01.1	N	16 44.5 +00.4	358 23.7 +01.8	S	18 15.8 -00.1	3 14.8 +02.2	S	19 22.3 -00.1	12			
13	286 30.9 +01.2	N	16 44.9 +00.4	13 25.5 +01.9	S	18 15.7 -00.2	18 17.0 +02.1	S	19 22.2 +00.0	13			
14	301 32.1 +01.1	N	16 45.3 +00.5	28 27.4 +01.8	S	18 15.5 -00.2	33 19.1 +02.2	S	19 22.2 -00.1	14			
15	316 33.2 +01.2	N	16 45.8 +00.4	43 29.2 +01.9	S	18 15.3 -00.1	48 21.3 +02.1	S	19 22.1 -00.1	15			
16	331 34.4 +01.1	N	16 46.2 +00.4	58 31.1 +01.9	S	18 15.2 -00.2	63 23.4 +02.2	S	19 22.0 +00.0	16			
17	346 35.5 +01.2	N	16 46.6 +00.5	73 33.0 +01.8	S	18 15.0 -00.1	78 25.6 +02.2	S	19 22.0 -00.1	17			
18	1 36.7 +01.1	N	16 47.1 +00.4	88 34.8 +01.9	S	18 14.9 -00.2	93 27.8 +02.1	S	19 21.9 -00.1	18			
19	16 37.8 +01.1	N	16 47.5 +00.4	103 36.7 +01.9	S	18 14.7 -00.1	108 29.9 +02.2	S	19 21.8 +00.0	19			
20	31 38.9 +01.2	N	16 47.9 +00.5	118 38.6 +01.8	S	18 14.6 -00.2	123 32.1 +02.1	S	19 21.8 -00.1	20			
21	46 40.1 +01.1	N	16 48.4 +00.4	133 40.4 +01.9	S	18 14.4 -00.1	138 34.2 +02.2	S	19 21.7 -00.1	21			
22	61 41.2 +01.2	N	16 48.8 +00.4	148 42.3 +01.8	S	18 14.3 -00.2	153 36.4 +02.2	S	19 21.6 -00.1	22			
23	76 42.4 +01.1	N	16 49.2 +00.4	163 44.1 +01.9	S	18 14.1 -00.2	168 38.6 +02.1	S	19 21.5 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 321° 321° 321° 321° 320° 320°			SHA 048° 048° 047° 047° 047° 047°			SHA 052° 052° 052° 052° 052° 052°						
	Greenwich Culmination Time: 17:53			Greenwich Culmination Time: 12:06			Greenwich Culmination Time: 11:47						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 37.2 -00.1	S	17 05.9 -00.7	189 52.1 -00.9	S	20 54.7 -00.6	315 34.0 -29.9	N	07 19.7 -14.2	00			
01	191 37.1 -00.1	S	17 05.2 -00.8	204 51.2 -00.8	S	20 54.1 -00.6	330 04.1 -29.9	N	07 05.5 -14.3	01			
02	206 37.0 -00.1	S	17 04.4 -00.7	219 50.4 -00.8	S	20 53.5 -00.5	344 34.2 -29.8	N	06 51.2 -14.3	02			
03	221 36.9 -00.1	S	17 03.7 -00.7	234 49.6 -00.9	S	20 53.0 -00.6	359 04.4 -29.8	N	06 36.9 -14.4	03			
04	236 36.8 -00.1	S	17 03.0 -00.7	249 48.7 -00.8	S	20 52.4 -00.6	13 34.6 -29.8	N	06 22.5 -14.4	04			
05	251 36.7 +00.0	S	17 02.3 -00.7	264 47.9 -00.9	S	20 51.8 -00.5	28 04.8 -29.8	N	06 08.1 -14.4	05			
06	266 36.7 -00.1	S	17 01.6 -00.7	279 47.0 -00.8	S	20 51.3 -00.6	42 35.0 -29.7	N	05 53.7 -14.5	06			
07	281 36.6 -00.1	S	17 00.9 -00.7	294 46.2 -00.8	S	20 50.7 -00.6	57 05.3 -29.8	N	05 39.2 -14.5	07			
08	296 36.5 -00.1	S	17 00.2 -00.8	309 45.4 -00.8	S	20 50.1 -00.5	71 35.5 -29.7	N	05 24.7 -14.6	08			
09	311 36.4 -00.1	S	16 59.4 -00.7	324 44.6 -00.9	S	20 49.6 -00.6	86 05.8 -29.7	N	05 10.1 -14.5	09			
10	326 36.3 +00.0	S	16 58.7 -00.7	339 43.7 -00.8	S	20 49.0 -00.6	100 36.1 -29.7	N	04 55.6 -14.6	10			
11	341 36.3 -00.1	S	16 58.0 -00.7	354 42.9 -00.8	S	20 48.4 -00.6	115 06.4 -29.7	N	04 41.0 -14.7	11			
12	356 36.2 -00.1	S	16 57.3 -00.7	9 42.1 -00.9	S	20 47.8 -00.5	129 36.7 -29.6	N	04 26.3 -14.6	12			
13	11 36.1 -00.1	S	16 56.6 -00.7	24 41.2 -00.8	S	20 47.3 -00.6	144 07.1 -29.7	N	04 11.7 -14.7	13			
14	26 36.0 -00.1	S	16 55.9 -00.8	39 40.4 -00.8	S	20 46.7 -00.6	158 37.4 -29.6	N	03 57.0 -14.7	14			
15	41 35.9 +00.0	S	16 55.1 -00.7	54 39.6 -00.9	S	20 46.1 -00.6	173 07.8 -29.6	N	03 42.3 -14.8	15			
16	56 35.9 -00.1	S	16 54.4 -00.7	69 38.7 -00.8	S	20 45.5 -00.6	187 38.2 -29.6	N	03 27.5 -14.7	16			
17	71 35.8 -00.1	S	16 53.7 -00.7	84 37.9 -00.8	S	20 44.9 -00.5	202 08.6 -29.6	N	03 12.8 -14.8	17			
18	86 35.7 -00.1	S	16 53.0 -00.7	99 37.1 -00.9	S	20 44.4 -00.6	216 39.0 -29.6	N	02 58.0 -14.8	18			
19	101 35.6 -00.1	S	16 52.3 -00.8	114 36.2 -00.8	S	20 43.8 -00.6	231 09.4 -29.6	N	02 43.2 -14.8	19			
20	116 35.5 +00.0	S	16 51.5 -00.7	129 35.4 -00.8	S	20 43.2 -00.6	245 39.8 -29.6	N	02 28.4 -14.8	20			
21	131 35.5 -00.1	S	16 50.8 -00.7	144 34.6 -00.8	S	20 42.6 -00.6	260 10.2 -29.6	N	02 13.6 -14.8	21			
22	146 35.4 -00.1	S	16 50.1 -00.7	159 33.8 -00.9	S	20 42.0 -00.6	274 40.6 -29.5	N	01 58.8 -14.9	22			
23	161 35.3 -00.1	S	16 49.4 -00.7	174 32.9 -00.8	S	20 41.4 -00.5	289 11.1 -29.6	N	01 43.9 -14.8	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'0 16'1 16'1 16'1 16'1 16'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 58'9 58'9 59'0 59'0 59'0 59'1						
	SHA 045° 045° 045° 045° 044° 044°			SHA 058° 058° 058° 058° 057° 057°			SHA 183° 181° 179° 177° 174° 172°						
	Greenwich Culmination Time: 12:13			Greenwich Culmination Time: 11:21			Greenwich Culmination Time: 03:03						

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	91 43.5 +01.2	N	16 49.6 +00.5	178 46.0 +01.9	S	18 13.9 -00.1	183 40.7 +02.2	S	19 21.5 -00.1	00			
01	106 44.7 +01.1	N	16 50.1 +00.4	193 47.9 +01.8	S	18 13.8 -00.2	198 42.9 +02.1	S	19 21.4 -00.1	01			
02	121 45.8 +01.1	N	16 50.5 +00.4	208 49.7 +01.9	S	18 13.6 -00.1	213 45.0 +02.2	S	19 21.3 +00.0	02			
03	136 46.9 +01.2	N	16 50.9 +00.5	223 51.6 +01.8	S	18 13.5 -00.2	228 47.2 +02.1	S	19 21.3 -00.1	03			
04	151 48.1 +01.1	N	16 51.4 +00.4	238 53.4 +01.9	S	18 13.3 -00.1	243 49.3 +02.2	S	19 21.2 -00.1	04			
05	166 49.2 +01.2	N	16 51.8 +00.4	253 55.3 +01.9	S	18 13.2 -00.2	258 51.5 +02.2	S	19 21.1 +00.0	05			
06	181 50.4 +01.1	N	16 52.2 +00.4	268 57.2 +01.8	S	18 13.0 -00.2	273 53.7 +02.1	S	19 21.1 -00.1	06			
07	196 51.5 +01.2	N	16 52.6 +00.5	283 59.0 +01.9	S	18 12.8 -00.1	288 55.8 +02.2	S	19 21.0 -00.1	07			
08	211 52.7 +01.1	N	16 53.1 +00.4	299 00.9 +01.8	S	18 12.7 -00.2	303 58.0 +02.1	S	19 20.9 +00.0	08			
09	226 53.8 +01.1	N	16 53.5 +00.4	314 02.7 +01.9	S	18 12.5 -00.1	319 00.1 +02.2	S	19 20.9 -00.1	09			
10	241 54.9 +01.2	N	16 53.9 +00.4	329 04.6 +01.9	S	18 12.4 -00.2	334 02.3 +02.2	S	19 20.8 -00.1	10			
11	256 56.1 +01.1	N	16 54.3 +00.5	344 06.5 +01.8	S	18 12.2 -00.1	349 04.5 +02.1	S	19 20.7 +00.0	11			
12	271 57.2 +01.1	N	16 54.8 +00.4	359 08.3 +01.9	S	18 12.1 -00.2	4 06.6 +02.2	S	19 20.7 -00.1	12			
13	286 58.3 +01.2	N	16 55.2 +00.4	14 10.2 +01.9	S	18 11.9 -00.2	19 08.8 +02.1	S	19 20.6 -00.1	13			
14	301 59.5 +01.1	N	16 55.6 +00.5	29 12.1 +01.8	S	18 11.7 -00.1	34 10.9 +02.2	S	19 20.5 -00.1	14			
15	317 00.6 +01.2	N	16 56.1 +00.4	44 13.9 +01.9	S	18 11.6 -00.2	49 13.1 +02.2	S	19 20.4 +00.0	15			
16	332 01.8 +01.1	N	16 56.5 +00.4	59 15.8 +01.8	S	18 11.4 -00.1	64 15.3 +02.1	S	19 20.4 -00.1	16			
17	347 02.9 +01.1	N	16 56.9 +00.4	74 17.6 +01.9	S	18 11.3 -00.2	79 17.4 +02.2	S	19 20.3 -00.1	17			
18	2 04.0 +01.2	N	16 57.3 +00.5	89 19.5 +01.9	S	18 11.1 -00.1	94 19.6 +02.1	S	19 20.2 +00.0	18			
19	17 05.2 +01.1	N	16 57.8 +00.4	104 21.4 +01.8	S	18 11.0 -00.2	109 21.7 +02.2	S	19 20.2 -00.1	19			
20	32 06.3 +01.1	N	16 58.2 +00.4	119 23.2 +01.9	S	18 10.8 -00.2	124 23.9 +02.1	S	19 20.1 -00.1	20			
21	47 07.4 +01.2	N	16 58.6 +00.4	134 25.1 +01.8	S	18 10.6 -00.1	139 26.0 +02.2	S	19 20.0 +00.0	21			
22	62 08.6 +01.1	N	16 59.0 +00.5	149 26.9 +01.9	S	18 10.5 -00.2	154 28.2 +02.2	S	19 20.0 -00.1	22			
23	77 09.7 +01.2	N	16 59.5 +00.4	164 28.8 +01.9	S	18 10.3 -00.1	169 30.4 +02.1	S	19 19.9 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 320° 320° 320° 320° 320° 320°			SHA 047° 047° 047° 047° 047° 047°			SHA 052° 052° 052° 052° 052° 052°						
	Greenwich Culmination Time: 17:51			Greenwich Culmination Time: 12:03			Greenwich Culmination Time: 11:43						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 35.2 +00.0	S 16 48.7 -00.8	189 32.1 -00.8	S 20 40.9 -00.6	303 41.5 -29.6	N 01 29.1 -14.9	00						00
01	191 35.2 -00.1	S 16 47.9 -00.7	204 31.3 -00.8	S 20 40.3 -00.6	318 11.9 -29.5	N 01 14.2 -14.9	01						01
02	206 35.1 -00.1	S 16 47.2 -00.7	219 30.5 -00.9	S 20 39.7 -00.6	332 42.4 -29.6	N 00 59.3 -14.9	02						02
03	221 35.0 -00.1	S 16 46.5 -00.7	234 29.6 -00.8	S 20 39.1 -00.6	347 12.8 -29.5	N 00 44.4 -14.9	03						03
04	236 34.9 +00.0	S 16 45.8 -00.8	249 28.8 -00.8	S 20 38.5 -00.6	1 43.3 -29.6	N 00 29.5 -14.9	04						04
05	251 34.9 -00.1	S 16 45.0 -00.7	264 28.0 -00.8	S 20 37.9 -00.6	16 13.7 -29.6	N 00 14.6 -14.9	05						05
06	266 34.8 -00.1	S 16 44.3 -00.7	279 27.2 -00.9	S 20 37.3 -00.6	30 44.1 -29.6	S 00 00.3 +14.9	06						06
07	281 34.7 -00.1	S 16 43.6 -00.8	294 26.3 -00.8	S 20 36.7 -00.6	45 14.5 -29.5	S 00 15.2 +14.9	07						07
08	296 34.6 +00.0	S 16 42.8 -00.7	309 25.5 -00.8	S 20 36.1 -00.6	59 45.0 -29.6	S 00 30.1 +14.9	08						08
09	311 34.6 -00.1	S 16 42.1 -00.7	324 24.7 -00.8	S 20 35.5 -00.6	74 15.4 -29.6	S 00 45.0 +14.9	09						09
10	326 34.5 -00.1	S 16 41.4 -00.7	339 23.9 -00.8	S 20 34.9 -00.6	88 45.8 -29.6	S 00 59.9 +14.9	10						10
11	341 34.4 +00.0	S 16 40.7 -00.8	354 23.1 -00.9	S 20 34.3 -00.6	103 16.2 -29.6	S 01 14.8 +14.9	11						11
12	356 34.4 -00.1	S 16 39.9 -00.7	9 22.2 -00.8	S 20 33.7 -00.6	117 46.6 -29.6	S 01 29.7 +14.9	12						12
13	11 34.3 -00.1	S 16 39.2 -00.7	24 21.4 -00.8	S 20 33.1 -00.6	132 17.0 -29.7	S 01 44.6 +14.8	13						13
14	26 34.2 -00.1	S 16 38.5 -00.8	39 20.6 -00.8	S 20 32.5 -00.6	146 47.3 -29.6	S 01 59.4 +14.9	14						14
15	41 34.1 +00.0	S 16 37.7 -00.7	54 19.8 -00.8	S 20 31.9 -00.6	161 17.7 -29.7	S 02 14.3 +14.9	15						15
16	56 34.1 -00.1	S 16 37.0 -00.7	69 19.0 -00.9	S 20 31.3 -00.6	175 48.0 -29.6	S 02 29.2 +14.8	16						16
17	71 34.0 -00.1	S 16 36.3 -00.8	84 18.1 -00.8	S 20 30.7 -00.6	190 18.4 -29.7	S 02 44.0 +14.9	17						17
18	86 33.9 +00.0	S 16 35.5 -00.7	99 17.3 -00.8	S 20 30.1 -00.6	204 48.7 -29.7	S 02 58.9 +14.8	18						18
19	101 33.9 -00.1	S 16 34.8 -00.7	114 16.5 -00.8	S 20 29.5 -00.6	219 19.0 -29.7	S 03 13.7 +14.8	19						19
20	116 33.8 -00.1	S 16 34.1 -00.8	129 15.7 -00.8	S 20 28.9 -00.6	233 49.3 -29.8	S 03 28.5 +14.8	20						20
21	131 33.7 +00.0	S 16 33.3 -00.7	144 14.9 -00.9	S 20 28.3 -00.6	248 19.5 -29.7	S 03 43.3 +14.7	21						21
22	146 33.7 -00.1	S 16 32.6 -00.7	159 14.0 -00.8	S 20 27.7 -00.7	262 49.8 -29.8	S 03 58.0 +14.8	22						22
23	161 33.6 -00.1	S 16 31.9 -00.8	174 13.2 -00.8	S 20 27.0 -00.6	277 20.0 -29.8	S 04 12.8 +14.7	23						23
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'2 16'2 16'2 16'2 16'2 16'2		SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 16'1 16'1 16'1 16'1 16'1 16'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 59'1 59'1 59'1 59'2 59'2 59'2								
	SHA 044° 044° 044° 044° 043° 043°		SHA 057° 057° 057° 056° 056° 056°		SHA 170° 168° 166° 164° 162° 160°								
	Greenwich Culmination Time: 12:13		Greenwich Culmination Time: 11:22		Greenwich Culmination Time: 03:52								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	92 10.9 +01.1	N 16 59.9 +00.4	179 30.7 +01.8	S 18 10.2 -00.2	184 32.5 +02.2	S 19 19.8 +00.0	00						00
01	107 12.0 +01.1	N 17 00.3 +00.5	194 32.5 +01.9	S 18 10.0 -00.1	199 34.7 +02.1	S 19 19.8 -00.1	01						01
02	122 13.1 +01.2	N 17 00.8 +00.4	209 34.4 +01.9	S 18 09.9 -00.2	214 36.8 +02.2	S 19 19.7 -00.1	02						02
03	137 14.3 +01.1	N 17 01.2 +00.4	224 36.3 +01.8	S 18 09.7 -00.2	229 39.0 +02.2	S 19 19.6 -00.1	03						03
04	152 15.4 +01.1	N 17 01.6 +00.4	239 38.1 +01.9	S 18 09.5 -00.1	244 41.2 +02.1	S 19 19.5 +00.0	04						04
05	167 16.5 +01.2	N 17 02.0 +00.5	254 40.0 +01.8	S 18 09.4 -00.2	259 43.3 +02.2	S 19 19.5 -00.1	05						05
06	182 17.7 +01.1	N 17 02.5 +00.4	269 41.8 +01.9	S 18 09.2 -00.1	274 45.5 +02.1	S 19 19.4 -00.1	06						06
07	197 18.8 +01.1	N 17 02.9 +00.4	284 43.7 +01.9	S 18 09.1 -00.2	289 47.6 +02.2	S 19 19.3 +00.0	07						07
08	212 19.9 +01.2	N 17 03.3 +00.4	299 45.6 +01.8	S 18 08.9 -00.1	304 49.8 +02.2	S 19 19.3 -00.1	08						08
09	227 21.1 +01.1	N 17 03.7 +00.5	314 47.4 +01.9	S 18 08.8 -00.2	319 52.0 +02.1	S 19 19.2 -00.1	09						09
10	242 22.2 +01.1	N 17 04.2 +00.4	329 49.3 +01.8	S 18 08.6 -00.2	334 54.1 +02.2	S 19 19.1 +00.0	10						10
11	257 23.3 +01.2	N 17 04.6 +00.4	344 51.1 +01.9	S 18 08.4 -00.1	349 56.3 +02.1	S 19 19.1 -00.1	11						11
12	272 24.5 +01.1	N 17 05.0 +00.4	359 53.0 +01.9	S 18 08.3 -00.2	4 58.4 +02.2	S 19 19.0 -00.1	12						12
13	287 25.6 +01.1	N 17 05.4 +00.5	14 54.9 +01.8	S 18 08.1 -00.1	20 00.6 +02.2	S 19 18.9 +00.0	13						13
14	302 26.7 +01.1	N 17 05.9 +00.4	29 56.7 +01.9	S 18 08.0 -00.2	35 02.8 +02.1	S 19 18.9 -00.1	14						14
15	317 27.8 +01.2	N 17 06.3 +00.4	44 58.6 +01.9	S 18 07.8 -00.1	50 04.9 +02.2	S 19 18.8 -00.1	15						15
16	332 29.0 +01.1	N 17 06.7 +00.4	60 00.5 +01.8	S 18 07.7 -00.2	65 07.1 +02.1	S 19 18.7 -00.1	16						16
17	347 30.1 +01.1	N 17 07.1 +00.5	75 02.3 +01.9	S 18 07.5 -00.2	80 09.2 +02.2	S 19 18.6 +00.0	17						17
18	2 31.2 +01.2	N 17 07.6 +00.4	90 04.2 +01.8	S 18 07.3 -00.1	95 11.4 +02.2	S 19 18.6 -00.1	18						18
19	17 32.4 +01.1	N 17 08.0 +00.4	105 06.0 +01.9	S 18 07.2 -00.2	110 13.6 +02.1	S 19 18.5 -00.1	19						19
20	32 33.5 +01.1	N 17 08.4 +00.4	120 07.9 +01.9	S 18 07.0 -00.1	125 15.7 +02.2	S 19 18.4 +00.0	20						20
21	47 34.6 +01.2	N 17 08.8 +00.5	135 09.8 +01.8	S 18 06.9 -00.2	140 17.9 +02.1	S 19 18.4 -00.1	21						21
22	62 35.8 +01.1	N 17 09.3 +00.4	150 11.6 +01.9	S 18 06.7 -00.1	155 20.0 +02.2	S 19 18.3 -00.1	22						22
23	77 36.9 +01.1	N 17 09.7 +00.4	165 13.5 +01.9	S 18 06.6 -00.2	170 22.2 +02.2	S 19 18.2 +00.0	23						23
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 00'3 00'3 00'3 00'3 00'3 00'3		SD 00'1 00'1 00'1 00'1 00'1 00'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0								
	SHA 320° 320° 320° 319° 319° 319°		SHA 047° 047° 047° 047° 047° 047°		SHA 052° 052° 052° 052° 052° 052°								
	Greenwich Culmination Time: 17:49		Greenwich Culmination Time: 12:00		Greenwich Culmination Time: 11:40								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 33.5 +00.0	S 16 31.1 -00.7	189 12.4 -00.8	S 20 26.4 -00.6	291 50.2 -29.8	S 04 27.5 +14.7	00						
01	191 33.5 -00.1	S 16 30.4 -00.7	204 11.6 -00.8	S 20 25.8 -00.6	306 20.4 -29.9	S 04 42.2 +14.7	01						
02	206 33.4 -00.1	S 16 29.7 -00.8	219 10.8 -00.8	S 20 25.2 -00.6	320 50.5 -29.8	S 04 56.9 +14.7	02						
03	221 33.3 +00.0	S 16 28.9 -00.7	234 10.0 -00.8	S 20 24.6 -00.6	335 20.7 -29.9	S 05 11.6 +14.6	03						
04	236 33.3 -00.1	S 16 28.2 -00.7	249 09.2 -00.9	S 20 24.0 -00.6	349 50.8 -29.9	S 05 26.2 +14.6	04						
05	251 33.2 -00.1	S 16 27.5 -00.8	264 08.3 -00.8	S 20 23.4 -00.7	4 20.9 -30.0	S 05 40.8 +14.6	05						
06	266 33.1 +00.0	S 16 26.7 -00.7	279 07.5 -00.8	S 20 22.7 -00.6	18 50.9 -30.0	S 05 55.4 +14.5	06						
07	281 33.1 -00.1	S 16 26.0 -00.8	294 06.7 -00.8	S 20 22.1 -00.6	33 20.9 -30.0	S 06 09.9 +14.5	07						
08	296 33.0 -00.1	S 16 25.2 -00.7	309 05.9 -00.8	S 20 21.5 -00.6	47 50.9 -30.0	S 06 24.4 +14.5	08						
09	311 32.9 +00.0	S 16 24.5 -00.7	324 05.1 -00.8	S 20 20.9 -00.7	62 20.9 -30.1	S 06 38.9 +14.4	09						
10	326 32.9 -00.1	S 16 23.8 -00.8	339 04.3 -00.8	S 20 20.2 -00.6	76 50.8 -30.1	S 06 53.3 +14.4	10						
11	341 32.8 -00.1	S 16 23.0 -00.7	354 03.5 -00.8	S 20 19.6 -00.6	91 20.7 -30.1	S 07 07.7 +14.4	11						
12	356 32.7 +00.0	S 16 22.3 -00.8	9 02.7 -00.8	S 20 19.0 -00.6	105 50.6 -30.2	S 07 22.1 +14.3	12						
13	11 32.7 -00.1	S 16 21.5 -00.7	24 01.9 -00.9	S 20 18.4 -00.7	120 20.4 -30.2	S 07 36.4 +14.3	13						
14	26 32.6 +00.0	S 16 20.8 -00.7	39 01.0 -00.8	S 20 17.7 -00.6	134 50.2 -30.3	S 07 50.7 +14.2	14						
15	41 32.6 -00.1	S 16 20.1 -00.8	54 00.2 -00.8	S 20 17.1 -00.6	149 19.9 -30.3	S 08 04.9 +14.2	15						
16	56 32.5 -00.1	S 16 19.3 -00.7	68 59.4 -00.8	S 20 16.5 -00.6	163 49.6 -30.3	S 08 19.1 +14.2	16						
17	71 32.4 +00.0	S 16 18.6 -00.8	83 58.6 -00.8	S 20 15.9 -00.7	178 19.3 -30.3	S 08 33.3 +14.1	17						
18	86 32.4 -00.1	S 16 17.8 -00.7	98 57.8 -00.8	S 20 15.2 -00.6	192 49.0 -30.4	S 08 47.4 +14.0	18						
19	101 32.3 +00.0	S 16 17.1 -00.8	113 57.0 -00.8	S 20 14.6 -00.6	207 18.6 -30.5	S 09 01.4 +14.1	19						
20	116 32.3 -00.1	S 16 16.3 -00.7	128 56.2 -00.8	S 20 14.0 -00.7	221 48.1 -30.5	S 09 15.5 +13.9	20						
21	131 32.2 -00.1	S 16 15.6 -00.8	143 55.4 -00.8	S 20 13.3 -00.6	236 17.6 -30.5	S 09 29.4 +13.9	21						
22	146 32.1 +00.0	S 16 14.8 -00.7	158 54.6 -00.8	S 20 12.7 -00.7	250 47.1 -30.6	S 09 43.3 +13.9	22						
23	161 32.1 -00.1	S 16 14.1 -00.8	173 53.8 -00.8	S 20 12.0 -00.6	265 16.5 -30.6	S 09 57.2 +13.8	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'2 16'2 16'2 16'2 16'2 16'2		SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 16'1 16'1 16'1 16'1 16'1 16'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 59'2 59'2 59'2 59'2 59'2 59'2								
	SHA 043° 043° 043° 043° 042° 042°		SHA 056° 055° 055° 055° 055° 055°		SHA 157° 155° 153° 151° 149° 146°								
	Greenwich Culmination Time: 12:13		Greenwich Culmination Time: 11:23		Greenwich Culmination Time: 04:42								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	92 38.0 +01.1	N 17 10.1 +00.4	180 15.4 +01.8	S 18 06.4 -00.2	185 24.4 +02.1	S 19 18.2 -00.1	00						
01	107 39.1 +01.2	N 17 10.5 +00.5	195 17.2 +01.9	S 18 06.2 -00.1	200 26.5 +02.2	S 19 18.1 -00.1	01						
02	122 40.3 +01.1	N 17 11.0 +00.4	210 19.1 +01.8	S 18 06.1 -00.2	215 28.7 +02.1	S 19 18.0 +00.0	02						
03	137 41.4 +01.1	N 17 11.4 +00.4	225 20.9 +01.9	S 18 05.9 -00.1	230 30.8 +02.2	S 19 18.0 -00.1	03						
04	152 42.5 +01.1	N 17 11.8 +00.4	240 22.8 +01.9	S 18 05.8 -00.2	245 33.0 +02.1	S 19 17.9 -00.1	04						
05	167 43.6 +01.2	N 17 12.2 +00.5	255 24.7 +01.8	S 18 05.6 -00.1	260 35.1 +02.2	S 19 17.8 -00.1	05						
06	182 44.8 +01.1	N 17 12.7 +00.4	270 26.5 +01.9	S 18 05.5 -00.2	275 37.3 +02.2	S 19 17.7 +00.0	06						
07	197 45.9 +01.1	N 17 13.1 +00.4	285 28.4 +01.9	S 18 05.3 -00.2	290 39.5 +02.1	S 19 17.7 -00.1	07						
08	212 47.0 +01.1	N 17 13.5 +00.4	300 30.3 +01.8	S 18 05.1 -00.1	305 41.6 +02.2	S 19 17.6 -00.1	08						
09	227 48.1 +01.2	N 17 13.9 +00.5	315 32.1 +01.9	S 18 05.0 -00.2	320 43.8 +02.1	S 19 17.5 +00.0	09						
10	242 49.3 +01.1	N 17 14.4 +00.4	330 34.0 +01.8	S 18 04.8 -00.1	335 45.9 +02.2	S 19 17.5 -00.1	10						
11	257 50.4 +01.1	N 17 14.8 +00.4	345 35.8 +01.9	S 18 04.7 -00.2	350 48.1 +02.2	S 19 17.4 -00.1	11						
12	272 51.5 +01.1	N 17 15.2 +00.4	0 37.7 +01.9	S 18 04.5 -00.2	5 50.3 +02.1	S 19 17.3 +00.0	12						
13	287 52.6 +01.2	N 17 15.6 +00.4	15 39.6 +01.8	S 18 04.3 -00.1	20 52.4 +02.2	S 19 17.3 -00.1	13						
14	302 53.8 +01.1	N 17 16.0 +00.5	30 41.4 +01.9	S 18 04.2 -00.2	35 54.6 +02.1	S 19 17.2 -00.1	14						
15	317 54.9 +01.1	N 17 16.5 +00.4	45 43.3 +01.9	S 18 04.0 -00.1	50 56.7 +02.2	S 19 17.1 +00.0	15						
16	332 56.0 +01.1	N 17 16.9 +00.4	60 45.2 +01.8	S 18 03.9 -00.2	65 58.9 +02.2	S 19 17.1 -00.1	16						
17	347 57.1 +01.2	N 17 17.3 +00.4	75 47.0 +01.9	S 18 03.7 -00.1	81 01.1 +02.1	S 19 17.0 -00.1	17						
18	2 58.3 +01.1	N 17 17.7 +00.5	90 48.9 +01.8	S 18 03.6 -00.2	96 03.2 +02.2	S 19 16.9 -00.1	18						
19	17 59.4 +01.1	N 17 18.2 +00.4	105 50.7 +01.9	S 18 03.4 -00.2	111 05.4 +02.1	S 19 16.8 +00.0	19						
20	33 00.5 +01.1	N 17 18.6 +00.4	120 52.6 +01.9	S 18 03.2 -00.1	126 07.5 +02.2	S 19 16.8 -00.1	20						
21	48 01.6 +01.1	N 17 19.0 +00.4	135 54.5 +01.8	S 18 03.1 -00.2	141 09.7 +02.2	S 19 16.7 -00.1	21						
22	63 02.7 +01.2	N 17 19.4 +00.4	150 56.3 +01.9	S 18 02.9 -00.1	156 11.9 +02.1	S 19 16.6 +00.0	22						
23	78 03.9 +01.1	N 17 19.8 +00.5	165 58.2 +01.9	S 18 02.8 -00.2	171 14.0 +02.2	S 19 16.6 -00.1	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 00'3 00'3 00'3 00'3 00'3 00'3		SD 00'1 00'1 00'1 00'1 00'1 00'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0								
	SHA 319° 319° 319° 319° 319° 319°		SHA 047° 047° 047° 047° 047° 047°		SHA 052° 052° 052° 052° 052° 052°								
	Greenwich Culmination Time: 17:48		Greenwich Culmination Time: 11:57		Greenwich Culmination Time: 11:36								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 32.0 +00.0	S 16 13.3 -00.7	188 53.0 -00.8	S 20 11.4 -00.6	279 45.9 -30.7	S 10 11.0 +13.7	00						
01	191 32.0 -00.1	S 16 12.6 -00.7	203 52.2 -00.8	S 20 10.8 -00.7	294 15.2 -30.7	S 10 24.7 +13.7	01						
02	206 31.9 -00.1	S 16 11.9 -00.8	218 51.4 -00.8	S 20 10.1 -00.6	308 44.5 -30.7	S 10 38.4 +13.6	02						
03	221 31.8 +00.0	S 16 11.1 -00.7	233 50.6 -00.8	S 20 09.5 -00.7	323 13.8 -30.9	S 10 52.0 +13.6	03						
04	236 31.8 -00.1	S 16 10.4 -00.8	248 49.8 -00.8	S 20 08.8 -00.6	337 42.9 -30.8	S 11 05.6 +13.5	04						
05	251 31.7 +00.0	S 16 09.6 -00.7	263 49.0 -00.8	S 20 08.2 -00.6	352 12.1 -30.9	S 11 19.1 +13.4	05						
06	266 31.7 -00.1	S 16 08.9 -00.8	278 48.2 -00.8	S 20 07.6 -00.7	6 41.2 -31.0	S 11 32.5 +13.4	06						
07	281 31.6 +00.0	S 16 08.1 -00.7	293 47.4 -00.8	S 20 06.9 -00.6	21 10.2 -31.0	S 11 45.9 +13.3	07						
08	296 31.6 -00.1	S 16 07.4 -00.8	308 46.6 -00.8	S 20 06.3 -00.7	35 39.2 -31.1	S 11 59.2 +13.3	08						
09	311 31.5 -00.1	S 16 06.6 -00.8	323 45.8 -00.8	S 20 05.6 -00.6	50 08.1 -31.1	S 12 12.5 +13.1	09						
10	326 31.4 +00.0	S 16 05.8 -00.7	338 45.0 -00.8	S 20 05.0 -00.7	64 37.0 -31.1	S 12 25.6 +13.1	10						
11	341 31.4 -00.1	S 16 05.1 -00.8	353 44.2 -00.8	S 20 04.3 -00.6	79 05.9 -31.3	S 12 38.7 +13.1	11						
12	356 31.3 +00.0	S 16 04.3 -00.7	8 43.4 -00.8	S 20 03.7 -00.7	93 34.6 -31.2	S 12 51.8 +12.9	12						
13	11 31.3 -00.1	S 16 03.6 -00.8	23 42.6 -00.8	S 20 03.0 -00.6	108 03.4 -31.4	S 13 04.7 +12.9	13						
14	26 31.2 +00.0	S 16 02.8 -00.7	38 41.8 -00.8	S 20 02.4 -00.7	122 32.0 -31.4	S 13 17.6 +12.8	14						
15	41 31.2 -00.1	S 16 02.1 -00.8	53 41.0 -00.8	S 20 01.7 -00.6	137 00.6 -31.4	S 13 30.4 +12.8	15						
16	56 31.1 +00.0	S 16 01.3 -00.7	68 40.2 -00.8	S 20 01.1 -00.7	151 29.2 -31.5	S 13 43.2 +12.6	16						
17	71 31.1 -00.1	S 16 00.6 -00.8	83 39.4 -00.8	S 20 00.4 -00.6	165 57.7 -31.6	S 13 55.8 +12.6	17						
18	86 31.0 +00.0	S 15 59.8 -00.7	98 38.6 -00.8	S 19 59.8 -00.7	180 26.1 -31.6	S 14 08.4 +12.5	18						
19	101 31.0 -00.1	S 15 59.1 -00.8	113 37.8 -00.8	S 19 59.1 -00.7	194 54.5 -31.7	S 14 20.9 +12.4	19						
20	116 30.9 +00.0	S 15 58.3 -00.8	128 37.0 -00.8	S 19 58.4 -00.6	209 22.8 -31.8	S 14 33.3 +12.3	20						
21	131 30.9 -00.1	S 15 57.5 -00.7	143 36.2 -00.8	S 19 57.8 -00.7	223 51.0 -31.8	S 14 45.6 +12.3	21						
22	146 30.8 +00.0	S 15 56.8 -00.8	158 35.4 -00.8	S 19 57.1 -00.6	238 19.2 -31.8	S 14 57.9 +12.1	22						
23	161 30.8 -00.1	S 15 56.0 -00.7	173 34.6 -00.8	S 19 56.5 -00.7	252 47.4 -32.0	S 15 10.0 +12.1	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'2 16'2 16'2 16'2 16'2 16'2		SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 16'1 16'1 16'1 16'1 16'1 16'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 59'2 59'2 59'2 59'2 59'2 59'2								
	SHA 042° 042° 042° 042° 041° 041°		SHA 054° 054° 054° 054° 054° 053°		SHA 144° 142° 140° 138° 135° 133°								
	Greenwich Culmination Time: 12:13		Greenwich Culmination Time: 11:25		Greenwich Culmination Time: 05:32								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	93 05.0 +01.1	N 17 20.3 +00.4	181 00.1 +01.8	S 18 02.6 -00.2	186 16.2 +02.2	S 19 16.5 -00.1	00						
01	108 06.1 +01.1	N 17 20.7 +00.4	196 01.9 +01.9	S 18 02.4 -00.1	201 18.4 +02.1	S 19 16.4 +00.0	01						
02	123 07.2 +01.1	N 17 21.1 +00.4	211 03.8 +01.8	S 18 02.3 -00.2	216 20.5 +02.2	S 19 16.4 -00.1	02						
03	138 08.3 +01.2	N 17 21.5 +00.5	226 05.6 +01.9	S 18 02.1 -00.1	231 22.7 +02.1	S 19 16.3 -00.1	03						
04	153 09.5 +01.1	N 17 22.0 +00.4	241 07.5 +01.9	S 18 02.0 -00.2	246 24.8 +02.2	S 19 16.2 +00.0	04						
05	168 10.6 +01.1	N 17 22.4 +00.4	256 09.4 +01.8	S 18 01.8 -00.1	261 27.0 +02.2	S 19 16.2 -00.1	05						
06	183 11.7 +01.1	N 17 22.8 +00.4	271 11.2 +01.9	S 18 01.7 -00.2	276 29.2 +02.1	S 19 16.1 -00.1	06						
07	198 12.8 +01.1	N 17 23.2 +00.4	286 13.1 +01.9	S 18 01.5 -00.2	291 31.3 +02.2	S 19 16.0 -00.1	07						
08	213 13.9 +01.1	N 17 23.6 +00.5	301 15.0 +01.8	S 18 01.3 -00.1	306 33.5 +02.1	S 19 15.9 +00.0	08						
09	228 15.0 +01.2	N 17 24.1 +00.4	316 16.8 +01.9	S 18 01.2 -00.2	321 35.6 +02.2	S 19 15.9 -00.1	09						
10	243 16.2 +01.1	N 17 24.5 +00.4	331 18.7 +01.8	S 18 01.0 -00.1	336 37.8 +02.2	S 19 15.8 -00.1	10						
11	258 17.3 +01.1	N 17 24.9 +00.4	346 20.5 +01.9	S 18 00.9 -00.2	351 40.0 +02.1	S 19 15.7 +00.0	11						
12	273 18.4 +01.1	N 17 25.3 +00.4	1 22.4 +01.9	S 18 00.7 -00.2	6 42.1 +02.2	S 19 15.7 -00.1	12						
13	288 19.5 +01.1	N 17 25.7 +00.5	16 24.3 +01.8	S 18 00.5 -00.1	21 44.3 +02.1	S 19 15.6 -00.1	13						
14	303 20.6 +01.1	N 17 26.2 +00.4	31 26.1 +01.9	S 18 00.4 -00.2	36 46.4 +02.2	S 19 15.5 +00.0	14						
15	318 21.7 +01.2	N 17 26.6 +00.4	46 28.0 +01.9	S 18 00.2 -00.1	51 48.6 +02.2	S 19 15.5 -00.1	15						
16	333 22.9 +01.1	N 17 27.0 +00.4	61 29.9 +01.8	S 18 00.1 -00.2	66 50.8 +02.1	S 19 15.4 -00.1	16						
17	348 24.0 +01.1	N 17 27.4 +00.4	76 31.7 +01.9	S 17 59.9 -00.1	81 52.9 +02.2	S 19 15.3 +00.0	17						
18	3 25.1 +01.1	N 17 27.8 +00.5	91 33.6 +01.9	S 17 59.8 -00.2	96 55.1 +02.1	S 19 15.3 -00.1	18						
19	18 26.2 +01.1	N 17 28.3 +00.4	106 35.5 +01.8	S 17 59.6 -00.2	111 57.2 +02.2	S 19 15.2 -00.1	19						
20	33 27.3 +01.1	N 17 28.7 +00.4	121 37.3 +01.9	S 17 59.4 -00.1	126 59.4 +02.2	S 19 15.1 -00.1	20						
21	48 28.4 +01.1	N 17 29.1 +00.4	136 39.2 +01.8	S 17 59.3 -00.2	142 01.6 +02.1	S 19 15.0 +00.0	21						
22	63 29.5 +01.2	N 17 29.5 +00.4	151 41.0 +01.9	S 17 59.1 -00.1	157 03.7 +02.2	S 19 15.0 -00.1	22						
23	78 30.7 +01.1	N 17 29.9 +00.5	166 42.9 +01.9	S 17 59.0 -00.2	172 05.9 +02.1	S 19 14.9 -00.1	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 00'3 00'3 00'3 00'3 00'3 00'3		SD 00'1 00'1 00'1 00'1 00'1 00'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0								
	SHA 319° 319° 318° 318° 318° 318°		SHA 047° 047° 047° 046° 046° 046°		SHA 052° 052° 052° 052° 052° 052°								
	Greenwich Culmination Time: 17:46		Greenwich Culmination Time: 11:54		Greenwich Culmination Time: 11:33								

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 30.7 -00.1	S	15 55.3 -00.8	188 33.8 -00.8	S	19 55.8 -00.7	267 15.4 -32.0	S	15 22.1 +12.0	00			
01	191 30.6 +00.0	S	15 54.5 -00.8	203 33.0 -00.8	S	19 55.1 -00.6	281 43.4 -32.0	S	15 34.1 +11.9	01			
02	206 30.6 -00.1	S	15 53.7 -00.7	218 32.2 -00.8	S	19 54.5 -00.7	296 11.4 -32.1	S	15 46.0 +11.8	02			
03	221 30.5 +00.0	S	15 53.0 -00.8	233 31.4 -00.8	S	19 53.8 -00.7	310 39.3 -32.2	S	15 57.8 +11.7	03			
04	236 30.5 -00.1	S	15 52.2 -00.7	248 30.6 -00.8	S	19 53.1 -00.6	325 07.1 -32.3	S	16 09.5 +11.6	04			
05	251 30.4 +00.0	S	15 51.5 -00.8	263 29.8 -00.7	S	19 52.5 -00.7	339 34.8 -32.3	S	16 21.1 +11.5	05			
06	266 30.4 +00.0	S	15 50.7 -00.8	278 29.1 -00.8	S	19 51.8 -00.7	354 02.5 -32.4	S	16 32.6 +11.4	06			
07	281 30.4 -00.1	S	15 49.9 -00.7	293 28.3 -00.8	S	19 51.1 -00.6	8 30.1 -32.4	S	16 44.0 +11.3	07			
08	296 30.3 +00.0	S	15 49.2 -00.8	308 27.5 -00.8	S	19 50.5 -00.7	22 57.7 -32.5	S	16 55.3 +11.2	08			
09	311 30.3 -00.1	S	15 48.4 -00.7	323 26.7 -00.8	S	19 49.8 -00.7	37 25.2 -32.6	S	17 06.5 +11.1	09			
10	326 30.2 +00.0	S	15 47.7 -00.8	338 25.9 -00.8	S	19 49.1 -00.7	51 52.6 -32.6	S	17 17.6 +11.0	10			
11	341 30.2 -00.1	S	15 46.9 -00.8	353 25.1 -00.8	S	19 48.4 -00.6	66 20.0 -32.7	S	17 28.6 +10.9	11			
12	356 30.1 +00.0	S	15 46.1 -00.7	8 24.3 -00.8	S	19 47.8 -00.7	80 47.3 -32.8	S	17 39.5 +10.8	12			
13	11 30.1 -00.1	S	15 45.4 -00.8	23 23.5 -00.8	S	19 47.1 -00.7	95 14.5 -32.8	S	17 50.3 +10.7	13			
14	26 30.0 +00.0	S	15 44.6 -00.8	38 22.7 -00.7	S	19 46.4 -00.7	109 41.7 -32.9	S	18 01.0 +10.6	14			
15	41 30.0 -00.1	S	15 43.8 -00.7	53 22.0 -00.8	S	19 45.7 -00.7	124 08.8 -32.9	S	18 11.6 +10.5	15			
16	56 29.9 +00.0	S	15 43.1 -00.8	68 21.2 -00.8	S	19 45.0 -00.6	138 35.9 -33.1	S	18 22.1 +10.3	16			
17	71 29.9 -00.1	S	15 42.3 -00.8	83 20.4 -00.8	S	19 44.4 -00.7	153 02.8 -33.1	S	18 32.4 +10.3	17			
18	86 29.8 +00.0	S	15 41.5 -00.7	98 19.6 -00.8	S	19 43.7 -00.7	167 29.7 -33.1	S	18 42.7 +10.1	18			
19	101 29.8 +00.0	S	15 40.8 -00.8	113 18.8 -00.8	S	19 43.0 -00.7	181 56.6 -33.2	S	18 52.8 +10.0	19			
20	116 29.8 -00.1	S	15 40.0 -00.8	128 18.0 -00.8	S	19 42.3 -00.7	196 23.4 -33.3	S	19 02.8 +09.9	20			
21	131 29.7 +00.0	S	15 39.2 -00.7	143 17.2 -00.7	S	19 41.6 -00.6	210 50.1 -33.4	S	19 12.7 +09.8	21			
22	146 29.7 -00.1	S	15 38.5 -00.8	158 16.5 -00.8	S	19 41.0 -00.7	225 16.7 -33.4	S	19 22.5 +09.7	22			
23	161 29.6 +00.0	S	15 37.7 -00.8	173 15.7 -00.8	S	19 40.3 -00.7	239 43.3 -33.5	S	19 32.2 +09.5	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'1 16'1 16'1 16'1 16'1 16'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 59'2 59'1 59'1 59'1 59'1 59'0						
	SHA 041° 041° 041° 041° 040° 040°			SHA 053° 053° 053° 052° 052° 052°			SHA 131° 128° 126° 124° 121° 119°						
	Greenwich Culmination Time: 12:13			Greenwich Culmination Time: 11:26			Greenwich Culmination Time: 06:24						

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	93 31.8 +01.1	N	17 30.4 +00.4	181 44.8 +01.8	S	17 58.8 -00.2	187 08.0 +02.2	S	19 14.8 +00.0	00			
01	108 32.9 +01.1	N	17 30.8 +00.4	196 46.6 +01.9	S	17 58.6 -00.1	202 10.2 +02.2	S	19 14.8 -00.1	01			
02	123 34.0 +01.1	N	17 31.2 +00.4	211 48.5 +01.9	S	17 58.5 -00.2	217 12.4 +02.1	S	19 14.7 -00.1	02			
03	138 35.1 +01.1	N	17 31.6 +00.4	226 50.4 +01.8	S	17 58.3 -00.1	232 14.5 +02.2	S	19 14.6 +00.0	03			
04	153 36.2 +01.1	N	17 32.0 +00.5	241 52.2 +01.9	S	17 58.2 -00.2	247 16.7 +02.2	S	19 14.6 -00.1	04			
05	168 37.3 +01.1	N	17 32.5 +00.4	256 54.1 +01.9	S	17 58.0 -00.2	262 18.9 +02.1	S	19 14.5 -00.1	05			
06	183 38.4 +01.1	N	17 32.9 +00.4	271 56.0 +01.8	S	17 57.8 -00.1	277 21.0 +02.2	S	19 14.4 +00.0	06			
07	198 39.5 +01.2	N	17 33.3 +00.4	286 57.8 +01.9	S	17 57.7 -00.2	292 23.2 +02.1	S	19 14.4 -00.1	07			
08	213 40.7 +01.1	N	17 33.7 +00.4	301 59.7 +01.8	S	17 57.5 -00.1	307 25.3 +02.2	S	19 14.3 -00.1	08			
09	228 41.8 +01.1	N	17 34.1 +00.5	317 01.5 +01.9	S	17 57.4 -00.2	322 27.5 +02.2	S	19 14.2 -00.1	09			
10	243 42.9 +01.1	N	17 34.6 +00.4	332 03.4 +01.9	S	17 57.2 -00.2	337 29.7 +02.1	S	19 14.1 +00.0	10			
11	258 44.0 +01.1	N	17 35.0 +00.4	347 05.3 +01.8	S	17 57.0 -00.1	352 31.8 +02.2	S	19 14.1 -00.1	11			
12	273 45.1 +01.1	N	17 35.4 +00.4	2 07.1 +01.9	S	17 56.9 -00.2	7 34.0 +02.1	S	19 14.0 -00.1	12			
13	288 46.2 +01.1	N	17 35.8 +00.4	17 09.0 +01.9	S	17 56.7 -00.1	22 36.1 +02.2	S	19 13.9 +00.0	13			
14	303 47.3 +01.1	N	17 36.2 +00.4	32 10.9 +01.8	S	17 56.6 -00.2	37 38.3 +02.2	S	19 13.9 -00.1	14			
15	318 48.4 +01.1	N	17 36.6 +00.5	47 12.7 +01.9	S	17 56.4 -00.1	52 40.5 +02.1	S	19 13.8 -00.1	15			
16	333 49.5 +01.1	N	17 37.1 +00.4	62 14.6 +01.9	S	17 56.3 -00.2	67 42.6 +02.2	S	19 13.7 +00.0	16			
17	348 50.6 +01.1	N	17 37.5 +00.4	77 16.5 +01.8	S	17 56.1 -00.2	82 44.8 +02.1	S	19 13.7 -00.1	17			
18	3 51.7 +01.1	N	17 37.9 +00.4	92 18.3 +01.9	S	17 55.9 -00.1	97 46.9 +02.2	S	19 13.6 -00.1	18			
19	18 52.8 +01.2	N	17 38.3 +00.4	107 20.2 +01.8	S	17 55.8 -00.2	112 49.1 +02.2	S	19 13.5 -00.1	19			
20	33 54.0 +01.1	N	17 38.7 +00.5	122 22.0 +01.9	S	17 55.6 -00.1	127 51.3 +02.1	S	19 13.4 +00.0	20			
21	48 55.1 +01.1	N	17 39.2 +00.4	137 23.9 +01.9	S	17 55.5 -00.2	142 53.4 +02.2	S	19 13.4 -00.1	21			
22	63 56.2 +01.1	N	17 39.6 +00.4	152 25.8 +01.8	S	17 55.3 -00.2	157 55.6 +02.2	S	19 13.3 -00.1	22			
23	78 57.3 +01.1	N	17 40.0 +00.4	167 27.6 +01.9	S	17 55.1 -00.1	172 57.8 +02.1	S	19 13.2 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 318° 318° 318° 318° 318° 318°			SHA 046° 046° 046° 046° 046° 046°			SHA 052° 052° 052° 052° 052° 052°						
	Greenwich Culmination Time: 17:44			Greenwich Culmination Time: 11:51			Greenwich Culmination Time: 11:29						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 29.6 -00.1	S	15 36.9 -00.8	188 14.9 -00.8	S	19 39.6 -00.7	254 09.8 -33.5	S	19 41.7 +09.5	00			
01	191 29.5 +00.0	S	15 36.1 -00.7	203 14.1 -00.8	S	19 38.9 -00.7	268 36.3 -33.7	S	19 51.2 +09.3	01			
02	206 29.5 +00.0	S	15 35.4 -00.8	218 13.3 -00.7	S	19 38.2 -00.7	283 02.6 -33.6	S	20 00.5 +09.1	02			
03	221 29.5 -00.1	S	15 34.6 -00.8	233 12.6 -00.8	S	19 37.5 -00.7	297 29.0 -33.8	S	20 09.6 +09.1	03			
04	236 29.4 +00.0	S	15 33.8 -00.7	248 11.8 -00.8	S	19 36.8 -00.7	311 55.2 -33.8	S	20 18.7 +08.9	04			
05	251 29.4 -00.1	S	15 33.1 -00.8	263 11.0 -00.8	S	19 36.1 -00.7	326 21.4 -33.8	S	20 27.6 +08.8	05			
06	266 29.3 +00.0	S	15 32.3 -00.8	278 10.2 -00.8	S	19 35.4 -00.7	340 47.6 -34.0	S	20 36.4 +08.7	06			
07	281 29.3 -00.1	S	15 31.5 -00.8	293 09.4 -00.7	S	19 34.7 -00.6	355 13.6 -34.0	S	20 45.1 +08.5	07			
08	296 29.2 +00.0	S	15 30.7 -00.7	308 08.7 -00.8	S	19 34.1 -00.7	9 39.6 -34.0	S	20 53.6 +08.5	08			
09	311 29.2 +00.0	S	15 30.0 -00.8	323 07.9 -00.8	S	19 33.4 -00.7	24 05.6 -34.1	S	21 02.1 +08.2	09			
10	326 29.2 -00.1	S	15 29.2 -00.8	338 07.1 -00.8	S	19 32.7 -00.7	38 31.5 -34.2	S	21 10.3 +08.2	10			
11	341 29.1 +00.0	S	15 28.4 -00.8	353 06.3 -00.7	S	19 32.0 -00.7	52 57.3 -34.2	S	21 18.5 +08.0	11			
12	356 29.1 +00.0	S	15 27.6 -00.7	8 05.6 -00.8	S	19 31.3 -00.7	67 23.1 -34.3	S	21 26.5 +07.9	12			
13	11 29.1 -00.1	S	15 26.9 -00.8	23 04.8 -00.8	S	19 30.6 -00.7	81 48.8 -34.4	S	21 34.4 +07.7	13			
14	26 29.0 +00.0	S	15 26.1 -00.8	38 04.0 -00.8	S	19 29.9 -00.7	96 14.4 -34.4	S	21 42.1 +07.6	14			
15	41 29.0 -00.1	S	15 25.3 -00.8	53 03.2 -00.7	S	19 29.2 -00.7	110 40.0 -34.4	S	21 49.7 +07.5	15			
16	56 28.9 +00.0	S	15 24.5 -00.8	68 02.5 -00.8	S	19 28.5 -00.7	125 05.6 -34.5	S	21 57.2 +07.3	16			
17	71 28.9 +00.0	S	15 23.7 -00.7	83 01.7 -00.8	S	19 27.8 -00.8	139 31.1 -34.6	S	22 04.5 +07.2	17			
18	86 28.9 -00.1	S	15 23.0 -00.8	98 00.9 -00.8	S	19 27.0 -00.7	153 56.5 -34.6	S	22 11.7 +07.0	18			
19	101 28.8 +00.0	S	15 22.2 -00.8	113 00.1 -00.7	S	19 26.3 -00.7	168 21.9 -34.7	S	22 18.7 +06.9	19			
20	116 28.8 +00.0	S	15 21.4 -00.8	127 59.4 -00.8	S	19 25.6 -00.7	182 47.2 -34.7	S	22 25.6 +06.8	20			
21	131 28.8 -00.1	S	15 20.6 -00.7	142 58.6 -00.8	S	19 24.9 -00.7	197 12.5 -34.8	S	22 32.4 +06.6	21			
22	146 28.7 +00.0	S	15 19.9 -00.8	157 57.8 -00.8	S	19 24.2 -00.7	211 37.7 -34.8	S	22 39.0 +06.4	22			
23	161 28.7 +00.0	S	15 19.1 -00.8	172 57.0 -00.7	S	19 23.5 -00.7	226 02.9 -34.9	S	22 45.4 +06.4	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'1 16'1 16'1 16'1 16'0 16'0						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 59'0 59'0 59'0 58'9 58'9 58'9						
	SHA 040° 040° 040° 040° 039° 039°			SHA 052° 052° 051° 051° 051° 051°			SHA 117° 114° 112° 109° 107° 104°						
	Greenwich Culmination Time: 12:14			Greenwich Culmination Time: 11:27			Greenwich Culmination Time: 07:19						

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	93 58.4 +01.1	N	17 40.4 +00.4	182 29.5 +01.9	S	17 55.0 -00.2	187 59.9 +02.2	S	19 13.2 -00.1	00			
01	108 59.5 +01.1	N	17 40.8 +00.4	197 31.4 +01.8	S	17 54.8 -00.1	203 02.1 +02.1	S	19 13.1 -00.1	01			
02	124 00.6 +01.1	N	17 41.2 +00.5	212 33.2 +01.9	S	17 54.7 -00.2	218 04.2 +02.2	S	19 13.0 +00.0	02			
03	139 01.7 +01.1	N	17 41.7 +00.4	227 35.1 +01.9	S	17 54.5 -00.2	233 06.4 +02.2	S	19 13.0 -00.1	03			
04	154 02.8 +01.1	N	17 42.1 +00.4	242 37.0 +01.8	S	17 54.3 -00.1	248 08.6 +02.1	S	19 12.9 -00.1	04			
05	169 03.9 +01.1	N	17 42.5 +00.4	257 38.8 +01.9	S	17 54.2 -00.2	263 10.7 +02.2	S	19 12.8 +00.0	05			
06	184 05.0 +01.1	N	17 42.9 +00.4	272 40.7 +01.9	S	17 54.0 -00.1	278 12.9 +02.1	S	19 12.8 -00.1	06			
07	199 06.1 +01.1	N	17 43.3 +00.4	287 42.6 +01.8	S	17 53.9 -00.2	293 15.0 +02.2	S	19 12.7 -00.1	07			
08	214 07.2 +01.1	N	17 43.7 +00.5	302 44.4 +01.9	S	17 53.7 -00.2	308 17.2 +02.2	S	19 12.6 -00.1	08			
09	229 08.3 +01.1	N	17 44.2 +00.4	317 46.3 +01.8	S	17 53.5 -00.1	323 19.4 +02.1	S	19 12.5 +00.0	09			
10	244 09.4 +01.1	N	17 44.6 +00.4	332 48.1 +01.9	S	17 53.4 -00.2	338 21.5 +02.2	S	19 12.5 -00.1	10			
11	259 10.5 +01.1	N	17 45.0 +00.4	347 50.0 +01.9	S	17 53.2 -00.1	353 23.7 +02.2	S	19 12.4 -00.1	11			
12	274 11.6 +01.1	N	17 45.4 +00.4	2 51.9 +01.8	S	17 53.1 -00.2	8 25.9 +02.1	S	19 12.3 +00.0	12			
13	289 12.7 +01.1	N	17 45.8 +00.4	17 53.7 +01.9	S	17 52.9 -00.2	23 28.0 +02.2	S	19 12.3 -00.1	13			
14	304 13.8 +01.1	N	17 46.2 +00.4	32 55.6 +01.9	S	17 52.7 -00.1	38 30.2 +02.1	S	19 12.2 -00.1	14			
15	319 14.9 +01.1	N	17 46.6 +00.5	47 57.5 +01.8	S	17 52.6 -00.2	53 32.3 +02.2	S	19 12.1 +00.0	15			
16	334 16.0 +01.1	N	17 47.1 +00.4	62 59.3 +01.9	S	17 52.4 -00.1	68 34.5 +02.2	S	19 12.1 -00.1	16			
17	349 17.1 +01.1	N	17 47.5 +00.4	78 01.2 +01.9	S	17 52.3 -00.2	83 36.7 +02.1	S	19 12.0 -00.1	17			
18	4 18.2 +01.1	N	17 47.9 +00.4	93 03.1 +01.8	S	17 52.1 -00.2	98 38.8 +02.2	S	19 11.9 +00.0	18			
19	19 19.3 +01.1	N	17 48.3 +00.4	108 04.9 +01.9	S	17 51.9 -00.1	113 41.0 +02.2	S	19 11.9 -00.1	19			
20	34 20.4 +01.1	N	17 48.7 +00.4	123 06.8 +01.9	S	17 51.8 -00.2	128 43.2 +02.1	S	19 11.8 -00.1	20			
21	49 21.5 +01.1	N	17 49.1 +00.5	138 08.7 +01.8	S	17 51.6 -00.1	143 45.3 +02.2	S	19 11.7 -00.1	21			
22	64 22.6 +01.1	N	17 49.6 +00.4	153 10.5 +01.9	S	17 51.5 -00.2	158 47.5 +02.1	S	19 11.6 +00.0	22			
23	79 23.7 +01.1	N	17 50.0 +00.4	168 12.4 +01.9	S	17 51.3 -00.2	173 49.6 +02.2	S	19 11.6 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 318° 317° 317° 317° 317° 317°			SHA 046° 046° 046° 046° 046° 046°			SHA 052° 052° 052° 052° 052° 052°						
	Greenwich Culmination Time: 17:42			Greenwich Culmination Time: 11:48			Greenwich Culmination Time: 11:26						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 28.7 -00.1	S	15 18.3 -00.8	187 56.3 -00.8	S	19 22.8 -00.7	240 28.0 -35.0	S	22 51.8 +06.1	00			
01	191 28.6 +00.0	S	15 17.5 -00.8	202 55.5 -00.8	S	19 22.1 -00.7	254 53.0 -34.9	S	22 57.9 +06.1	01			
02	206 28.6 +00.0	S	15 16.7 -00.8	217 54.7 -00.7	S	19 21.4 -00.7	269 18.1 -35.0	S	23 04.0 +05.8	02			
03	221 28.6 -00.1	S	15 15.9 -00.7	232 54.0 -00.8	S	19 20.7 -00.8	283 43.1 -35.1	S	23 09.8 +05.8	03			
04	236 28.5 +00.0	S	15 15.2 -00.8	247 53.2 -00.8	S	19 19.9 -00.7	298 08.0 -35.1	S	23 15.6 +05.5	04			
05	251 28.5 +00.0	S	15 14.4 -00.8	262 52.4 -00.7	S	19 19.2 -00.7	312 32.9 -35.2	S	23 21.1 +05.5	05			
06	266 28.5 -00.1	S	15 13.6 -00.8	277 51.7 -00.8	S	19 18.5 -00.7	326 57.7 -35.1	S	23 26.6 +05.2	06			
07	281 28.4 +00.0	S	15 12.8 -00.8	292 50.9 -00.8	S	19 17.8 -00.7	341 22.6 -35.3	S	23 31.8 +05.1	07			
08	296 28.4 +00.0	S	15 12.0 -00.8	307 50.1 -00.7	S	19 17.1 -00.7	355 47.3 -35.2	S	23 36.9 +05.0	08			
09	311 28.4 -00.1	S	15 11.2 -00.7	322 49.4 -00.8	S	19 16.4 -00.8	10 12.1 -35.3	S	23 41.9 +04.8	09			
10	326 28.3 +00.0	S	15 10.5 -00.8	337 48.6 -00.8	S	19 15.6 -00.7	24 36.8 -35.4	S	23 46.7 +04.7	10			
11	341 28.3 +00.0	S	15 09.7 -00.8	352 47.8 -00.7	S	19 14.9 -00.7	39 01.4 -35.3	S	23 51.4 +04.5	11			
12	356 28.3 -00.1	S	15 08.9 -00.8	7 47.1 -00.8	S	19 14.2 -00.7	53 26.1 -35.4	S	23 55.9 +04.3	12			
13	11 28.2 +00.0	S	15 08.1 -00.8	22 46.3 -00.8	S	19 13.5 -00.8	67 50.7 -35.4	S	24 00.2 +04.2	13			
14	26 28.2 +00.0	S	15 07.3 -00.8	37 45.5 -00.7	S	19 12.7 -00.7	82 15.3 -35.5	S	24 04.4 +04.0	14			
15	41 28.2 -00.1	S	15 06.5 -00.8	52 44.8 -00.8	S	19 12.0 -00.7	96 39.8 -35.5	S	24 08.4 +03.9	15			
16	56 28.1 +00.0	S	15 05.7 -00.8	67 44.0 -00.8	S	19 11.3 -00.7	111 04.3 -35.5	S	24 12.3 +03.7	16			
17	71 28.1 +00.0	S	15 04.9 -00.7	82 43.2 -00.7	S	19 10.6 -00.8	125 28.8 -35.5	S	24 16.0 +03.6	17			
18	86 28.1 +00.0	S	15 04.2 -00.8	97 42.5 -00.8	S	19 09.8 -00.7	139 53.3 -35.6	S	24 19.6 +03.4	18			
19	101 28.1 -00.1	S	15 03.4 -00.8	112 41.7 -00.7	S	19 09.1 -00.7	154 17.7 -35.5	S	24 23.0 +03.2	19			
20	116 28.0 +00.0	S	15 02.6 -00.8	127 41.0 -00.8	S	19 08.4 -00.7	168 42.2 -35.6	S	24 26.2 +03.1	20			
21	131 28.0 +00.0	S	15 01.8 -00.8	142 40.2 -00.8	S	19 07.7 -00.8	183 06.6 -35.6	S	24 29.3 +02.9	21			
22	146 28.0 -00.1	S	15 01.0 -00.8	157 39.4 -00.7	S	19 06.9 -00.7	197 31.0 -35.7	S	24 32.2 +02.8	22			
23	161 27.9 +00.0	S	15 00.2 -00.8	172 38.7 -00.8	S	19 06.2 -00.7	211 55.3 -35.6	S	24 35.0 +02.6	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'0 16'0 16'0 16'0 16'0 16'0						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 58'8 58'8 58'7 58'7 58'6 58'6						
	SHA 039° 039° 039° 039° 038° 038°			SHA 050° 050° 050° 050° 050° 049°			SHA 102° 099° 097° 094° 092° 089°						
	Greenwich Culmination Time: 12:14			Greenwich Culmination Time: 11:28			Greenwich Culmination Time: 08:17						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	94 24.8 +01.1	N	17 50.4 +00.4	183 14.3 +01.8	S	17 51.1 -00.1	188 51.8 +02.2	S	19 11.5 -00.1	00			
01	109 25.9 +01.1	N	17 50.8 +00.4	198 16.1 +01.9	S	17 51.0 -00.2	203 54.0 +02.1	S	19 11.4 +00.0	01			
02	124 27.0 +01.1	N	17 51.2 +00.4	213 18.0 +01.8	S	17 50.8 -00.1	218 56.1 +02.2	S	19 11.4 -00.1	02			
03	139 28.1 +01.1	N	17 51.6 +00.4	228 19.8 +01.9	S	17 50.7 -00.2	233 58.3 +02.2	S	19 11.3 -00.1	03			
04	154 29.2 +01.1	N	17 52.0 +00.5	243 21.7 +01.9	S	17 50.5 -00.2	249 00.5 +02.1	S	19 11.2 +00.0	04			
05	169 30.3 +01.1	N	17 52.5 +00.4	258 23.6 +01.8	S	17 50.3 -00.1	264 02.6 +02.2	S	19 11.2 -00.1	05			
06	184 31.4 +01.1	N	17 52.9 +00.4	273 25.4 +01.9	S	17 50.2 -00.2	279 04.8 +02.1	S	19 11.1 -00.1	06			
07	199 32.5 +01.1	N	17 53.3 +00.4	288 27.3 +01.9	S	17 50.0 -00.1	294 06.9 +02.2	S	19 11.0 +00.0	07			
08	214 33.6 +01.1	N	17 53.7 +00.4	303 29.2 +01.8	S	17 49.9 -00.2	309 09.1 +02.2	S	19 11.0 -00.1	08			
09	229 34.7 +01.1	N	17 54.1 +00.4	318 31.0 +01.9	S	17 49.7 -00.2	324 11.3 +02.1	S	19 10.9 -00.1	09			
10	244 35.8 +01.1	N	17 54.5 +00.4	333 32.9 +01.9	S	17 49.5 -00.1	339 13.4 +02.2	S	19 10.8 -00.1	10			
11	259 36.9 +01.1	N	17 54.9 +00.4	348 34.8 +01.8	S	17 49.4 -00.2	354 15.6 +02.2	S	19 10.7 +00.0	11			
12	274 38.0 +01.1	N	17 55.3 +00.5	3 36.6 +01.9	S	17 49.2 -00.1	9 17.8 +02.1	S	19 10.7 -00.1	12			
13	289 39.1 +01.1	N	17 55.8 +00.4	18 38.5 +01.9	S	17 49.1 -00.2	24 19.9 +02.2	S	19 10.6 -00.1	13			
14	304 40.2 +01.0	N	17 56.2 +00.4	33 40.4 +01.8	S	17 48.9 -00.2	39 22.1 +02.1	S	19 10.5 +00.0	14			
15	319 41.2 +01.1	N	17 56.6 +00.4	48 42.2 +01.9	S	17 48.7 -00.1	54 24.2 +02.2	S	19 10.5 -00.1	15			
16	334 42.3 +01.1	N	17 57.0 +00.4	63 44.1 +01.9	S	17 48.6 -00.2	69 26.4 +02.2	S	19 10.4 -00.1	16			
17	349 43.4 +01.1	N	17 57.4 +00.4	78 46.0 +01.8	S	17 48.4 -00.1	84 28.6 +02.1	S	19 10.3 +00.0	17			
18	4 44.5 +01.1	N	17 57.8 +00.4	93 47.8 +01.9	S	17 48.3 -00.2	99 30.7 +02.2	S	19 10.3 -00.1	18			
19	19 45.6 +01.1	N	17 58.2 +00.4	108 49.7 +01.9	S	17 48.1 -00.2	114 32.9 +02.2	S	19 10.2 -00.1	19			
20	34 46.7 +01.1	N	17 58.6 +00.5	123 51.6 +01.8	S	17 47.9 -00.1	129 35.1 +02.1	S	19 10.1 -00.1	20			
21	49 47.8 +01.1	N	17 59.1 +00.4	138 53.4 +01.9	S	17 47.8 -00.2	144 37.2 +02.2	S	19 10.0 +00.0	21			
22	64 48.9 +01.1	N	17 59.5 +00.4	153 55.3 +01.9	S	17 47.6 -00.1	159 39.4 +02.1	S	19 10.0 -00.1	22			
23	79 50.0 +01.1	N	17 59.9 +00.4	168 57.2 +01.8	S	17 47.5 -00.2	174 41.5 +02.2	S	19 09.9 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 317° 317° 317° 317° 317° 317°			SHA 046° 046° 046° 046° 046° 046°			SHA 052° 051° 051° 051° 051° 051°						
	Greenwich Culmination Time: 17:41			Greenwich Culmination Time: 11:45			Greenwich Culmination Time: 11:22						

UT	Sun				Venus				Moon				UT	
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec		
00	176 27.9 +00.0	S 14 59.4 -00.8	187 37.9 -00.7	S 19 05.5 -00.8	226 19.7 -35.7	S 24 37.6 +02.4	00							
01	191 27.9 +00.0	S 14 58.6 -00.8	202 37.2 -00.8	S 19 04.7 -00.7	240 44.0 -35.6	S 24 40.0 +02.3	01							
02	206 27.9 -00.1	S 14 57.8 -00.8	217 36.4 -00.7	S 19 04.0 -00.8	255 08.4 -35.7	S 24 42.3 +02.1	02							
03	221 27.8 +00.0	S 14 57.0 -00.8	232 35.7 -00.8	S 19 03.2 -00.7	269 32.7 -35.7	S 24 44.4 +01.9	03							
04	236 27.8 +00.0	S 14 56.2 -00.8	247 34.9 -00.8	S 19 02.5 -00.7	283 57.0 -35.6	S 24 46.3 +01.8	04							
05	251 27.8 +00.0	S 14 55.4 -00.8	262 34.1 -00.7	S 19 01.8 -00.8	298 21.4 -35.7	S 24 48.1 +01.6	05							
06	266 27.8 -00.1	S 14 54.6 -00.8	277 33.4 -00.8	S 19 01.0 -00.7	312 45.7 -35.7	S 24 49.7 +01.5	06							
07	281 27.7 +00.0	S 14 53.8 -00.7	292 32.6 -00.7	S 19 00.3 -00.8	327 10.0 -35.7	S 24 51.2 +01.3	07							
08	296 27.7 +00.0	S 14 53.1 -00.8	307 31.9 -00.8	S 18 59.5 -00.7	341 34.3 -35.7	S 24 52.5 +01.1	08							
09	311 27.7 +00.0	S 14 52.3 -00.8	322 31.1 -00.7	S 18 58.8 -00.7	355 58.6 -35.6	S 24 53.6 +01.0	09							
10	326 27.7 +00.0	S 14 51.5 -00.8	337 30.4 -00.8	S 18 58.1 -00.8	10 23.0 -35.7	S 24 54.6 +00.8	10							
11	341 27.7 -00.1	S 14 50.7 -00.8	352 29.6 -00.7	S 18 57.3 -00.7	24 47.3 -35.7	S 24 55.4 +00.7	11							
12	356 27.6 +00.0	S 14 49.9 -00.8	7 28.9 -00.8	S 18 56.6 -00.8	39 11.6 -35.6	S 24 56.1 +00.5	12							
13	11 27.6 +00.0	S 14 49.1 -00.8	22 28.1 -00.7	S 18 55.8 -00.7	53 36.0 -35.6	S 24 56.6 +00.3	13							
14	26 27.6 +00.0	S 14 48.3 -00.8	37 27.4 -00.8	S 18 55.1 -00.8	68 00.4 -35.7	S 24 56.9 +00.1	14							
15	41 27.6 -00.1	S 14 47.5 -00.8	52 26.6 -00.7	S 18 54.3 -00.7	82 24.7 -35.6	S 24 57.0 +00.1	15							
16	56 27.5 +00.0	S 14 46.7 -00.8	67 25.9 -00.8	S 18 53.6 -00.8	96 49.1 -35.6	S 24 57.1 -00.2	16							
17	71 27.5 +00.0	S 14 45.9 -00.8	82 25.1 -00.7	S 18 52.8 -00.7	111 13.5 -35.5	S 24 56.9 -00.3	17							
18	86 27.5 +00.0	S 14 45.1 -00.8	97 24.4 -00.8	S 18 52.1 -00.8	125 38.0 -35.6	S 24 56.6 -00.5	18							
19	101 27.5 +00.0	S 14 44.3 -00.8	112 23.6 -00.7	S 18 51.3 -00.7	140 02.4 -35.5	S 24 56.1 -00.6	19							
20	116 27.5 -00.1	S 14 43.5 -00.8	127 22.9 -00.8	S 18 50.6 -00.8	154 26.9 -35.5	S 24 55.5 -00.9	20							
21	131 27.4 +00.0	S 14 42.7 -00.8	142 22.1 -00.7	S 18 49.8 -00.7	168 51.4 -35.5	S 24 54.6 -00.9	21							
22	146 27.4 +00.0	S 14 41.9 -00.8	157 21.4 -00.8	S 18 49.1 -00.8	183 15.9 -35.4	S 24 53.7 -01.1	22							
23	161 27.4 +00.0	S 14 41.1 -00.8	172 20.6 -00.7	S 18 48.3 -00.7	197 40.5 -35.4	S 24 52.6 -01.3	23							
UT 02 06 10 14 18 22	SD 16'2 16'2 16'2 16'2 16'2 16'2	HP 00'1 00'1 00'1 00'1 00'1 00'1	SHA 038° 038° 038° 038° 037° 037°	Greenwich Culmination Time: 12:14	UT 02 06 10 14 18 22	SD 00'1 00'1 00'1 00'1 00'1 00'1	HP 00'1 00'1 00'1 00'1 00'1 00'1	SHA 049° 049° 049° 049° 048° 048°	Greenwich Culmination Time: 11:30	UT 02 06 10 14 18 22	SD 16'0 15'9 15'9 15'9 15'9 15'9	HP 58'5 58'5 58'4 58'4 58'3 58'3	SHA 087° 084° 082° 079° 077° 074°	Greenwich Culmination Time: 09:16

UT	Mars				Jupiter				Saturn				UT	
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec		
00	94 51.1 +01.1	N 18 00.3 +00.4	183 59.0 +01.9	S 17 47.3 -00.2	189 43.7 +02.2	S 19 09.8 +00.0	00							
01	109 52.2 +01.1	N 18 00.7 +00.4	199 00.9 +01.9	S 17 47.1 -00.1	204 45.9 +02.1	S 19 09.8 -00.1	01							
02	124 53.3 +01.0	N 18 01.1 +00.4	214 02.8 +01.8	S 17 47.0 -00.2	219 48.0 +02.2	S 19 09.7 -00.1	02							
03	139 54.3 +01.1	N 18 01.5 +00.4	229 04.6 +01.9	S 17 46.8 -00.2	234 50.2 +02.2	S 19 09.6 +00.0	03							
04	154 55.4 +01.1	N 18 01.9 +00.5	244 06.5 +01.9	S 17 46.6 -00.1	249 52.4 +02.1	S 19 09.6 -00.1	04							
05	169 56.5 +01.1	N 18 02.4 +00.4	259 08.4 +01.8	S 17 46.5 -00.2	264 54.5 +02.2	S 19 09.5 -00.1	05							
06	184 57.6 +01.1	N 18 02.8 +00.4	274 10.2 +01.9	S 17 46.3 -00.1	279 56.7 +02.1	S 19 09.4 +00.0	06							
07	199 58.7 +01.1	N 18 03.2 +00.4	289 12.1 +01.9	S 17 46.2 -00.2	294 58.8 +02.2	S 19 09.4 -00.1	07							
08	214 59.8 +01.1	N 18 03.6 +00.4	304 14.0 +01.8	S 17 46.0 -00.2	310 01.0 +02.2	S 19 09.3 -00.1	08							
09	230 00.9 +01.1	N 18 04.0 +00.4	319 15.8 +01.9	S 17 45.8 -00.1	325 03.2 +02.1	S 19 09.2 -00.1	09							
10	245 02.0 +01.0	N 18 04.4 +00.4	334 17.7 +01.9	S 17 45.7 -00.2	340 05.3 +02.2	S 19 09.1 +00.0	10							
11	260 03.0 +01.1	N 18 04.8 +00.4	349 19.6 +01.8	S 17 45.5 -00.1	355 07.5 +02.2	S 19 09.1 -00.1	11							
12	275 04.1 +01.1	N 18 05.2 +00.4	4 21.4 +01.9	S 17 45.4 -00.2	10 09.7 +02.1	S 19 09.0 -00.1	12							
13	290 05.2 +01.1	N 18 05.6 +00.4	19 23.3 +01.9	S 17 45.2 -00.2	25 11.8 +02.2	S 19 08.9 +00.0	13							
14	305 06.3 +01.1	N 18 06.0 +00.5	34 25.2 +01.8	S 17 45.0 -00.1	40 14.0 +02.2	S 19 08.9 -00.1	14							
15	320 07.4 +01.1	N 18 06.5 +00.4	49 27.0 +01.9	S 17 44.9 -00.2	55 16.2 +02.1	S 19 08.8 -00.1	15							
16	335 08.5 +01.1	N 18 06.9 +00.4	64 28.9 +01.9	S 17 44.7 -00.1	70 18.3 +02.2	S 19 08.7 +00.0	16							
17	350 09.6 +01.1	N 18 07.3 +00.4	79 30.8 +01.8	S 17 44.6 -00.2	85 20.5 +02.1	S 19 08.7 -00.1	17							
18	5 10.7 +01.0	N 18 07.7 +00.4	94 32.6 +01.9	S 17 44.4 -00.2	100 22.6 +02.2	S 19 08.6 -00.1	18							
19	20 11.7 +01.1	N 18 08.1 +00.4	109 34.5 +01.9	S 17 44.2 -00.1	115 24.8 +02.2	S 19 08.5 +00.0	19							
20	35 12.8 +01.1	N 18 08.5 +00.4	124 36.4 +01.8	S 17 44.1 -00.2	130 27.0 +02.1	S 19 08.5 -00.1	20							
21	50 13.9 +01.1	N 18 08.9 +00.4	139 38.2 +01.9	S 17 43.9 -00.1	145 29.1 +02.2	S 19 08.4 -00.1	21							
22	65 15.0 +01.1	N 18 09.3 +00.4	154 40.1 +01.9	S 17 43.8 -00.2	160 31.3 +02.2	S 19 08.3 -00.1	22							
23	80 16.1 +01.1	N 18 09.7 +00.4	169 42.0 +01.8	S 17 43.6 -00.2	175 33.5 +02.1	S 19 08.2 +00.0	23							
UT 02 06 10 14 18 22	SD 00'1 00'1 00'1 00'1 00'1 00'1	HP 00'1 00'1 00'1 00'1 00'1 00'1	SHA 316° 316° 316° 316° 316° 316°	Greenwich Culmination Time: 17:39	UT 02 06 10 14 18 22	SD 00'3 00'3 00'3 00'3 00'3 00'3	HP 00'0 00'0 00'0 00'0 00'0 00'0	SHA 046° 046° 046° 046° 045° 045°	Greenwich Culmination Time: 11:42	UT 02 06 10 14 18 22	SD 00'1 00'1 00'1 00'1 00'1 00'1	HP 00'0 00'0 00'0 00'0 00'0 00'0	SHA 051° 051° 051° 051° 051° 051°	Greenwich Culmination Time: 11:19

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 27.4 +00.0	S	14 40.3 -00.8	187 19.9 -00.8	S	18 47.6 -00.8	212 05.1 -35.4	S	24 51.3 -01.5	00			
01	191 27.4 +00.0	S	14 39.5 -00.8	202 19.1 -00.7	S	18 46.8 -00.8	226 29.7 -35.4	S	24 49.8 -01.6	01			
02	206 27.4 -00.1	S	14 38.7 -00.8	217 18.4 -00.8	S	18 46.0 -00.7	240 54.3 -35.3	S	24 48.2 -01.7	02			
03	221 27.3 +00.0	S	14 37.9 -00.8	232 17.6 -00.7	S	18 45.3 -00.8	255 19.0 -35.3	S	24 46.5 -01.9	03			
04	236 27.3 +00.0	S	14 37.1 -00.9	247 16.9 -00.8	S	18 44.5 -00.7	269 43.7 -35.2	S	24 44.6 -02.1	04			
05	251 27.3 +00.0	S	14 36.2 -00.8	262 16.1 -00.7	S	18 43.8 -00.8	284 08.5 -35.2	S	24 42.5 -02.2	05			
06	266 27.3 +00.0	S	14 35.4 -00.8	277 15.4 -00.7	S	18 43.0 -00.8	298 33.3 -35.1	S	24 40.3 -02.4	06			
07	281 27.3 +00.0	S	14 34.6 -00.8	292 14.7 -00.8	S	18 42.2 -00.7	312 58.2 -35.2	S	24 37.9 -02.5	07			
08	296 27.3 -00.1	S	14 33.8 -00.8	307 13.9 -00.7	S	18 41.5 -00.8	327 23.0 -35.0	S	24 35.4 -02.7	08			
09	311 27.2 +00.0	S	14 33.0 -00.8	322 13.2 -00.8	S	18 40.7 -00.8	341 48.0 -35.0	S	24 32.7 -02.9	09			
10	326 27.2 +00.0	S	14 32.2 -00.8	337 12.4 -00.7	S	18 39.9 -00.7	356 13.0 -35.0	S	24 29.8 -03.0	10			
11	341 27.2 +00.0	S	14 31.4 -00.8	352 11.7 -00.8	S	18 39.2 -00.8	10 38.0 -34.9	S	24 26.8 -03.1	11			
12	356 27.2 +00.0	S	14 30.6 -00.8	7 10.9 -00.7	S	18 38.4 -00.8	25 03.1 -34.9	S	24 23.7 -03.3	12			
13	11 27.2 +00.0	S	14 29.8 -00.8	22 10.2 -00.7	S	18 37.6 -00.7	39 28.2 -34.8	S	24 20.4 -03.5	13			
14	26 27.2 -00.1	S	14 29.0 -00.8	37 09.5 -00.8	S	18 36.9 -00.8	53 53.4 -34.7	S	24 16.9 -03.6	14			
15	41 27.1 +00.0	S	14 28.2 -00.8	52 08.7 -00.7	S	18 36.1 -00.8	68 18.7 -34.7	S	24 13.3 -03.7	15			
16	56 27.1 +00.0	S	14 27.4 -00.8	67 08.0 -00.8	S	18 35.3 -00.8	82 44.0 -34.7	S	24 09.6 -03.9	16			
17	71 27.1 +00.0	S	14 26.6 -00.8	82 07.2 -00.7	S	18 34.5 -00.7	97 09.3 -34.5	S	24 05.7 -04.0	17			
18	86 27.1 +00.0	S	14 25.8 -00.9	97 06.5 -00.7	S	18 33.8 -00.8	111 34.8 -34.6	S	24 01.7 -04.2	18			
19	101 27.1 +00.0	S	14 24.9 -00.8	112 05.8 -00.8	S	18 33.0 -00.8	126 00.2 -34.4	S	23 57.5 -04.4	19			
20	116 27.1 +00.0	S	14 24.1 -00.8	127 05.0 -00.7	S	18 32.2 -00.8	140 25.8 -34.4	S	23 53.1 -04.4	20			
21	131 27.1 +00.0	S	14 23.3 -00.8	142 04.3 -00.7	S	18 31.4 -00.7	154 51.4 -34.3	S	23 48.7 -04.7	21			
22	146 27.1 +00.0	S	14 22.5 -00.8	157 03.6 -00.8	S	18 30.7 -00.8	169 17.1 -34.3	S	23 44.0 -04.7	22			
23	161 27.1 -00.1	S	14 21.7 -00.8	172 02.8 -00.7	S	18 29.9 -00.8	183 42.8 -34.2	S	23 39.3 -04.9	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'9 15'8 15'8 15'8 15'8 15'8						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 58'2 58'1 58'0 58'0 57'9 57'8						
	SHA 037° 037° 037° 037° 036° 036°			SHA 048° 048° 047° 047° 047° 047°			SHA 072° 069° 067° 064° 062° 059°						
	Greenwich Culmination Time: 12:14			Greenwich Culmination Time: 11:31			Greenwich Culmination Time: 10:15						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	95 17.2 +01.0	N	18 10.1 +00.4	184 43.8 +01.9	S	17 43.4 -00.1	190 35.6 +02.2	S	19 08.2 -00.1	00			
01	110 18.2 +01.1	N	18 10.5 +00.5	199 45.7 +01.9	S	17 43.3 -00.2	205 37.8 +02.2	S	19 08.1 -00.1	01			
02	125 19.3 +01.1	N	18 11.0 +00.4	214 47.6 +01.8	S	17 43.1 -00.2	220 40.0 +02.1	S	19 08.0 +00.0	02			
03	140 20.4 +01.1	N	18 11.4 +00.4	229 49.4 +01.9	S	17 42.9 -00.1	235 42.1 +02.2	S	19 08.0 -00.1	03			
04	155 21.5 +01.1	N	18 11.8 +00.4	244 51.3 +01.9	S	17 42.8 -00.2	250 44.3 +02.1	S	19 07.9 -00.1	04			
05	170 22.6 +01.1	N	18 12.2 +00.4	259 53.2 +01.8	S	17 42.6 -00.1	265 46.4 +02.2	S	19 07.8 +00.0	05			
06	185 23.7 +01.0	N	18 12.6 +00.4	274 55.0 +01.9	S	17 42.5 -00.2	280 48.6 +02.2	S	19 07.8 -00.1	06			
07	200 24.7 +01.1	N	18 13.0 +00.4	289 56.9 +01.9	S	17 42.3 -00.2	295 50.8 +02.1	S	19 07.7 -00.1	07			
08	215 25.8 +01.1	N	18 13.4 +00.4	304 58.8 +01.8	S	17 42.1 -00.1	310 52.9 +02.2	S	19 07.6 +00.0	08			
09	230 26.9 +01.1	N	18 13.8 +00.4	320 00.6 +01.9	S	17 42.0 -00.2	325 55.1 +02.2	S	19 07.6 -00.1	09			
10	245 28.0 +01.1	N	18 14.2 +00.4	335 02.5 +01.9	S	17 41.8 -00.1	340 57.3 +02.1	S	19 07.5 -00.1	10			
11	260 29.1 +01.0	N	18 14.6 +00.4	350 04.4 +01.8	S	17 41.7 -00.2	355 59.4 +02.2	S	19 07.4 -00.1	11			
12	275 30.1 +01.1	N	18 15.0 +00.4	5 06.2 +01.9	S	17 41.5 -00.2	11 01.6 +02.2	S	19 07.3 +00.0	12			
13	290 31.2 +01.1	N	18 15.4 +00.5	20 08.1 +01.9	S	17 41.3 -00.1	26 03.8 +02.1	S	19 07.3 -00.1	13			
14	305 32.3 +01.1	N	18 15.9 +00.4	35 10.0 +01.8	S	17 41.2 -00.2	41 05.9 +02.2	S	19 07.2 -00.1	14			
15	320 33.4 +01.1	N	18 16.3 +00.4	50 11.8 +01.9	S	17 41.0 -00.2	56 08.1 +02.2	S	19 07.1 +00.0	15			
16	335 34.5 +01.0	N	18 16.7 +00.4	65 13.7 +01.9	S	17 40.8 -00.1	71 10.3 +02.1	S	19 07.1 -00.1	16			
17	350 35.5 +01.1	N	18 17.1 +00.4	80 15.6 +01.8	S	17 40.7 -00.2	86 12.4 +02.2	S	19 07.0 -00.1	17			
18	5 36.6 +01.1	N	18 17.5 +00.4	95 17.4 +01.9	S	17 40.5 -00.1	101 14.6 +02.1	S	19 06.9 +00.0	18			
19	20 37.7 +01.1	N	18 17.9 +00.4	110 19.3 +01.9	S	17 40.4 -00.2	116 16.7 +02.2	S	19 06.9 -00.1	19			
20	35 38.8 +01.0	N	18 18.3 +00.4	125 21.2 +01.8	S	17 40.2 -00.2	131 18.9 +02.2	S	19 06.8 -00.1	20			
21	50 39.8 +01.1	N	18 18.7 +00.4	140 23.0 +01.9	S	17 40.0 -00.1	146 21.1 +02.1	S	19 06.7 +00.0	21			
22	65 40.9 +01.1	N	18 19.1 +00.4	155 24.9 +01.9	S	17 39.9 -00.2	161 23.2 +02.2	S	19 06.7 -00.1	22			
23	80 42.0 +01.1	N	18 19.5 +00.4	170 26.8 +01.8	S	17 39.7 -00.1	176 25.4 +02.2	S	19 06.6 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 316° 316° 316° 316° 316° 315°			SHA 045° 045° 045° 045° 045° 045°			SHA 051° 051° 051° 051° 051° 051°						
	Greenwich Culmination Time: 17:37			Greenwich Culmination Time: 11:39			Greenwich Culmination Time: 11:15						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 27.0 +00.0	S	14 20.9 -00.8	187 02.1 -00.7	S	18 29.1 -00.8	198 08.6 -34.1	S	23 34.4 -05.1	00			
01	191 27.0 +00.0	S	14 20.1 -00.8	202 01.4 -00.8	S	18 28.3 -00.8	212 34.5 -34.0	S	23 29.3 -05.2	01			
02	206 27.0 +00.0	S	14 19.3 -00.9	217 00.6 -00.7	S	18 27.5 -00.7	227 00.5 -34.0	S	23 24.1 -05.3	02			
03	221 27.0 +00.0	S	14 18.4 -00.8	231 59.9 -00.7	S	18 26.8 -00.8	241 26.5 -33.9	S	23 18.8 -05.5	03			
04	236 27.0 +00.0	S	14 17.6 -00.8	246 59.2 -00.8	S	18 26.0 -00.8	255 52.6 -33.9	S	23 13.3 -05.6	04			
05	251 27.0 +00.0	S	14 16.8 -00.8	261 58.4 -00.7	S	18 25.2 -00.8	270 18.7 -33.7	S	23 07.7 -05.7	05			
06	266 27.0 +00.0	S	14 16.0 -00.8	276 57.7 -00.7	S	18 24.4 -00.8	284 45.0 -33.7	S	23 02.0 -05.9	06			
07	281 27.0 +00.0	S	14 15.2 -00.8	291 57.0 -00.8	S	18 23.6 -00.8	299 11.3 -33.6	S	22 56.1 -05.9	07			
08	296 27.0 +00.0	S	14 14.4 -00.9	306 56.2 -00.7	S	18 22.8 -00.7	313 37.7 -33.5	S	22 50.2 -06.2	08			
09	311 27.0 +00.0	S	14 13.5 -00.8	321 55.5 -00.7	S	18 22.1 -00.8	328 04.2 -33.5	S	22 44.0 -06.2	09			
10	326 27.0 -00.1	S	14 12.7 -00.8	336 54.8 -00.8	S	18 21.3 -00.8	342 30.7 -33.4	S	22 37.8 -06.4	10			
11	341 26.9 +00.0	S	14 11.9 -00.8	351 54.0 -00.7	S	18 20.5 -00.8	356 57.3 -33.3	S	22 31.4 -06.5	11			
12	356 26.9 +00.0	S	14 11.1 -00.8	6 53.3 -00.7	S	18 19.7 -00.8	11 24.0 -33.2	S	22 24.9 -06.7	12			
13	11 26.9 +00.0	S	14 10.3 -00.8	21 52.6 -00.7	S	18 18.9 -00.8	25 50.8 -33.1	S	22 18.2 -06.8	13			
14	26 26.9 +00.0	S	14 09.5 -00.9	36 51.9 -00.8	S	18 18.1 -00.8	40 17.7 -33.0	S	22 11.4 -06.9	14			
15	41 26.9 +00.0	S	14 08.6 -00.8	51 51.1 -00.7	S	18 17.3 -00.8	54 44.7 -33.0	S	22 04.5 -07.0	15			
16	56 26.9 +00.0	S	14 07.8 -00.8	66 50.4 -00.7	S	18 16.5 -00.8	69 11.7 -32.9	S	21 57.5 -07.1	16			
17	71 26.9 +00.0	S	14 07.0 -00.8	81 49.7 -00.7	S	18 15.7 -00.8	83 38.8 -32.8	S	21 50.4 -07.3	17			
18	86 26.9 +00.0	S	14 06.2 -00.8	96 49.0 -00.8	S	18 14.9 -00.8	98 06.0 -32.7	S	21 43.1 -07.3	18			
19	101 26.9 +00.0	S	14 05.4 -00.9	111 48.2 -00.7	S	18 14.1 -00.8	112 33.3 -32.6	S	21 35.8 -07.5	19			
20	116 26.9 +00.0	S	14 04.5 -00.8	126 47.5 -00.7	S	18 13.3 -00.8	127 00.7 -32.6	S	21 28.3 -07.7	20			
21	131 26.9 +00.0	S	14 03.7 -00.8	141 46.8 -00.7	S	18 12.5 -00.8	141 28.1 -32.4	S	21 20.6 -07.7	21			
22	146 26.9 +00.0	S	14 02.9 -00.8	156 46.1 -00.8	S	18 11.7 -00.8	155 55.7 -32.4	S	21 12.9 -07.8	22			
23	161 26.9 +00.0	S	14 02.1 -00.8	171 45.3 -00.7	S	18 10.9 -00.8	170 23.3 -32.3	S	21 05.1 -08.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'7 15'7 15'7 15'7 15'6 15'6						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 57'7 57'7 57'6 57'5 57'4 57'3						
	SHA 036° 036° 036° 036° 035° 035°			SHA 047° 046° 046° 046° 046° 046°			SHA 057° 054° 052° 049° 047° 045°						
	Greenwich Culmination Time: 12:14			Greenwich Culmination Time: 11:32			Greenwich Culmination Time: 11:12						

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	95 43.1 +01.0	N	18 19.9 +00.4	185 28.6 +01.9	S	17 39.6 -00.2	191 27.6 +02.1	S	19 06.5 -00.1	00			
01	110 44.1 +01.1	N	18 20.3 +00.4	200 30.5 +01.9	S	17 39.4 -00.2	206 29.7 +02.2	S	19 06.4 +00.0	01			
02	125 45.2 +01.1	N	18 20.7 +00.4	215 32.4 +01.8	S	17 39.2 -00.1	221 31.9 +02.2	S	19 06.4 -00.1	02			
03	140 46.3 +01.1	N	18 21.1 +00.4	230 34.2 +01.9	S	17 39.1 -00.2	236 34.1 +02.1	S	19 06.3 -00.1	03			
04	155 47.4 +01.0	N	18 21.5 +00.4	245 36.1 +01.9	S	17 38.9 -00.2	251 36.2 +02.2	S	19 06.2 +00.0	04			
05	170 48.4 +01.1	N	18 21.9 +00.5	260 38.0 +01.8	S	17 38.7 -00.1	266 38.4 +02.2	S	19 06.2 -00.1	05			
06	185 49.5 +01.1	N	18 22.4 +00.4	275 39.8 +01.9	S	17 38.6 -00.2	281 40.6 +02.1	S	19 06.1 -00.1	06			
07	200 50.6 +01.1	N	18 22.8 +00.4	290 41.7 +01.9	S	17 38.4 -00.1	296 42.7 +02.2	S	19 06.0 +00.0	07			
08	215 51.7 +01.0	N	18 23.2 +00.4	305 43.6 +01.8	S	17 38.3 -00.2	311 44.9 +02.2	S	19 06.0 -00.1	08			
09	230 52.7 +01.1	N	18 23.6 +00.4	320 45.4 +01.9	S	17 38.1 -00.2	326 47.1 +02.1	S	19 05.9 -00.1	09			
10	245 53.8 +01.1	N	18 24.0 +00.4	335 47.3 +01.9	S	17 37.9 -00.1	341 49.2 +02.2	S	19 05.8 +00.0	10			
11	260 54.9 +01.1	N	18 24.4 +00.4	350 49.2 +01.9	S	17 37.8 -00.2	356 51.4 +02.2	S	19 05.8 -00.1	11			
12	275 56.0 +01.0	N	18 24.8 +00.4	5 51.1 +01.8	S	17 37.6 -00.1	11 53.6 +02.1	S	19 05.7 -00.1	12			
13	290 57.0 +01.1	N	18 25.2 +00.4	20 52.9 +01.9	S	17 37.5 -00.2	26 55.7 +02.2	S	19 05.6 -00.1	13			
14	305 58.1 +01.1	N	18 25.6 +00.4	35 54.8 +01.9	S	17 37.3 -00.2	41 57.9 +02.1	S	19 05.5 +00.0	14			
15	320 59.2 +01.0	N	18 26.0 +00.4	50 56.7 +01.8	S	17 37.1 -00.1	57 00.0 +02.2	S	19 05.5 -00.1	15			
16	336 00.2 +01.1	N	18 26.4 +00.4	65 58.5 +01.9	S	17 37.0 -00.2	72 02.2 +02.2	S	19 05.4 -00.1	16			
17	351 01.3 +01.1	N	18 26.8 +00.4	81 00.4 +01.9	S	17 36.8 -00.2	87 04.4 +02.1	S	19 05.3 +00.0	17			
18	6 02.4 +01.1	N	18 27.2 +00.4	96 02.3 +01.8	S	17 36.6 -00.1	102 06.5 +02.2	S	19 05.3 -00.1	18			
19	21 03.5 +01.0	N	18 27.6 +00.4	111 04.1 +01.9	S	17 36.5 -00.2	117 08.7 +02.2	S	19 05.2 -00.1	19			
20	36 04.5 +01.1	N	18 28.0 +00.4	126 06.0 +01.9	S	17 36.3 -00.1	132 10.9 +02.1	S	19 05.1 +00.0	20			
21	51 05.6 +01.1	N	18 28.4 +00.4	141 07.9 +01.8	S	17 36.2 -00.2	147 13.0 +02.2	S	19 05.1 -00.1	21			
22	66 06.7 +01.0	N	18 28.8 +00.4	156 09.7 +01.9	S	17 36.0 -00.2	162 15.2 +02.2	S	19 05.0 -00.1	22			
23	81 07.7 +01.1	N	18 29.2 +00.4	171 11.6 +01.9	S	17 35.8 -00.1	177 17.4 +02.1	S	19 04.9 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 315° 315° 315° 315° 315° 315°			SHA 045° 045° 045° 045° 045° 045°			SHA 051° 051° 051° 051° 051° 051°						
	Greenwich Culmination Time: 17:35			Greenwich Culmination Time: 11:36			Greenwich Culmination Time: 11:12						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 26.9 +00.0	S 14 01.3 -00.9	186 44.6 -00.7	S 18 10.1 -00.8	184 51.0 -32.1	S 20 57.1 -08.0	00						
01	191 26.9 +00.0	S 14 00.4 -00.8	201 43.9 -00.7	S 18 09.3 -00.8	199 18.9 -32.1	S 20 49.1 -08.2	01						
02	206 26.9 +00.0	S 13 59.6 -00.8	216 43.2 -00.8	S 18 08.5 -00.8	213 46.8 -32.1	S 20 40.9 -08.3	02						
03	221 26.9 +00.0	S 13 58.8 -00.8	231 42.4 -00.7	S 18 07.7 -00.8	228 14.7 -31.9	S 20 32.6 -08.4	03						
04	236 26.9 +00.0	S 13 58.0 -00.9	246 41.7 -00.7	S 18 06.9 -00.8	242 42.8 -31.8	S 20 24.2 -08.5	04						
05	251 26.9 +00.0	S 13 57.1 -00.8	261 41.0 -00.7	S 18 06.1 -00.8	257 11.0 -31.8	S 20 15.7 -08.6	05						
06	266 26.9 +00.0	S 13 56.3 -00.8	276 40.3 -00.7	S 18 05.3 -00.8	271 39.2 -31.6	S 20 07.1 -08.7	06						
07	281 26.9 +00.0	S 13 55.5 -00.8	291 39.6 -00.8	S 18 04.5 -00.8	286 07.6 -31.6	S 19 58.4 -08.8	07						
08	296 26.9 +00.0	S 13 54.7 -00.9	306 38.8 -00.7	S 18 03.7 -00.8	300 36.0 -31.5	S 19 49.6 -08.9	08						
09	311 26.9 +00.0	S 13 53.8 -00.8	321 38.1 -00.7	S 18 02.9 -00.8	315 04.5 -31.3	S 19 40.7 -09.0	09						
10	326 26.9 +00.0	S 13 53.0 -00.8	336 37.4 -00.7	S 18 02.1 -00.8	329 33.2 -31.3	S 19 31.7 -09.1	10						
11	341 26.9 +00.0	S 13 52.2 -00.8	351 36.7 -00.7	S 18 01.3 -00.9	344 01.9 -31.2	S 19 22.6 -09.2	11						
12	356 26.9 +00.0	S 13 51.4 -00.9	6 36.0 -00.7	S 18 00.4 -00.8	358 30.7 -31.2	S 19 13.4 -09.3	12						
13	11 26.9 +00.0	S 13 50.5 -00.8	21 35.3 -00.7	S 17 59.6 -00.8	12 59.5 -31.0	S 19 04.1 -09.4	13						
14	26 26.9 +00.0	S 13 49.7 -00.8	36 34.6 -00.8	S 17 58.8 -00.8	27 28.5 -30.9	S 18 54.7 -09.5	14						
15	41 26.9 +00.0	S 13 48.9 -00.9	51 33.8 -00.7	S 17 58.0 -00.8	41 57.6 -30.9	S 18 45.2 -09.6	15						
16	56 26.9 +00.0	S 13 48.0 -00.8	66 33.1 -00.7	S 17 57.2 -00.8	56 26.7 -30.7	S 18 35.6 -09.7	16						
17	71 26.9 +00.0	S 13 47.2 -00.8	81 32.4 -00.7	S 17 56.4 -00.8	70 56.0 -30.7	S 18 25.9 -09.7	17						
18	86 26.9 +00.0	S 13 46.4 -00.8	96 31.7 -00.7	S 17 55.6 -00.9	85 25.3 -30.6	S 18 16.2 -09.8	18						
19	101 26.9 +00.0	S 13 45.6 -00.9	111 31.0 -00.7	S 17 54.7 -00.8	99 54.7 -30.4	S 18 06.4 -10.0	19						
20	116 26.9 +00.0	S 13 44.7 -00.8	126 30.3 -00.7	S 17 53.9 -00.8	114 24.3 -30.4	S 17 56.4 -10.0	20						
21	131 26.9 +00.0	S 13 43.9 -00.8	141 29.6 -00.8	S 17 53.1 -00.8	128 53.9 -30.4	S 17 46.4 -10.1	21						
22	146 26.9 +00.0	S 13 43.1 -00.9	156 28.8 -00.7	S 17 52.3 -00.8	143 23.5 -30.2	S 17 36.3 -10.2	22						
23	161 26.9 +00.0	S 13 42.2 -00.8	171 28.1 -00.7	S 17 51.5 -00.9	157 53.3 -30.1	S 17 26.1 -10.2	23						
	UT 02 06 10 14 18 22 SD 16'2 16'2 16'2 16'2 16'2 16'2 HP 00'1 00'1 00'1 00'1 00'1 00'1 SHA 035° 035° 035° 035° 034° 034° Greenwich Culmination Time: 12:14	UT 02 06 10 14 18 22 SD 00'1 00'1 00'1 00'1 00'1 00'1 HP 00'1 00'1 00'1 00'1 00'1 00'1 SHA 045° 045° 045° 045° 045° 044° Greenwich Culmination Time: 11:33	UT 02 06 10 14 18 22 SD 15'6 15'6 15'5 15'5 15'5 15'5 HP 57'2 57'2 57'1 57'0 56'9 56'8 SHA 042° 040° 038° 036° 033° 031° Greenwich Culmination Time: 12:06										
UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	96 08.8 +01.1	N 18 29.6 +00.4	186 13.5 +01.8	S 17 35.7 -00.2	192 19.5 +02.2	S 19 04.8 +00.0	00						
01	111 09.9 +01.0	N 18 30.0 +00.4	201 15.3 +01.9	S 17 35.5 -00.2	207 21.7 +02.2	S 19 04.8 -00.1	01						
02	126 10.9 +01.1	N 18 30.4 +00.4	216 17.2 +01.9	S 17 35.3 -00.1	222 23.9 +02.1	S 19 04.7 -00.1	02						
03	141 12.0 +01.1	N 18 30.8 +00.4	231 19.1 +01.9	S 17 35.2 -00.2	237 26.0 +02.2	S 19 04.6 +00.0	03						
04	156 13.1 +01.1	N 18 31.2 +00.4	246 21.0 +01.8	S 17 35.0 -00.1	252 28.2 +02.2	S 19 04.6 -00.1	04						
05	171 14.2 +01.0	N 18 31.6 +00.4	261 22.8 +01.9	S 17 34.9 -00.2	267 30.4 +02.1	S 19 04.5 -00.1	05						
06	186 15.2 +01.1	N 18 32.0 +00.4	276 24.7 +01.9	S 17 34.7 -00.2	282 32.5 +02.2	S 19 04.4 +00.0	06						
07	201 16.3 +01.1	N 18 32.4 +00.4	291 26.6 +01.8	S 17 34.5 -00.1	297 34.7 +02.2	S 19 04.4 -00.1	07						
08	216 17.4 +01.0	N 18 32.8 +00.4	306 28.4 +01.9	S 17 34.4 -00.2	312 36.9 +02.1	S 19 04.3 -00.1	08						
09	231 18.4 +01.1	N 18 33.2 +00.4	321 30.3 +01.9	S 17 34.2 -00.1	327 39.0 +02.2	S 19 04.2 +00.0	09						
10	246 19.5 +01.1	N 18 33.6 +00.4	336 32.2 +01.8	S 17 34.1 -00.2	342 41.2 +02.2	S 19 04.2 -00.1	10						
11	261 20.6 +01.0	N 18 34.0 +00.4	351 34.0 +01.9	S 17 33.9 -00.2	357 43.4 +02.1	S 19 04.1 -00.1	11						
12	276 21.6 +01.1	N 18 34.4 +00.5	6 35.9 +01.9	S 17 33.7 -00.1	12 45.5 +02.2	S 19 04.0 -00.1	12						
13	291 22.7 +01.1	N 18 34.9 +00.4	21 37.8 +01.8	S 17 33.6 -00.2	27 47.7 +02.2	S 19 03.9 +00.0	13						
14	306 23.8 +01.0	N 18 35.3 +00.4	36 39.6 +01.9	S 17 33.4 -00.2	42 49.9 +02.1	S 19 03.9 -00.1	14						
15	321 24.8 +01.1	N 18 35.7 +00.4	51 41.5 +01.9	S 17 33.2 -00.1	57 52.0 +02.2	S 19 03.8 -00.1	15						
16	336 25.9 +01.0	N 18 36.1 +00.4	66 43.4 +01.9	S 17 33.1 -00.2	72 54.2 +02.2	S 19 03.7 +00.0	16						
17	351 26.9 +01.1	N 18 36.5 +00.4	81 45.3 +01.8	S 17 32.9 -00.1	87 56.4 +02.1	S 19 03.7 -00.1	17						
18	6 28.0 +01.1	N 18 36.9 +00.4	96 47.1 +01.9	S 17 32.8 -00.2	102 58.5 +02.2	S 19 03.6 -00.1	18						
19	21 29.1 +01.0	N 18 37.3 +00.4	111 49.0 +01.9	S 17 32.6 -00.2	118 00.7 +02.2	S 19 03.5 +00.0	19						
20	36 30.1 +01.1	N 18 37.7 +00.4	126 50.9 +01.8	S 17 32.4 -00.1	133 02.9 +02.1	S 19 03.5 -00.1	20						
21	51 31.2 +01.1	N 18 38.1 +00.4	141 52.7 +01.9	S 17 32.3 -00.2	148 05.0 +02.2	S 19 03.4 -00.1	21						
22	66 32.3 +01.0	N 18 38.5 +00.4	156 54.6 +01.9	S 17 32.1 -00.2	163 07.2 +02.2	S 19 03.3 +00.0	22						
23	81 33.3 +01.1	N 18 38.9 +00.4	171 56.5 +01.8	S 17 31.9 -00.1	178 09.4 +02.1	S 19 03.3 -00.1	23						
	UT 02 06 10 14 18 22 SD 00'1 00'1 00'1 00'1 00'1 00'1 HP 00'1 00'1 00'1 00'1 00'1 00'1 SHA 315° 315° 315° 315° 314° 314° Greenwich Culmination Time: 17:34	UT 02 06 10 14 18 22 SD 00'3 00'3 00'3 00'3 00'3 00'3 HP 00'0 00'0 00'0 00'0 00'0 00'0 SHA 045° 045° 045° 045° 045° 045° Greenwich Culmination Time: 11:33	UT 02 06 10 14 18 22 SD 00'1 00'1 00'1 00'1 00'1 00'1 HP 00'0 00'0 00'0 00'0 00'0 00'0 SHA 051° 051° 051° 051° 051° 051° Greenwich Culmination Time: 11:09										

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 26.9 +00.0	S 13 41.4 -00.8	186 27.4 -00.7	S 17 50.6 -00.8	172 23.2 -30.0	S 17 15.9 -10.3	00						00
01	191 26.9 +00.0	S 13 40.6 -00.9	201 26.7 -00.7	S 17 49.8 -00.8	186 53.2 -30.0	S 17 05.6 -10.5	01						01
02	206 26.9 +00.0	S 13 39.7 -00.8	216 26.0 -00.7	S 17 49.0 -00.8	201 23.2 -29.9	S 16 55.1 -10.5	02						02
03	221 26.9 +00.1	S 13 38.9 -00.8	231 25.3 -00.7	S 17 48.2 -00.9	215 53.3 -29.7	S 16 44.6 -10.5	03						03
04	236 27.0 +00.0	S 13 38.1 -00.9	246 24.6 -00.7	S 17 47.3 -00.8	230 23.6 -29.7	S 16 34.1 -10.7	04						04
05	251 27.0 +00.0	S 13 37.2 -00.8	261 23.9 -00.7	S 17 46.5 -00.8	244 53.9 -29.6	S 16 23.4 -10.7	05						05
06	266 27.0 +00.0	S 13 36.4 -00.8	276 23.2 -00.7	S 17 45.7 -00.9	259 24.3 -29.6	S 16 12.7 -10.7	06						06
07	281 27.0 +00.0	S 13 35.6 -00.9	291 22.5 -00.7	S 17 44.8 -00.8	273 54.7 -29.4	S 16 02.0 -10.9	07						07
08	296 27.0 +00.0	S 13 34.7 -00.8	306 21.8 -00.7	S 17 44.0 -00.8	288 25.3 -29.3	S 15 51.1 -10.9	08						08
09	311 27.0 +00.0	S 13 33.9 -00.8	321 21.1 -00.7	S 17 43.2 -00.8	302 56.0 -29.3	S 15 40.2 -11.0	09						09
10	326 27.0 +00.0	S 13 33.1 -00.9	336 20.4 -00.8	S 17 42.4 -00.9	317 26.7 -29.2	S 15 29.2 -11.1	10						10
11	341 27.0 +00.0	S 13 32.2 -00.8	351 19.6 -00.7	S 17 41.5 -00.8	331 57.5 -29.1	S 15 18.1 -11.1	11						11
12	356 27.0 +00.0	S 13 31.4 -00.9	6 18.9 -00.7	S 17 40.7 -00.8	346 28.4 -29.0	S 15 07.0 -11.2	12						12
13	11 27.0 +00.0	S 13 30.5 -00.8	21 18.2 -00.7	S 17 39.9 -00.9	0 59.4 -28.9	S 14 55.8 -11.2	13						13
14	26 27.0 +00.1	S 13 29.7 -00.8	36 17.5 -00.7	S 17 39.0 -00.8	15 30.5 -28.9	S 14 44.6 -11.3	14						14
15	41 27.1 +00.0	S 13 28.9 -00.9	51 16.8 -00.7	S 17 38.2 -00.9	30 01.6 -28.7	S 14 33.3 -11.4	15						15
16	56 27.1 +00.0	S 13 28.0 -00.8	66 16.1 -00.7	S 17 37.3 -00.8	44 32.9 -28.7	S 14 21.9 -11.4	16						16
17	71 27.1 +00.0	S 13 27.2 -00.8	81 15.4 -00.7	S 17 36.5 -00.8	59 04.2 -28.6	S 14 10.5 -11.5	17						17
18	86 27.1 +00.0	S 13 26.4 -00.9	96 14.7 -00.7	S 17 35.7 -00.9	73 35.6 -28.6	S 13 59.0 -11.5	18						18
19	101 27.1 +00.0	S 13 25.5 -00.8	111 14.0 -00.7	S 17 34.8 -00.8	88 07.0 -28.4	S 13 47.5 -11.6	19						19
20	116 27.1 +00.0	S 13 24.7 -00.9	126 13.3 -00.7	S 17 34.0 -00.8	102 38.6 -28.4	S 13 35.9 -11.6	20						20
21	131 27.1 +00.0	S 13 23.8 -00.8	141 12.6 -00.7	S 17 33.2 -00.9	117 10.2 -28.3	S 13 24.3 -11.7	21						21
22	146 27.1 +00.0	S 13 23.0 -00.8	156 11.9 -00.7	S 17 32.3 -00.8	131 41.9 -28.2	S 13 12.6 -11.8	22						22
23	161 27.1 +00.1	S 13 22.2 -00.9	171 11.2 -00.7	S 17 31.5 -00.9	146 13.7 -28.1	S 13 00.8 -11.8	23						23
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'2 16'2 16'2 16'2 16'2 16'2		SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 15'4 15'4 15'4 15'4 15'3 15'3								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 56'7 56'6 56'5 56'4 56'3 56'2								
	SHA 034° 034° 034° 034° 033° 033°		SHA 044° 044° 044° 043° 043° 043°		SHA 029° 027° 025° 023° 021° 019°								
	Greenwich Culmination Time: 12:14		Greenwich Culmination Time: 11:34		Greenwich Culmination Time: 12:55								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	96 34.4 +01.0	N 18 39.3 +00.4	186 58.3 +01.9	S 17 31.8 -00.2	193 11.5 +02.2	S 19 03.2 -00.1	00						00
01	111 35.4 +01.1	N 18 39.7 +00.4	202 00.2 +01.9	S 17 31.6 -00.1	208 13.7 +02.2	S 19 03.1 +00.0	01						01
02	126 36.5 +01.1	N 18 40.1 +00.4	217 02.1 +01.9	S 17 31.5 -00.2	223 15.9 +02.1	S 19 03.1 -00.1	02						02
03	141 37.6 +01.0	N 18 40.5 +00.4	232 04.0 +01.8	S 17 31.3 -00.2	238 18.0 +02.2	S 19 03.0 -00.1	03						03
04	156 38.6 +01.1	N 18 40.9 +00.4	247 05.8 +01.9	S 17 31.1 -00.1	253 20.2 +02.2	S 19 02.9 -00.1	04						04
05	171 39.7 +01.1	N 18 41.3 +00.4	262 07.7 +01.9	S 17 31.0 -00.2	268 22.4 +02.1	S 19 02.8 +00.0	05						05
06	186 40.8 +01.0	N 18 41.7 +00.4	277 09.6 +01.8	S 17 30.8 -00.2	283 24.5 +02.2	S 19 02.8 -00.1	06						06
07	201 41.8 +01.1	N 18 42.1 +00.4	292 11.4 +01.9	S 17 30.6 -00.1	298 26.7 +02.2	S 19 02.7 -00.1	07						07
08	216 42.9 +01.0	N 18 42.5 +00.3	307 13.3 +01.9	S 17 30.5 -00.2	313 28.9 +02.1	S 19 02.6 +00.0	08						08
09	231 43.9 +01.1	N 18 42.8 +00.4	322 15.2 +01.8	S 17 30.3 -00.1	328 31.0 +02.2	S 19 02.6 -00.1	09						09
10	246 45.0 +01.1	N 18 43.2 +00.4	337 17.0 +01.9	S 17 30.2 -00.2	343 33.2 +02.2	S 19 02.5 -00.1	10						10
11	261 46.1 +01.0	N 18 43.6 +00.4	352 18.9 +01.9	S 17 30.0 -00.2	358 35.4 +02.1	S 19 02.4 +00.0	11						11
12	276 47.1 +01.1	N 18 44.0 +00.4	7 20.8 +01.9	S 17 29.8 -00.1	13 37.5 +02.2	S 19 02.4 -00.1	12						12
13	291 48.2 +01.0	N 18 44.4 +00.4	22 22.7 +01.8	S 17 29.7 -00.2	28 39.7 +02.2	S 19 02.3 -00.1	13						13
14	306 49.2 +01.1	N 18 44.8 +00.4	37 24.5 +01.9	S 17 29.5 -00.2	43 41.9 +02.1	S 19 02.2 +00.0	14						14
15	321 50.3 +01.0	N 18 45.2 +00.4	52 26.4 +01.9	S 17 29.3 -00.1	58 44.0 +02.2	S 19 02.2 -00.1	15						15
16	336 51.3 +01.1	N 18 45.6 +00.4	67 28.3 +01.8	S 17 29.2 -00.2	73 46.2 +02.2	S 19 02.1 -00.1	16						16
17	351 52.4 +01.1	N 18 46.0 +00.4	82 30.1 +01.9	S 17 29.0 -00.1	88 48.4 +02.1	S 19 02.0 -00.1	17						17
18	6 53.5 +01.0	N 18 46.4 +00.4	97 32.0 +01.9	S 17 28.9 -00.2	103 50.5 +02.2	S 19 01.9 +00.0	18						18
19	21 54.5 +01.1	N 18 46.8 +00.4	112 33.9 +01.9	S 17 28.7 -00.2	118 52.7 +02.2	S 19 01.9 -00.1	19						19
20	36 55.6 +01.0	N 18 47.2 +00.4	127 35.8 +01.8	S 17 28.5 -00.1	133 54.9 +02.1	S 19 01.8 -00.1	20						20
21	51 56.6 +01.1	N 18 47.6 +00.4	142 37.6 +01.9	S 17 28.4 -00.2	148 57.0 +02.2	S 19 01.7 +00.0	21						21
22	66 57.7 +01.0	N 18 48.0 +00.4	157 39.5 +01.9	S 17 28.2 -00.2	163 59.2 +02.2	S 19 01.7 -00.1	22						22
23	81 58.7 +01.1	N 18 48.4 +00.4	172 41.4 +01.8	S 17 28.0 -00.1	179 01.4 +02.1	S 19 01.6 -00.1	23						23
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 00'3 00'3 00'3 00'3 00'3 00'3		SD 00'1 00'1 00'1 00'1 00'1 00'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0								
	SHA 314° 314° 314° 314° 314° 314°		SHA 045° 045° 045° 045° 045° 044°		SHA 051° 051° 051° 051° 051° 051°								
	Greenwich Culmination Time: 17:32		Greenwich Culmination Time: 11:30		Greenwich Culmination Time: 11:05								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 27.2 +00.0	S 13 21.3 -00.8	186 10.5 -00.7	S 17 30.6 -00.8	160 45.6 -28.1	S 12 49.0 -11.8	00						
01	191 27.2 +00.0	S 13 20.5 -00.9	201 09.8 -00.7	S 17 29.8 -00.9	175 17.5 -28.0	S 12 37.2 -11.9	01						
02	206 27.2 +00.0	S 13 19.6 -00.8	216 09.1 -00.7	S 17 28.9 -00.8	189 49.5 -27.9	S 12 25.3 -12.0	02						
03	221 27.2 +00.0	S 13 18.8 -00.9	231 08.4 -00.6	S 17 28.1 -00.9	204 21.6 -27.9	S 12 13.3 -11.9	03						
04	236 27.2 +00.0	S 13 17.9 -00.8	246 07.8 -00.7	S 17 27.2 -00.8	218 53.7 -27.7	S 12 01.4 -12.1	04						
05	251 27.2 +00.0	S 13 17.1 -00.8	261 07.1 -00.7	S 17 26.4 -00.9	233 26.0 -27.7	S 11 49.3 -12.0	05						
06	266 27.2 +00.1	S 13 16.3 -00.9	276 06.4 -00.7	S 17 25.5 -00.8	247 58.3 -27.6	S 11 37.3 -12.2	06						
07	281 27.3 +00.0	S 13 15.4 -00.8	291 05.7 -00.7	S 17 24.7 -00.9	262 30.7 -27.6	S 11 25.1 -12.1	07						
08	296 27.3 +00.0	S 13 14.6 -00.9	306 05.0 -00.7	S 17 23.8 -00.8	277 03.1 -27.5	S 11 13.0 -12.2	08						
09	311 27.3 +00.0	S 13 13.7 -00.8	321 04.3 -00.7	S 17 23.0 -00.9	291 35.6 -27.4	S 11 00.8 -12.2	09						
10	326 27.3 +00.0	S 13 12.9 -00.9	336 03.6 -00.7	S 17 22.1 -00.8	306 08.2 -27.4	S 10 48.6 -12.3	10						
11	341 27.3 +00.0	S 13 12.0 -00.8	351 02.9 -00.7	S 17 21.3 -00.9	320 40.8 -27.3	S 10 36.3 -12.3	11						
12	356 27.3 +00.1	S 13 11.2 -00.9	6 02.2 -00.7	S 17 20.4 -00.8	335 13.5 -27.2	S 10 24.0 -12.3	12						
13	11 27.4 +00.0	S 13 10.3 -00.8	21 01.5 -00.7	S 17 19.6 -00.9	349 46.3 -27.1	S 10 11.7 -12.4	13						
14	26 27.4 +00.0	S 13 09.5 -00.9	36 00.8 -00.7	S 17 18.7 -00.8	4 19.2 -27.1	S 09 59.3 -12.4	14						
15	41 27.4 +00.0	S 13 08.6 -00.8	51 00.1 -00.7	S 17 17.9 -00.9	18 52.1 -27.0	S 09 46.9 -12.4	15						
16	56 27.4 +00.0	S 13 07.8 -00.8	65 59.4 -00.6	S 17 17.0 -00.8	33 25.1 -27.0	S 09 34.5 -12.5	16						
17	71 27.4 +00.1	S 13 07.0 -00.9	80 58.8 -00.7	S 17 16.2 -00.9	47 58.1 -26.9	S 09 22.0 -12.5	17						
18	86 27.5 +00.0	S 13 06.1 -00.8	95 58.1 -00.7	S 17 15.3 -00.9	62 31.2 -26.8	S 09 09.5 -12.5	18						
19	101 27.5 +00.0	S 13 05.3 -00.9	110 57.4 -00.7	S 17 14.4 -00.8	77 04.4 -26.8	S 08 57.0 -12.6	19						
20	116 27.5 +00.0	S 13 04.4 -00.8	125 56.7 -00.7	S 17 13.6 -00.9	91 37.6 -26.7	S 08 44.4 -12.6	20						
21	131 27.5 +00.0	S 13 03.6 -00.9	140 56.0 -00.7	S 17 12.7 -00.9	106 10.9 -26.7	S 08 31.8 -12.6	21						
22	146 27.5 +00.1	S 13 02.7 -00.8	155 55.3 -00.7	S 17 11.8 -00.8	120 44.2 -26.6	S 08 19.2 -12.6	22						
23	161 27.6 +00.0	S 13 01.9 -00.9	170 54.6 -00.7	S 17 11.0 -00.9	135 17.6 -26.6	S 08 06.6 -12.7	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'2 16'2 16'2 16'2 16'2 16'2		SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 15'3 15'3 15'2 15'2 15'2 15'2								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 56'1 56'0 55'9 55'8 55'7 55'6								
	SHA 033° 033° 033° 033° 032° 032°		SHA 043° 043° 042° 042° 042° 042°		SHA 016° 014° 012° 010° 009° 007°								
	Greenwich Culmination Time: 12:14		Greenwich Culmination Time: 11:35		Greenwich Culmination Time: 13:42								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	96 59.8 +01.1	N 18 48.8 +00.4	187 43.2 +01.9	S 17 27.9 -00.2	194 03.5 +02.2	S 19 01.5 +00.0	00						
01	112 00.9 +01.0	N 18 49.2 +00.4	202 45.1 +01.9	S 17 27.7 -00.2	209 05.7 +02.2	S 19 01.5 -00.1	01						
02	127 01.9 +01.1	N 18 49.6 +00.4	217 47.0 +01.8	S 17 27.5 -00.1	224 07.9 +02.1	S 19 01.4 -00.1	02						
03	142 03.0 +01.0	N 18 50.0 +00.4	232 48.8 +01.9	S 17 27.4 -00.2	239 10.0 +02.2	S 19 01.3 +00.0	03						
04	157 04.0 +01.1	N 18 50.4 +00.4	247 50.7 +01.9	S 17 27.2 -00.1	254 12.2 +02.2	S 19 01.3 -00.1	04						
05	172 05.1 +01.0	N 18 50.8 +00.4	262 52.6 +01.9	S 17 27.1 -00.2	269 14.4 +02.1	S 19 01.2 -00.1	05						
06	187 06.1 +01.1	N 18 51.2 +00.4	277 54.5 +01.8	S 17 26.9 -00.2	284 16.5 +02.2	S 19 01.1 -00.1	06						
07	202 07.2 +01.0	N 18 51.6 +00.4	292 56.3 +01.9	S 17 26.7 -00.1	299 18.7 +02.2	S 19 01.0 +00.0	07						
08	217 08.2 +01.1	N 18 52.0 +00.4	307 58.2 +01.9	S 17 26.6 -00.2	314 20.9 +02.2	S 19 01.0 -00.1	08						
09	232 09.3 +01.0	N 18 52.4 +00.4	323 00.1 +01.8	S 17 26.4 -00.2	329 23.1 +02.1	S 19 00.9 -00.1	09						
10	247 10.3 +01.1	N 18 52.8 +00.4	338 01.9 +01.9	S 17 26.2 -00.1	344 25.2 +02.2	S 19 00.8 +00.0	10						
11	262 11.4 +01.0	N 18 53.2 +00.4	353 03.8 +01.9	S 17 26.1 -00.2	359 27.4 +02.2	S 19 00.8 -00.1	11						
12	277 12.4 +01.1	N 18 53.6 +00.4	8 05.7 +01.9	S 17 25.9 -00.1	14 29.6 +02.1	S 19 00.7 -00.1	12						
13	292 13.5 +01.0	N 18 54.0 +00.4	23 07.6 +01.8	S 17 25.8 -00.2	29 31.7 +02.2	S 19 00.6 +00.0	13						
14	307 14.5 +01.1	N 18 54.4 +00.3	38 09.4 +01.9	S 17 25.6 -00.2	44 33.9 +02.2	S 19 00.6 -00.1	14						
15	322 15.6 +01.0	N 18 54.7 +00.4	53 11.3 +01.9	S 17 25.4 -00.1	59 36.1 +02.1	S 19 00.5 -00.1	15						
16	337 16.6 +01.1	N 18 55.1 +00.4	68 13.2 +01.9	S 17 25.3 -00.2	74 38.2 +02.2	S 19 00.4 +00.0	16						
17	352 17.7 +01.0	N 18 55.5 +00.4	83 15.1 +01.8	S 17 25.1 -00.2	89 40.4 +02.2	S 19 00.4 -00.1	17						
18	7 18.7 +01.1	N 18 55.9 +00.4	98 16.9 +01.9	S 17 24.9 -00.1	104 42.6 +02.1	S 19 00.3 -00.1	18						
19	22 19.8 +01.0	N 18 56.3 +00.4	113 18.8 +01.9	S 17 24.8 -00.2	119 44.7 +02.2	S 19 00.2 -00.1	19						
20	37 20.8 +01.1	N 18 56.7 +00.4	128 20.7 +01.8	S 17 24.6 -00.2	134 46.9 +02.2	S 19 00.1 +00.0	20						
21	52 21.9 +01.0	N 18 57.1 +00.4	143 22.5 +01.9	S 17 24.4 -00.1	149 49.1 +02.1	S 19 00.1 -00.1	21						
22	67 22.9 +01.1	N 18 57.5 +00.4	158 24.4 +01.9	S 17 24.3 -00.2	164 51.2 +02.2	S 19 00.0 -00.1	22						
23	82 24.0 +01.0	N 18 57.9 +00.4	173 26.3 +01.9	S 17 24.1 -00.1	179 53.4 +02.2	S 18 59.9 +00.0	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 00'3 00'3 00'3 00'3 00'3 00'3		SD 00'1 00'1 00'1 00'1 00'1 00'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0								
	SHA 314° 314° 314° 313° 313° 313°		SHA 044° 044° 044° 044° 044° 044°		SHA 051° 051° 051° 051° 051° 051°								
	Greenwich Culmination Time: 17:30		Greenwich Culmination Time: 11:27		Greenwich Culmination Time: 11:02								

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 27.6 +00.0	S 13 01.0 -00.8	185 53.9 -00.6	S 17 10.1 -00.8	149 51.0 -26.5	S 07 53.9 -12.6	00						
01	191 27.6 +00.0	S 13 00.2 -00.9	200 53.3 -00.7	S 17 09.3 -00.9	164 24.5 -26.4	S 07 41.3 -12.7	01						
02	206 27.6 +00.0	S 12 59.3 -00.8	215 52.6 -00.7	S 17 08.4 -00.9	178 58.1 -26.4	S 07 28.6 -12.7	02						
03	221 27.6 +00.1	S 12 58.5 -00.9	230 51.9 -00.7	S 17 07.5 -00.8	193 31.7 -26.3	S 07 15.9 -12.8	03						
04	236 27.7 +00.0	S 12 57.6 -00.8	245 51.2 -00.7	S 17 06.7 -00.9	208 05.4 -26.3	S 07 03.1 -12.7	04						
05	251 27.7 +00.0	S 12 56.8 -00.9	260 50.5 -00.7	S 17 05.8 -00.9	222 39.1 -26.2	S 06 50.4 -12.8	05						
06	266 27.7 +00.0	S 12 55.9 -00.9	275 49.8 -00.6	S 17 04.9 -00.9	237 12.9 -26.2	S 06 37.6 -12.8	06						
07	281 27.7 +00.1	S 12 55.0 -00.8	290 49.2 -00.7	S 17 04.0 -00.8	251 46.7 -26.2	S 06 24.8 -12.8	07						
08	296 27.8 +00.0	S 12 54.2 -00.9	305 48.5 -00.7	S 17 03.2 -00.9	266 20.5 -26.0	S 06 12.0 -12.8	08						
09	311 27.8 +00.0	S 12 53.3 -00.8	320 47.8 -00.7	S 17 02.3 -00.9	280 54.5 -26.1	S 05 59.2 -12.8	09						
10	326 27.8 +00.0	S 12 52.5 -00.9	335 47.1 -00.7	S 17 01.4 -00.8	295 28.4 -26.0	S 05 46.4 -12.9	10						
11	341 27.8 +00.1	S 12 51.6 -00.8	350 46.4 -00.6	S 17 00.6 -00.9	310 02.4 -25.9	S 05 33.5 -12.8	11						
12	356 27.9 +00.0	S 12 50.8 -00.9	5 45.8 -00.7	S 16 59.7 -00.9	324 36.5 -25.9	S 05 20.7 -12.9	12						
13	11 27.9 +00.0	S 12 49.9 -00.8	20 45.1 -00.7	S 16 58.8 -00.9	339 10.6 -25.9	S 05 07.8 -12.9	13						
14	26 27.9 +00.0	S 12 49.1 -00.9	35 44.4 -00.7	S 16 57.9 -00.8	353 44.7 -25.8	S 04 54.9 -12.9	14						
15	41 27.9 +00.1	S 12 48.2 -00.8	50 43.7 -00.6	S 16 57.1 -00.9	8 18.9 -25.8	S 04 42.0 -12.9	15						
16	56 28.0 +00.0	S 12 47.4 -00.9	65 43.1 -00.7	S 16 56.2 -00.9	22 53.1 -25.7	S 04 29.1 -12.9	16						
17	71 28.0 +00.0	S 12 46.5 -00.9	80 42.4 -00.7	S 16 55.3 -00.9	37 27.4 -25.7	S 04 16.2 -12.9	17						
18	86 28.0 +00.0	S 12 45.6 -00.8	95 41.7 -00.7	S 16 54.4 -00.9	52 01.7 -25.6	S 04 03.3 -12.9	18						
19	101 28.0 +00.1	S 12 44.8 -00.9	110 41.0 -00.7	S 16 53.5 -00.8	66 36.1 -25.7	S 03 50.4 -12.9	19						
20	116 28.1 +00.0	S 12 43.9 -00.8	125 40.3 -00.6	S 16 52.7 -00.9	81 10.4 -25.5	S 03 37.5 -13.0	20						
21	131 28.1 +00.0	S 12 43.1 -00.9	140 39.7 -00.7	S 16 51.8 -00.9	95 44.9 -25.6	S 03 24.5 -12.9	21						
22	146 28.1 +00.1	S 12 42.2 -00.8	155 39.0 -00.7	S 16 50.9 -00.9	110 19.3 -25.5	S 03 11.6 -12.9	22						
23	161 28.2 +00.0	S 12 41.4 -00.9	170 38.3 -00.6	S 16 50.0 -00.9	124 53.8 -25.5	S 02 58.7 -13.0	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'2 16'2 16'2 16'2 16'2 16'2		SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 15'1 15'1 15'1 15'1 15'0 15'0								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 55'5 55'5 55'4 55'3 55'2 55'1								
	SHA 032° 032° 032° 032° 031° 031°		SHA 042° 041° 041° 041° 041° 041°		SHA 005° 003° 001° 359° 357° 355°								
	Greenwich Culmination Time: 12:14		Greenwich Culmination Time: 11:36		Greenwich Culmination Time: 14:25								

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	97 25.0 +01.1	N 18 58.3 +00.4	188 28.2 +01.8	S 17 24.0 -00.2	194 55.6 +02.2	S 18 59.9 -00.1	00						
01	112 26.1 +01.0	N 18 58.7 +00.4	203 30.0 +01.9	S 17 23.8 -00.2	209 57.8 +02.1	S 18 59.8 -00.1	01						
02	127 27.1 +01.1	N 18 59.1 +00.4	218 31.9 +01.9	S 17 23.6 -00.1	224 59.9 +02.2	S 18 59.7 +00.0	02						
03	142 28.2 +01.0	N 18 59.5 +00.4	233 33.8 +01.8	S 17 23.5 -00.2	240 02.1 +02.2	S 18 59.7 -00.1	03						
04	157 29.2 +01.1	N 18 59.9 +00.4	248 35.6 +01.9	S 17 23.3 -00.2	255 04.3 +02.1	S 18 59.6 -00.1	04						
05	172 30.3 +01.0	N 19 00.3 +00.3	263 37.5 +01.9	S 17 23.1 -00.1	270 06.4 +02.2	S 18 59.5 +00.0	05						
06	187 31.3 +01.1	N 19 00.6 +00.4	278 39.4 +01.9	S 17 23.0 -00.2	285 08.6 +02.2	S 18 59.5 -00.1	06						
07	202 32.4 +01.0	N 19 01.0 +00.4	293 41.3 +01.8	S 17 22.8 -00.1	300 10.8 +02.1	S 18 59.4 -00.1	07						
08	217 33.4 +01.1	N 19 01.4 +00.4	308 43.1 +01.9	S 17 22.7 -00.2	315 12.9 +02.2	S 18 59.3 +00.0	08						
09	232 34.5 +01.0	N 19 01.8 +00.4	323 45.0 +01.9	S 17 22.5 -00.2	330 15.1 +02.2	S 18 59.3 -00.1	09						
10	247 35.5 +01.1	N 19 02.2 +00.4	338 46.9 +01.9	S 17 22.3 -00.1	345 17.3 +02.1	S 18 59.2 -00.1	10						
11	262 36.6 +01.0	N 19 02.6 +00.4	353 48.8 +01.8	S 17 22.2 -00.2	0 19.4 +02.2	S 18 59.1 -00.1	11						
12	277 37.6 +01.0	N 19 03.0 +00.4	8 50.6 +01.9	S 17 22.0 -00.2	15 21.6 +02.2	S 18 59.0 +00.0	12						
13	292 38.6 +01.1	N 19 03.4 +00.4	23 52.5 +01.9	S 17 21.8 -00.1	30 23.8 +02.1	S 18 59.0 -00.1	13						
14	307 39.7 +01.0	N 19 03.8 +00.4	38 54.4 +01.9	S 17 21.7 -00.2	45 25.9 +02.2	S 18 58.9 -00.1	14						
15	322 40.7 +01.1	N 19 04.2 +00.4	53 56.3 +01.8	S 17 21.5 -00.2	60 28.1 +02.2	S 18 58.8 +00.0	15						
16	337 41.8 +01.0	N 19 04.6 +00.4	68 58.1 +01.9	S 17 21.3 -00.1	75 30.3 +02.2	S 18 58.8 -00.1	16						
17	352 42.8 +01.1	N 19 05.0 +00.3	83 60.0 +01.9	S 17 21.2 -00.2	90 32.5 +02.1	S 18 58.7 -00.1	17						
18	7 43.9 +01.0	N 19 05.3 +00.4	99 01.9 +01.8	S 17 21.0 -00.1	105 34.6 +02.2	S 18 58.6 +00.0	18						
19	22 44.9 +01.1	N 19 05.7 +00.4	114 03.7 +01.9	S 17 20.9 -00.2	120 36.8 +02.2	S 18 58.6 -00.1	19						
20	37 46.0 +01.0	N 19 06.1 +00.4	129 05.6 +01.9	S 17 20.7 -00.2	135 39.0 +02.1	S 18 58.5 -00.1	20						
21	52 47.0 +01.0	N 19 06.5 +00.4	144 07.5 +01.9	S 17 20.5 -00.1	150 41.1 +02.2	S 18 58.4 +00.0	21						
22	67 48.0 +01.1	N 19 06.9 +00.4	159 09.4 +01.8	S 17 20.4 -00.2	165 43.3 +02.2	S 18 58.4 -00.1	22						
23	82 49.1 +01.0	N 19 07.3 +00.4	174 11.2 +01.9	S 17 20.2 -00.2	180 45.5 +02.1	S 18 58.3 -00.1	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 00'3 00'3 00'3 00'3 00'3 00'3		SD 00'1 00'1 00'1 00'1 00'1 00'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0								
	SHA 313° 313° 313° 313° 313° 313°		SHA 044° 044° 044° 044° 044° 044°		SHA 051° 051° 051° 051° 051° 051°								
	Greenwich Culmination Time: 17:29		Greenwich Culmination Time: 11:24		Greenwich Culmination Time: 10:58								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 28.2 +00.0	S	12 40.5 -00.9	185 37.7 -00.7	S	16 49.1 -00.9	139 28.3 -25.4	S	02 45.7 -12.9	00			
01	191 28.2 +00.0	S	12 39.6 -00.8	200 37.0 -00.7	S	16 48.2 -00.8	154 02.9 -25.4	S	02 32.8 -12.9	01			
02	206 28.2 +00.1	S	12 38.8 -00.9	215 36.3 -00.7	S	16 47.4 -00.9	168 37.5 -25.4	S	02 19.9 -13.0	02			
03	221 28.3 +00.0	S	12 37.9 -00.8	230 35.6 -00.6	S	16 46.5 -00.9	183 12.1 -25.4	S	02 06.9 -12.9	03			
04	236 28.3 +00.0	S	12 37.1 -00.9	245 35.0 -00.7	S	16 45.6 -00.9	197 46.7 -25.3	S	01 54.0 -12.9	04			
05	251 28.3 +00.1	S	12 36.2 -00.9	260 34.3 -00.7	S	16 44.7 -00.9	212 21.4 -25.3	S	01 41.1 -13.0	05			
06	266 28.4 +00.0	S	12 35.3 -00.8	275 33.6 -00.6	S	16 43.8 -00.9	226 56.1 -25.3	S	01 28.1 -12.9	06			
07	281 28.4 +00.0	S	12 34.5 -00.9	290 33.0 -00.7	S	16 42.9 -00.9	241 30.8 -25.2	S	01 15.2 -12.9	07			
08	296 28.4 +00.1	S	12 33.6 -00.8	305 32.3 -00.7	S	16 42.0 -00.9	256 05.6 -25.2	S	01 02.3 -12.9	08			
09	311 28.5 +00.0	S	12 32.8 -00.9	320 31.6 -00.6	S	16 41.1 -00.9	270 40.4 -25.2	S	00 49.4 -12.9	09			
10	326 28.5 +00.0	S	12 31.9 -00.9	335 31.0 -00.7	S	16 40.2 -00.8	285 15.2 -25.2	S	00 36.5 -12.9	10			
11	341 28.5 +00.0	S	12 31.0 -00.8	350 30.3 -00.7	S	16 39.4 -00.9	299 50.0 -25.1	S	00 23.6 -12.9	11			
12	356 28.5 +00.1	S	12 30.2 -00.9	5 29.6 -00.6	S	16 38.5 -00.9	314 24.9 -25.2	S	00 10.7 -12.9	12			
13	11 28.6 +00.0	S	12 29.3 -00.9	20 29.0 -00.7	S	16 37.6 -00.9	328 59.7 -25.1	N	00 02.2 +12.9	13			
14	26 28.6 +00.0	S	12 28.4 -00.8	35 28.3 -00.7	S	16 36.7 -00.9	343 34.6 -25.1	N	00 15.1 +12.8	14			
15	41 28.6 +00.1	S	12 27.6 -00.9	50 27.6 -00.6	S	16 35.8 -00.9	358 09.5 -25.0	N	00 27.9 +12.9	15			
16	56 28.7 +00.0	S	12 26.7 -00.9	65 27.0 -00.7	S	16 34.9 -00.9	12 44.5 -25.1	N	00 40.8 +12.8	16			
17	71 28.7 +00.1	S	12 25.8 -00.8	80 26.3 -00.7	S	16 34.0 -00.9	27 19.4 -25.0	N	00 53.6 +12.9	17			
18	86 28.8 +00.0	S	12 25.0 -00.9	95 25.6 -00.6	S	16 33.1 -00.9	41 54.4 -25.1	N	01 06.5 +12.8	18			
19	101 28.8 +00.0	S	12 24.1 -00.9	110 25.0 -00.7	S	16 32.2 -00.9	56 29.3 -25.0	N	01 19.3 +12.8	19			
20	116 28.8 +00.1	S	12 23.2 -00.8	125 24.3 -00.7	S	16 31.3 -00.9	71 04.3 -25.0	N	01 32.1 +12.8	20			
21	131 28.9 +00.0	S	12 22.4 -00.9	140 23.6 -00.6	S	16 30.4 -00.9	85 39.3 -24.9	N	01 44.9 +12.7	21			
22	146 28.9 +00.0	S	12 21.5 -00.9	155 23.0 -00.7	S	16 29.5 -00.9	100 14.4 -25.0	N	01 57.6 +12.8	22			
23	161 28.9 +00.1	S	12 20.6 -00.8	170 22.3 -00.6	S	16 28.6 -00.9	114 49.4 -25.0	N	02 10.4 +12.7	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'0 15'0 15'0 14'9 14'9 14'9						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 55'0 55'0 54'9 54'8 54'8 54'7						
	SHA 031° 031° 031° 031° 031° 030°			SHA 040° 040° 040° 040° 039° 039°			SHA 353° 351° 350° 348° 346° 344°						
	Greenwich Culmination Time: 12:14			Greenwich Culmination Time: 11:38			Greenwich Culmination Time: 15:07						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	97 50.1 +01.1	N	19 07.7 +00.4	189 13.1 +01.9	S	17 20.0 -00.1	195 47.6 +02.2	S	18 58.2 -00.1	00			
01	112 51.2 +01.0	N	19 08.1 +00.4	204 15.0 +01.9	S	17 19.9 -00.2	210 49.8 +02.2	S	18 58.1 +00.0	01			
02	127 52.2 +01.1	N	19 08.5 +00.4	219 16.9 +01.8	S	17 19.7 -00.2	225 52.0 +02.2	S	18 58.1 -00.1	02			
03	142 53.3 +01.0	N	19 08.9 +00.3	234 18.7 +01.9	S	17 19.5 -00.1	240 54.2 +02.1	S	18 58.0 -00.1	03			
04	157 54.3 +01.0	N	19 09.2 +00.4	249 20.6 +01.9	S	17 19.4 -00.2	255 56.3 +02.2	S	18 57.9 +00.0	04			
05	172 55.3 +01.1	N	19 09.6 +00.4	264 22.5 +01.9	S	17 19.2 -00.1	270 58.5 +02.2	S	18 57.9 -00.1	05			
06	187 56.4 +01.0	N	19 10.0 +00.4	279 24.4 +01.8	S	17 19.1 -00.2	286 00.7 +02.1	S	18 57.8 -00.1	06			
07	202 57.4 +01.1	N	19 10.4 +00.4	294 26.2 +01.9	S	17 18.9 -00.2	301 02.8 +02.2	S	18 57.7 +00.0	07			
08	217 58.5 +01.0	N	19 10.8 +00.4	309 28.1 +01.9	S	17 18.7 -00.1	316 05.0 +02.2	S	18 57.7 -00.1	08			
09	232 59.5 +01.0	N	19 11.2 +00.4	324 30.0 +01.9	S	17 18.6 -00.2	331 07.2 +02.1	S	18 57.6 -00.1	09			
10	248 00.5 +01.1	N	19 11.6 +00.4	339 31.9 +01.8	S	17 18.4 -00.2	346 09.3 +02.2	S	18 57.5 +00.0	10			
11	263 01.6 +01.0	N	19 12.0 +00.4	354 33.7 +01.9	S	17 18.2 -00.1	1 11.5 +02.2	S	18 57.5 -00.1	11			
12	278 02.6 +01.0	N	19 12.4 +00.3	9 35.6 +01.9	S	17 18.1 -00.2	16 13.7 +02.2	S	18 57.4 -00.1	12			
13	293 03.6 +01.1	N	19 12.7 +00.4	24 37.5 +01.8	S	17 17.9 -00.2	31 15.9 +02.1	S	18 57.3 +00.0	13			
14	308 04.7 +01.0	N	19 13.1 +00.4	39 39.3 +01.9	S	17 17.7 -00.1	46 18.0 +02.2	S	18 57.3 -00.1	14			
15	323 05.7 +01.1	N	19 13.5 +00.4	54 41.2 +01.9	S	17 17.6 -00.2	61 20.2 +02.2	S	18 57.2 -00.1	15			
16	338 06.8 +01.0	N	19 13.9 +00.4	69 43.1 +01.9	S	17 17.4 -00.2	76 22.4 +02.1	S	18 57.1 -00.1	16			
17	353 07.8 +01.0	N	19 14.3 +00.4	84 45.0 +01.8	S	17 17.2 -00.1	91 24.5 +02.2	S	18 57.0 +00.0	17			
18	8 08.8 +01.1	N	19 14.7 +00.4	99 46.8 +01.9	S	17 17.1 -00.2	106 26.7 +02.2	S	18 57.0 -00.1	18			
19	23 09.9 +01.0	N	19 15.1 +00.4	114 48.7 +01.9	S	17 16.9 -00.1	121 28.9 +02.2	S	18 56.9 -00.1	19			
20	38 10.9 +01.0	N	19 15.5 +00.3	129 50.6 +01.9	S	17 16.8 -00.2	136 31.1 +02.1	S	18 56.8 +00.0	20			
21	53 11.9 +01.1	N	19 15.8 +00.4	144 52.5 +01.8	S	17 16.6 -00.2	151 33.2 +02.2	S	18 56.8 -00.1	21			
22	68 13.0 +01.0	N	19 16.2 +00.4	159 54.3 +01.9	S	17 16.4 -00.1	166 35.4 +02.2	S	18 56.7 -00.1	22			
23	83 14.0 +01.1	N	19 16.6 +00.4	174 56.2 +01.9	S	17 16.3 -00.2	181 37.6 +02.1	S	18 56.6 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 313° 312° 312° 312° 312° 312°			SHA 044° 044° 044° 044° 044° 044°			SHA 051° 051° 051° 051° 050° 050°						
	Greenwich Culmination Time: 17:27			Greenwich Culmination Time: 11:21			Greenwich Culmination Time: 10:55						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 29.0 +00.0	S	12 19.8 -00.9	185 21.7 -00.7	S	16 27.7 -00.9	129 24.4 -24.9	N	02 23.1 +12.8				
01	191 29.0 +00.0	S	12 18.9 -00.9	200 21.0 -00.7	S	16 26.8 -00.9	143 59.5 -25.0	N	02 35.9 +12.7				
02	206 29.0 +00.1	S	12 18.0 -00.8	215 20.3 -00.6	S	16 25.9 -00.9	158 34.5 -24.9	N	02 48.6 +12.7				
03	221 29.1 +00.0	S	12 17.2 -00.9	230 19.7 -00.7	S	16 25.0 -01.0	173 09.6 -24.9	N	03 01.3 +12.6				
04	236 29.1 +00.1	S	12 16.3 -00.9	245 19.0 -00.6	S	16 24.0 -00.9	187 44.7 -25.0	N	03 13.9 +12.7				
05	251 29.2 +00.0	S	12 15.4 -00.8	260 18.4 -00.7	S	16 23.1 -00.9	202 19.7 -24.9	N	03 26.6 +12.6				
06	266 29.2 +00.0	S	12 14.6 -00.9	275 17.7 -00.6	S	16 22.2 -00.9	216 54.8 -24.9	N	03 39.2 +12.6				
07	281 29.2 +00.1	S	12 13.7 -00.9	290 17.1 -00.7	S	16 21.3 -00.9	231 29.9 -24.9	N	03 51.8 +12.6				
08	296 29.3 +00.0	S	12 12.8 -00.8	305 16.4 -00.7	S	16 20.4 -00.9	246 05.0 -24.9	N	04 04.4 +12.6				
09	311 29.3 +00.0	S	12 12.0 -00.9	320 15.7 -00.6	S	16 19.5 -00.9	260 40.1 -24.9	N	04 17.0 +12.5				
10	326 29.3 +00.1	S	12 11.1 -00.9	335 15.1 -00.7	S	16 18.6 -00.9	275 15.2 -24.9	N	04 29.5 +12.5				
11	341 29.4 +00.0	S	12 10.2 -00.9	350 14.4 -00.6	S	16 17.7 -00.9	289 50.3 -24.9	N	04 42.0 +12.5				
12	356 29.4 +00.1	S	12 09.3 -00.8	5 13.8 -00.7	S	16 16.8 -00.9	304 25.4 -25.0	N	04 54.5 +12.5				
13	11 29.5 +00.0	S	12 08.5 -00.9	20 13.1 -00.6	S	16 15.9 -01.0	319 00.4 -24.9	N	05 07.0 +12.4				
14	26 29.5 +00.1	S	12 07.6 -00.9	35 12.5 -00.7	S	16 14.9 -00.9	333 35.5 -24.9	N	05 19.4 +12.4				
15	41 29.6 +00.0	S	12 06.7 -00.8	50 11.8 -00.6	S	16 14.0 -00.9	348 10.6 -24.9	N	05 31.8 +12.4				
16	56 29.6 +00.0	S	12 05.9 -00.9	65 11.2 -00.7	S	16 13.1 -00.9	2 45.7 -24.9	N	05 44.2 +12.4				
17	71 29.6 +00.1	S	12 05.0 -00.9	80 10.5 -00.6	S	16 12.2 -00.9	17 20.8 -25.0	N	05 56.6 +12.3				
18	86 29.7 +00.0	S	12 04.1 -00.9	95 09.9 -00.7	S	16 11.3 -00.9	31 55.8 -24.9	N	06 08.9 +12.3				
19	101 29.7 +00.1	S	12 03.2 -00.8	110 09.2 -00.6	S	16 10.4 -01.0	46 30.9 -25.0	N	06 21.2 +12.3				
20	116 29.8 +00.0	S	12 02.4 -00.9	125 08.6 -00.7	S	16 09.4 -00.9	61 05.9 -24.9	N	06 33.5 +12.2				
21	131 29.8 +00.0	S	12 01.5 -00.9	140 07.9 -00.6	S	16 08.5 -00.9	75 41.0 -25.0	N	06 45.7 +12.2				
22	146 29.8 +00.1	S	12 00.6 -00.9	155 07.3 -00.7	S	16 07.6 -00.9	90 16.0 -25.0	N	06 57.9 +12.2				
23	161 29.9 +00.0	S	11 59.7 -00.8	170 06.6 -00.6	S	16 06.7 -01.0	104 51.0 -25.0	N	07 10.1 +12.2				
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22				UT 02 06 10 14 18 22					
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 14'9 14'9 14'9 14'8 14'8 14'8					
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 54'6 54'6 54'5 54'5 54'4 54'4					
	SHA 030° 030° 030° 030° 030° 029°			SHA 039° 039° 039° 038° 038° 038°				SHA 342° 340° 339° 337° 335° 333°					
	Greenwich Culmination Time: 12:14			Greenwich Culmination Time: 11:39				Greenwich Culmination Time: 15:48					

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	98 15.1 +01.0	N	19 17.0 +00.4	189 58.1 +01.9	S	17 16.1 -00.2	196 39.7 +02.2	S	18 56.6 -00.1				
01	113 16.1 +01.0	N	19 17.4 +00.4	204 60.0 +01.8	S	17 15.9 -00.1	211 41.9 +02.2	S	18 56.5 -00.1				
02	128 17.1 +01.1	N	19 17.8 +00.4	220 01.8 +01.9	S	17 15.8 -00.2	226 44.1 +02.2	S	18 56.4 +00.0				
03	143 18.2 +01.0	N	19 18.2 +00.3	235 03.7 +01.9	S	17 15.6 -00.2	241 46.3 +02.1	S	18 56.4 -00.1				
04	158 19.2 +01.0	N	19 18.5 +00.4	250 05.6 +01.9	S	17 15.4 -00.1	256 48.4 +02.2	S	18 56.3 -00.1				
05	173 20.2 +01.1	N	19 18.9 +00.4	265 07.5 +01.8	S	17 15.3 -00.2	271 50.6 +02.2	S	18 56.2 -00.1				
06	188 21.3 +01.0	N	19 19.3 +00.4	280 09.3 +01.9	S	17 15.1 -00.1	286 52.8 +02.1	S	18 56.1 +00.0				
07	203 22.3 +01.0	N	19 19.7 +00.4	295 11.2 +01.9	S	17 15.0 -00.2	301 54.9 +02.2	S	18 56.1 -00.1				
08	218 23.3 +01.1	N	19 20.1 +00.4	310 13.1 +01.9	S	17 14.8 -00.2	316 57.1 +02.2	S	18 56.0 -00.1				
09	233 24.4 +01.0	N	19 20.5 +00.4	325 15.0 +01.9	S	17 14.6 -00.1	331 59.3 +02.2	S	18 55.9 +00.0				
10	248 25.4 +01.0	N	19 20.9 +00.3	340 16.9 +01.8	S	17 14.5 -00.2	347 01.5 +02.1	S	18 55.9 -00.1				
11	263 26.4 +01.1	N	19 21.2 +00.4	355 18.7 +01.9	S	17 14.3 -00.2	2 03.6 +02.2	S	18 55.8 -00.1				
12	278 27.5 +01.0	N	19 21.6 +00.4	10 20.6 +01.9	S	17 14.1 -00.1	17 05.8 +02.2	S	18 55.7 +00.0				
13	293 28.5 +01.0	N	19 22.0 +00.4	25 22.5 +01.9	S	17 14.0 -00.2	32 08.0 +02.1	S	18 55.7 -00.1				
14	308 29.5 +01.1	N	19 22.4 +00.4	40 24.4 +01.8	S	17 13.8 -00.2	47 10.1 +02.2	S	18 55.6 -00.1				
15	323 30.6 +01.0	N	19 22.8 +00.4	55 26.2 +01.9	S	17 13.6 -00.1	62 12.3 +02.2	S	18 55.5 +00.0				
16	338 31.6 +01.0	N	19 23.2 +00.4	70 28.1 +01.9	S	17 13.5 -00.2	77 14.5 +02.2	S	18 55.5 -00.1				
17	353 32.6 +01.0	N	19 23.6 +00.3	85 30.0 +01.9	S	17 13.3 -00.2	92 16.7 +02.1	S	18 55.4 -00.1				
18	8 33.6 +01.1	N	19 23.9 +00.4	100 31.9 +01.8	S	17 13.1 -00.1	107 18.8 +02.2	S	18 55.3 +00.0				
19	23 34.7 +01.0	N	19 24.3 +00.4	115 33.7 +01.9	S	17 13.0 -00.2	122 21.0 +02.2	S	18 55.3 -00.1				
20	38 35.7 +01.0	N	19 24.7 +00.4	130 35.6 +01.9	S	17 12.8 -00.1	137 23.2 +02.1	S	18 55.2 -00.1				
21	53 36.7 +01.1	N	19 25.1 +00.4	145 37.5 +01.9	S	17 12.7 -00.2	152 25.3 +02.2	S	18 55.1 -00.1				
22	68 37.8 +01.0	N	19 25.5 +00.4	160 39.4 +01.8	S	17 12.5 -00.2	167 27.5 +02.2	S	18 55.0 +00.0				
23	83 38.8 +01.0	N	19 25.9 +00.3	175 41.2 +01.9	S	17 12.3 -00.1	182 29.7 +02.2	S	18 55.0 -00.1				
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22				UT 02 06 10 14 18 22					
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3				SD 00'1 00'1 00'1 00'1 00'1 00'1					
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0					
	SHA 312° 312° 312° 312° 312° 312°			SHA 044° 044° 044° 044° 044° 044°				SHA 050° 050° 050° 050° 050° 050°					
	Greenwich Culmination Time: 17:25			Greenwich Culmination Time: 11:18				Greenwich Culmination Time: 10:51					

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 29.9 +00.1	S	11 58.9 -00.9	185 06.0 -00.7	S	16 05.7 -00.9	119 26.0 -25.0	N	07 22.3 +12.1	00			
01	191 30.0 +00.0	S	11 58.0 -00.9	200 05.3 -00.6	S	16 04.8 -00.9	134 01.0 -25.0	N	07 34.4 +12.1	01			
02	206 30.0 +00.1	S	11 57.1 -00.9	215 04.7 -00.7	S	16 03.9 -00.9	148 36.0 -25.0	N	07 46.5 +12.0	02			
03	221 30.1 +00.0	S	11 56.2 -00.8	230 04.0 -00.6	S	16 03.0 -00.9	163 11.0 -25.1	N	07 58.5 +12.0	03			
04	236 30.1 +00.1	S	11 55.4 -00.9	245 03.4 -00.7	S	16 02.1 -01.0	177 45.9 -25.1	N	08 10.5 +12.0	04			
05	251 30.2 +00.0	S	11 54.5 -00.9	260 02.7 -00.6	S	16 01.1 -00.9	192 20.8 -25.0	N	08 22.5 +11.9	05			
06	266 30.2 +00.1	S	11 53.6 -00.9	275 02.1 -00.7	S	16 00.2 -00.9	206 55.8 -25.2	N	08 34.4 +11.9	06			
07	281 30.3 +00.0	S	11 52.7 -00.8	290 01.4 -00.6	S	15 59.3 -01.0	221 30.6 -25.1	N	08 46.3 +11.9	07			
08	296 30.3 +00.0	S	11 51.9 -00.9	305 00.8 -00.6	S	15 58.3 -00.9	236 05.5 -25.1	N	08 58.2 +11.8	08			
09	311 30.3 +00.1	S	11 51.0 -00.9	320 00.2 -00.7	S	15 57.4 -00.9	250 40.4 -25.2	N	09 10.0 +11.8	09			
10	326 30.4 +00.0	S	11 50.1 -00.9	334 59.5 -00.6	S	15 56.5 -01.0	265 15.2 -25.2	N	09 21.8 +11.8	10			
11	341 30.4 +00.1	S	11 49.2 -00.9	349 58.9 -00.7	S	15 55.5 -00.9	279 50.0 -25.2	N	09 33.6 +11.7	11			
12	356 30.5 +00.0	S	11 48.3 -00.8	4 58.2 -00.6	S	15 54.6 -00.9	294 24.8 -25.2	N	09 45.3 +11.6	12			
13	11 30.5 +00.1	S	11 47.5 -00.9	19 57.6 -00.7	S	15 53.7 -00.9	308 59.6 -25.3	N	09 56.9 +11.7	13			
14	26 30.6 +00.0	S	11 46.6 -00.9	34 56.9 -00.6	S	15 52.8 -01.0	323 34.3 -25.3	N	10 08.6 +11.5	14			
15	41 30.6 +00.1	S	11 45.7 -00.9	49 56.3 -00.6	S	15 51.8 -00.9	338 09.0 -25.3	N	10 20.1 +11.6	15			
16	56 30.7 +00.0	S	11 44.8 -00.9	64 55.7 -00.7	S	15 50.9 -01.0	352 43.7 -25.3	N	10 31.7 +11.5	16			
17	71 30.7 +00.1	S	11 43.9 -00.8	79 55.0 -00.6	S	15 49.9 -00.9	7 18.4 -25.4	N	10 43.2 +11.4	17			
18	86 30.8 +00.0	S	11 43.1 -00.9	94 54.4 -00.6	S	15 49.0 -00.9	21 53.0 -25.4	N	10 54.6 +11.5	18			
19	101 30.8 +00.1	S	11 42.2 -00.9	109 53.8 -00.7	S	15 48.1 -01.0	36 27.6 -25.4	N	11 06.1 +11.3	19			
20	116 30.9 +00.0	S	11 41.3 -00.9	124 53.1 -00.6	S	15 47.1 -00.9	51 02.2 -25.5	N	11 17.4 +11.3	20			
21	131 30.9 +00.1	S	11 40.4 -00.9	139 52.5 -00.7	S	15 46.2 -00.9	65 36.7 -25.4	N	11 28.7 +11.3	21			
22	146 31.0 +00.0	S	11 39.5 -00.9	154 51.8 -00.6	S	15 45.3 -01.0	80 11.3 -25.6	N	11 40.0 +11.2	22			
23	161 31.0 +00.1	S	11 38.6 -00.8	169 51.2 -00.6	S	15 44.3 -00.9	94 45.7 -25.5	N	11 51.2 +11.2	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 14'8 14'8 14'8 14'8 14'8 14'8						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 54'3 54'3 54'3 54'2 54'2 54'2						
	SHA 029° 029° 029° 029° 029° 028°			SHA 038° 038° 037° 037° 037° 037°			SHA 331° 329° 328° 326° 324° 322°						
	Greenwich Culmination Time: 12:13			Greenwich Culmination Time: 11:40			Greenwich Culmination Time: 16:29						

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	98 39.8 +01.1	N	19 26.2 +00.4	190 43.1 +01.9	S	17 12.2 -00.2	197 31.9 +02.1	S	18 54.9 -00.1	00			
01	113 40.9 +01.0	N	19 26.6 +00.4	205 45.0 +01.9	S	17 12.0 -00.2	212 34.0 +02.2	S	18 54.8 +00.0	01			
02	128 41.9 +01.0	N	19 27.0 +00.4	220 46.9 +01.8	S	17 11.8 -00.1	227 36.2 +02.2	S	18 54.8 -00.1	02			
03	143 42.9 +01.0	N	19 27.4 +00.4	235 48.7 +01.9	S	17 11.7 -00.2	242 38.4 +02.2	S	18 54.7 -00.1	03			
04	158 43.9 +01.1	N	19 27.8 +00.3	250 50.6 +01.9	S	17 11.5 -00.2	257 40.6 +02.1	S	18 54.6 +00.0	04			
05	173 45.0 +01.0	N	19 28.1 +00.4	265 52.5 +01.9	S	17 11.3 -00.1	272 42.7 +02.2	S	18 54.6 -00.1	05			
06	188 46.0 +01.0	N	19 28.5 +00.4	280 54.4 +01.9	S	17 11.2 -00.2	287 44.9 +02.2	S	18 54.5 -00.1	06			
07	203 47.0 +01.0	N	19 28.9 +00.4	295 56.3 +01.8	S	17 11.0 -00.2	302 47.1 +02.1	S	18 54.4 +00.0	07			
08	218 48.0 +01.1	N	19 29.3 +00.4	310 58.1 +01.9	S	17 10.8 -00.1	317 49.2 +02.2	S	18 54.4 -00.1	08			
09	233 49.1 +01.0	N	19 29.7 +00.4	326 00.0 +01.9	S	17 10.7 -00.2	332 51.4 +02.2	S	18 54.3 -00.1	09			
10	248 50.1 +01.0	N	19 30.1 +00.3	341 01.9 +01.9	S	17 10.5 -00.2	347 53.6 +02.2	S	18 54.2 +00.0	10			
11	263 51.1 +01.1	N	19 30.4 +00.4	356 03.8 +01.8	S	17 10.3 -00.1	2 55.8 +02.1	S	18 54.2 -00.1	11			
12	278 52.2 +01.0	N	19 30.8 +00.4	11 05.6 +01.9	S	17 10.2 -00.2	17 57.9 +02.2	S	18 54.1 -00.1	12			
13	293 53.2 +01.0	N	19 31.2 +00.4	26 07.5 +01.9	S	17 10.0 -00.1	33 00.1 +02.2	S	18 54.0 +00.0	13			
14	308 54.2 +01.0	N	19 31.6 +00.4	41 09.4 +01.9	S	17 09.9 -00.2	48 02.3 +02.2	S	18 54.0 -00.1	14			
15	323 55.2 +01.1	N	19 32.0 +00.3	56 11.3 +01.8	S	17 09.7 -00.2	63 04.5 +02.1	S	18 53.9 -00.1	15			
16	338 56.3 +01.0	N	19 32.3 +00.4	71 13.1 +01.9	S	17 09.5 -00.1	78 06.6 +02.2	S	18 53.8 -00.1	16			
17	353 57.3 +01.0	N	19 32.7 +00.4	86 15.0 +01.9	S	17 09.4 -00.2	93 08.8 +02.2	S	18 53.7 +00.0	17			
18	8 58.3 +01.0	N	19 33.1 +00.4	101 16.9 +01.9	S	17 09.2 -00.2	108 11.0 +02.2	S	18 53.7 -00.1	18			
19	23 59.3 +01.1	N	19 33.5 +00.4	116 18.8 +01.9	S	17 09.0 -00.1	123 13.2 +02.1	S	18 53.6 -00.1	19			
20	39 00.4 +01.0	N	19 33.9 +00.3	131 20.7 +01.8	S	17 08.9 -00.2	138 15.3 +02.2	S	18 53.5 +00.0	20			
21	54 01.4 +01.0	N	19 34.2 +00.4	146 22.5 +01.9	S	17 08.7 -00.2	153 17.5 +02.2	S	18 53.5 -00.1	21			
22	69 02.4 +01.0	N	19 34.6 +00.4	161 24.4 +01.9	S	17 08.5 -00.1	168 19.7 +02.1	S	18 53.4 -00.1	22			
23	84 03.4 +01.0	N	19 35.0 +00.4	176 26.3 +01.9	S	17 08.4 -00.2	183 21.8 +02.2	S	18 53.3 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 311° 311° 311° 311° 311° 311°			SHA 044° 043° 043° 043° 043° 043°			SHA 050° 050° 050° 050° 050° 050°						
	Greenwich Culmination Time: 17:24			Greenwich Culmination Time: 11:15			Greenwich Culmination Time: 10:48						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 31.1 +00.0	S 11 37.8 -00.9	184 50.6 -00.7	S 15 43.4 -01.0	109 20.2 -25.6	N 12 02.4 +11.2	00						
01	191 31.1 +00.1	S 11 36.9 -00.9	199 49.9 -00.6	S 15 42.4 -00.9	123 54.6 -25.6	N 12 13.6 +11.0	01						
02	206 31.2 +00.0	S 11 36.0 -00.9	214 49.3 -00.6	S 15 41.5 -01.0	138 29.0 -25.7	N 12 24.6 +11.1	02						
03	221 31.2 +00.1	S 11 35.1 -00.9	229 48.7 -00.7	S 15 40.5 -00.9	153 03.3 -25.7	N 12 35.7 +10.9	03						
04	236 31.3 +00.0	S 11 34.2 -00.9	244 48.0 -00.6	S 15 39.6 -00.9	167 37.6 -25.7	N 12 46.6 +11.0	04						
05	251 31.3 +00.1	S 11 33.3 -00.8	259 47.4 -00.6	S 15 38.7 -01.0	182 11.9 -25.8	N 12 57.6 +10.9	05						
06	266 31.4 +00.0	S 11 32.5 -00.9	274 46.8 -00.7	S 15 37.7 -00.9	196 46.1 -25.8	N 13 08.5 +10.8	06						
07	281 31.4 +00.1	S 11 31.6 -00.9	289 46.1 -00.6	S 15 36.8 -01.0	211 20.3 -25.8	N 13 19.3 +10.8	07						
08	296 31.5 +00.1	S 11 30.7 -00.9	304 45.5 -00.6	S 15 35.8 -00.9	225 54.5 -25.9	N 13 30.1 +10.7	08						
09	311 31.6 +00.0	S 11 29.8 -00.9	319 44.9 -00.7	S 15 34.9 -01.0	240 28.6 -25.9	N 13 40.8 +10.6	09						
10	326 31.6 +00.1	S 11 28.9 -00.9	334 44.2 -00.6	S 15 33.9 -00.9	255 02.7 -26.0	N 13 51.4 +10.6	10						
11	341 31.7 +00.0	S 11 28.0 -00.9	349 43.6 -00.6	S 15 33.0 -01.0	269 36.7 -26.0	N 14 02.0 +10.6	11						
12	356 31.7 +00.1	S 11 27.1 -00.8	4 43.0 -00.7	S 15 32.0 -00.9	284 10.7 -26.1	N 14 12.6 +10.5	12						
13	11 31.8 +00.0	S 11 26.3 -00.9	19 42.3 -00.6	S 15 31.1 -01.0	298 44.6 -26.1	N 14 23.1 +10.4	13						
14	26 31.8 +00.1	S 11 25.4 -00.9	34 41.7 -00.6	S 15 30.1 -00.9	313 18.5 -26.1	N 14 33.5 +10.4	14						
15	41 31.9 +00.0	S 11 24.5 -00.9	49 41.1 -00.6	S 15 29.2 -01.0	327 52.4 -26.2	N 14 43.9 +10.3	15						
16	56 31.9 +00.1	S 11 23.6 -00.9	64 40.5 -00.7	S 15 28.2 -00.9	342 26.2 -26.3	N 14 54.2 +10.3	16						
17	71 32.0 +00.1	S 11 22.7 -00.9	79 39.8 -00.6	S 15 27.3 -01.0	356 59.9 -26.2	N 15 04.5 +10.2	17						
18	86 32.1 +00.0	S 11 21.8 -00.9	94 39.2 -00.6	S 15 26.3 -00.9	11 33.7 -26.4	N 15 14.7 +10.2	18						
19	101 32.1 +00.1	S 11 20.9 -00.9	109 38.6 -00.6	S 15 25.4 -01.0	26 07.3 -26.4	N 15 24.9 +10.0	19						
20	116 32.2 +00.0	S 11 20.0 -00.9	124 38.0 -00.7	S 15 24.4 -01.0	40 40.9 -26.4	N 15 34.9 +10.1	20						
21	131 32.2 +00.1	S 11 19.1 -00.8	139 37.3 -00.6	S 15 23.4 -00.9	55 14.5 -26.5	N 15 45.0 +09.9	21						
22	146 32.3 +00.0	S 11 18.3 -00.9	154 36.7 -00.6	S 15 22.5 -01.0	69 48.0 -26.5	N 15 54.9 +09.9	22						
23	161 32.3 +00.1	S 11 17.4 -00.9	169 36.1 -00.6	S 15 21.5 -00.9	84 21.5 -26.6	N 16 04.8 +09.9	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'2 16'2 16'2 16'2 16'2 16'2		SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 14'8 14'8 14'8 14'8 14'8 14'8								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 54'2 54'2 54'2 54'2 54'2 54'2								
	SHA 028° 028° 028° 028° 028° 027°		SHA 037° 036° 036° 036° 036° 036°		SHA 320° 318° 316° 315° 313° 311°								
	Greenwich Culmination Time: 12:13		Greenwich Culmination Time: 11:41		Greenwich Culmination Time: 17:12								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	99 04.4 +01.1	N 19 35.4 +00.4	191 28.2 +01.8	S 17 08.2 -00.2	198 24.0 +02.2	S 18 53.3 -00.1	00						
01	114 05.5 +01.0	N 19 35.8 +00.3	206 30.0 +01.9	S 17 08.0 -00.1	213 26.2 +02.2	S 18 53.2 -00.1	01						
02	129 06.5 +01.0	N 19 36.1 +00.4	221 31.9 +01.9	S 17 07.9 -00.2	228 28.4 +02.1	S 18 53.1 +00.0	02						
03	144 07.5 +01.0	N 19 36.5 +00.4	236 33.8 +01.9	S 17 07.7 -00.1	243 30.5 +02.2	S 18 53.1 -00.1	03						
04	159 08.5 +01.1	N 19 36.9 +00.4	251 35.7 +01.9	S 17 07.6 -00.2	258 32.7 +02.2	S 18 53.0 -00.1	04						
05	174 09.6 +01.0	N 19 37.3 +00.3	266 37.6 +01.8	S 17 07.4 -00.2	273 34.9 +02.2	S 18 52.9 +00.0	05						
06	189 10.6 +01.0	N 19 37.6 +00.4	281 39.4 +01.9	S 17 07.2 -00.1	288 37.1 +02.1	S 18 52.9 -00.1	06						
07	204 11.6 +01.0	N 19 38.0 +00.4	296 41.3 +01.9	S 17 07.1 -00.2	303 39.2 +02.2	S 18 52.8 -00.1	07						
08	219 12.6 +01.0	N 19 38.4 +00.4	311 43.2 +01.9	S 17 06.9 -00.2	318 41.4 +02.2	S 18 52.7 -00.1	08						
09	234 13.6 +01.1	N 19 38.8 +00.4	326 45.1 +01.9	S 17 06.7 -00.1	333 43.6 +02.2	S 18 52.6 +00.0	09						
10	249 14.7 +01.0	N 19 39.2 +00.3	341 47.0 +01.8	S 17 06.6 -00.2	348 45.8 +02.1	S 18 52.6 -00.1	10						
11	264 15.7 +01.0	N 19 39.5 +00.4	356 48.8 +01.9	S 17 06.4 -00.2	3 47.9 +02.2	S 18 52.5 -00.1	11						
12	279 16.7 +01.0	N 19 39.9 +00.4	11 50.7 +01.9	S 17 06.2 -00.1	18 50.1 +02.2	S 18 52.4 +00.0	12						
13	294 17.7 +01.0	N 19 40.3 +00.4	26 52.6 +01.9	S 17 06.1 -00.2	33 52.3 +02.2	S 18 52.4 -00.1	13						
14	309 18.7 +01.1	N 19 40.7 +00.3	41 54.5 +01.8	S 17 05.9 -00.2	48 54.5 +02.1	S 18 52.3 -00.1	14						
15	324 19.8 +01.0	N 19 41.0 +00.4	56 56.3 +01.9	S 17 05.7 -00.1	63 56.6 +02.2	S 18 52.2 +00.0	15						
16	339 20.8 +01.0	N 19 41.4 +00.4	71 58.2 +01.9	S 17 05.6 -00.2	78 58.8 +02.2	S 18 52.2 -00.1	16						
17	354 21.8 +01.0	N 19 41.8 +00.4	87 00.1 +01.9	S 17 05.4 -00.2	94 01.0 +02.2	S 18 52.1 -00.1	17						
18	9 22.8 +01.0	N 19 42.2 +00.3	102 02.0 +01.9	S 17 05.2 -00.1	109 03.2 +02.1	S 18 52.0 +00.0	18						
19	24 23.8 +01.0	N 19 42.5 +00.4	117 03.9 +01.8	S 17 05.1 -00.2	124 05.3 +02.2	S 18 52.0 -00.1	19						
20	39 24.8 +01.1	N 19 42.9 +00.4	132 05.7 +01.9	S 17 04.9 -00.2	139 07.5 +02.2	S 18 51.9 -00.1	20						
21	54 25.9 +01.0	N 19 43.3 +00.4	147 07.6 +01.9	S 17 04.7 -00.1	154 09.7 +02.2	S 18 51.8 +00.0	21						
22	69 26.9 +01.0	N 19 43.7 +00.3	162 09.5 +01.9	S 17 04.6 -00.2	169 11.9 +02.1	S 18 51.8 -00.1	22						
23	84 27.9 +01.0	N 19 44.0 +00.4	177 11.4 +01.9	S 17 04.4 -00.1	184 14.0 +02.2	S 18 51.7 -00.1	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 00'3 00'3 00'3 00'3 00'3 00'3		SD 00'1 00'1 00'1 00'1 00'1 00'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0								
	SHA 311° 311° 311° 311° 310° 310°		SHA 043° 043° 043° 043° 043° 043°		SHA 050° 050° 050° 050° 050° 050°								
	Greenwich Culmination Time: 17:22		Greenwich Culmination Time: 11:12		Greenwich Culmination Time: 10:44								

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	176 32.4 +00.1	S	11 16.5 -00.9	184 35.5 -00.7	S	15 20.6 -01.0	98 54.9 -26.6	N	16 14.7 +09.7	00										
01	191 32.5 +00.0	S	11 15.6 -00.9	199 34.8 -00.6	S	15 19.6 -01.0	113 28.3 -26.7	N	16 24.4 +09.7	01										
02	206 32.5 +00.1	S	11 14.7 -00.9	214 34.2 -00.6	S	15 18.6 -00.9	128 01.6 -26.7	N	16 34.1 +09.7	02										
03	221 32.6 +00.0	S	11 13.8 -00.9	229 33.6 -00.6	S	15 17.7 -01.0	142 34.9 -26.8	N	16 43.8 +09.5	03										
04	236 32.6 +00.1	S	11 12.9 -00.9	244 33.0 -00.6	S	15 16.7 -00.9	157 08.1 -26.9	N	16 53.3 +09.5	04										
05	251 32.7 +00.1	S	11 12.0 -00.9	259 32.4 -00.7	S	15 15.8 -01.0	171 41.2 -26.9	N	17 02.8 +09.5	05										
06	266 32.8 +00.0	S	11 11.1 -00.9	274 31.7 -00.6	S	15 14.8 -01.0	186 14.3 -27.0	N	17 12.3 +09.3	06										
07	281 32.8 +00.1	S	11 10.2 -00.9	289 31.1 -00.6	S	15 13.8 -00.9	200 47.3 -27.0	N	17 21.6 +09.3	07										
08	296 32.9 +00.0	S	11 09.3 -00.9	304 30.5 -00.6	S	15 12.9 -01.0	215 20.3 -27.0	N	17 30.9 +09.2	08										
09	311 32.9 +00.1	S	11 08.4 -00.8	319 29.9 -00.6	S	15 11.9 -01.0	229 53.3 -27.2	N	17 40.1 +09.2	09										
10	326 33.0 +00.1	S	11 07.6 -00.9	334 29.3 -00.7	S	15 10.9 -00.9	244 26.1 -27.2	N	17 49.3 +09.1	10										
11	341 33.1 +00.0	S	11 06.7 -00.9	349 28.6 -00.6	S	15 10.0 -01.0	258 58.9 -27.2	N	17 58.4 +09.0	11										
12	356 33.1 +00.1	S	11 05.8 -00.9	4 28.0 -00.6	S	15 09.0 -01.0	273 31.7 -27.3	N	18 07.4 +08.9	12										
13	11 33.2 +00.1	S	11 04.9 -00.9	19 27.4 -00.6	S	15 08.0 -00.9	288 04.4 -27.4	N	18 16.3 +08.9	13										
14	26 33.3 +00.0	S	11 04.0 -00.9	34 26.8 -00.6	S	15 07.1 -01.0	302 37.0 -27.4	N	18 25.2 +08.8	14										
15	41 33.3 +00.1	S	11 03.1 -00.9	49 26.2 -00.6	S	15 06.1 -01.0	317 09.6 -27.5	N	18 34.0 +08.7	15										
16	56 33.4 +00.0	S	11 02.2 -00.9	64 25.6 -00.7	S	15 05.1 -00.9	331 42.1 -27.5	N	18 42.7 +08.6	16										
17	71 33.4 +00.1	S	11 01.3 -00.9	79 24.9 -00.6	S	15 04.2 -01.0	346 14.6 -27.6	N	18 51.3 +08.6	17										
18	86 33.5 +00.1	S	11 00.4 -00.9	94 24.3 -00.6	S	15 03.2 -01.0	0 47.0 -27.7	N	18 59.9 +08.4	18										
19	101 33.6 +00.0	S	10 59.5 -00.9	109 23.7 -00.6	S	15 02.2 -01.0	15 19.3 -27.7	N	19 08.3 +08.4	19										
20	116 33.6 +00.1	S	10 58.6 -00.9	124 23.1 -00.6	S	15 01.2 -00.9	29 51.6 -27.8	N	19 16.7 +08.4	20										
21	131 33.7 +00.1	S	10 57.7 -00.9	139 22.5 -00.6	S	15 00.3 -01.0	44 23.8 -27.9	N	19 25.1 +08.2	21										
22	146 33.8 +00.0	S	10 56.8 -00.9	154 21.9 -00.6	S	14 59.3 -01.0	58 55.9 -27.9	N	19 33.3 +08.1	22										
23	161 33.8 +00.1	S	10 55.9 -00.9	169 21.3 -00.6	S	14 58.3 -01.0	73 28.0 -28.0	N	19 41.4 +08.1	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16'2	16'2	16'2	16'2	16'2	16'2	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	14'8	14'8	14'8	14'8	14'8	14'8
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	54'2	54'2	54'3	54'3	54'3	54'4
SHA	027°	027°	027°	027°	027°	026°	SHA	035°	035°	035°	035°	035°	034°	SHA	309°	307°	305°	303°	301°	299°
Greenwich Culmination Time: 12:13							Greenwich Culmination Time: 11:42							Greenwich Culmination Time: 17:56						

UT	Mars				Jupiter				Saturn				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	99 28.9 +01.0	N	19 44.4 +00.4	192 13.3 +01.8	S	17 04.3 -00.2	199 16.2 +02.2	S	18 51.6 +00.0	00										
01	114 29.9 +01.0	N	19 44.8 +00.4	207 15.1 +01.9	S	17 04.1 -00.2	214 18.4 +02.2	S	18 51.6 -00.1	01										
02	129 30.9 +01.1	N	19 45.2 +00.3	222 17.0 +01.9	S	17 03.9 -00.1	229 20.6 +02.1	S	18 51.5 -00.1	02										
03	144 32.0 +01.0	N	19 45.5 +00.4	237 18.9 +01.9	S	17 03.8 -00.2	244 22.7 +02.2	S	18 51.4 -00.1	03										
04	159 33.0 +01.0	N	19 45.9 +00.4	252 20.8 +01.9	S	17 03.6 -00.2	259 24.9 +02.2	S	18 51.3 +00.0	04										
05	174 34.0 +01.0	N	19 46.3 +00.4	267 22.7 +01.8	S	17 03.4 -00.1	274 27.1 +02.2	S	18 51.3 -00.1	05										
06	189 35.0 +01.0	N	19 46.7 +00.3	282 24.5 +01.9	S	17 03.3 -00.2	289 29.3 +02.1	S	18 51.2 -00.1	06										
07	204 36.0 +01.0	N	19 47.0 +00.4	297 26.4 +01.9	S	17 03.1 -00.2	304 31.4 +02.2	S	18 51.1 +00.0	07										
08	219 37.0 +01.0	N	19 47.4 +00.4	312 28.3 +01.9	S	17 02.9 -00.1	319 33.6 +02.2	S	18 51.1 -00.1	08										
09	234 38.0 +01.1	N	19 47.8 +00.4	327 30.2 +01.9	S	17 02.8 -00.2	334 35.8 +02.2	S	18 51.0 -00.1	09										
10	249 39.1 +01.0	N	19 48.2 +00.3	342 32.1 +01.8	S	17 02.6 -00.2	349 38.0 +02.1	S	18 50.9 +00.0	10										
11	264 40.1 +01.0	N	19 48.5 +00.4	357 33.9 +01.9	S	17 02.4 -00.1	4 40.1 +02.2	S	18 50.9 -00.1	11										
12	279 41.1 +01.0	N	19 48.9 +00.4	12 35.8 +01.9	S	17 02.3 -00.2	19 42.3 +02.2	S	18 50.8 -00.1	12										
13	294 42.1 +01.0	N	19 49.3 +00.4	27 37.7 +01.9	S	17 02.1 -00.2	34 44.5 +02.2	S	18 50.7 +00.0	13										
14	309 43.1 +01.0	N	19 49.7 +00.3	42 39.6 +01.9	S	17 01.9 -00.1	49 46.7 +02.1	S	18 50.7 -00.1	14										
15	324 44.1 +01.0	N	19 50.0 +00.4	57 41.5 +01.8	S	17 01.8 -00.2	64 48.8 +02.2	S	18 50.6 -00.1	15										
16	339 45.1 +01.1	N	19 50.4 +00.4	72 43.3 +01.9	S	17 01.6 -00.2	79 51.0 +02.2	S	18 50.5 +00.0	16										
17	354 46.2 +01.0	N	19 50.8 +00.4	87 45.2 +01.9	S	17 01.4 -00.1	94 53.2 +02.2	S	18 50.5 -00.1	17										
18	9 47.2 +01.0	N	19 51.2 +00.3	102 47.1 +01.9	S	17 01.3 -00.2	109 55.4 +02.1	S	18 50.4 -00.1	18										
19	24 48.2 +01.0	N	19 51.5 +00.4	117 49.0 +01.9	S	17 01.1 -00.1	124 57.5 +02.2	S	18 50.3 +00.0	19										
20	39 49.2 +01.0	N	19 51.9 +00.4	132 50.9 +01.8	S	17 01.0 -00.2	139 59.7 +02.2	S	18 50.3 -00.1	20										
21	54 50.2 +01.0	N	19 52.3 +00.3	147 52.7 +01.9	S	17 00.8 -00.2	155 01.9 +02.2	S	18 50.2 -00.1	21										
22	69 51.2 +01.0	N	19 52.6 +00.4	162 54.6 +01.9	S	17 00.6 -00.1	170 04.1 +02.1	S	18 50.1 -00.1	22										
23	84 52.2 +01.0	N	19 53.0 +00.4	177 56.5 +01.9	S	17 00.5 -00.2	185 06.2 +02.2	S	18 50.0 +00.0	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	00'3	00'3	00'3	00'3	00'3	00'3	SD	00'1	00'1	00'1	00'1	00'1	00'1
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP	00'0	00'0	00'0	00'0	00'0	00'0
SHA	310°	310°	310°	310°	310°	310°	SHA	043°	043°	043°	043°	043°	043°	SHA	050°	050°	050°	050°	050°	050°
Greenwich Culmination Time: 17:20							Greenwich Culmination Time: 11:09							Greenwich Culmination Time: 10:41						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 33.9 +00.1	S	10 55.0 -00.9	184 20.7 -00.7	S	14 57.3 -00.9	87 60.0 -28.1	N	19 49.5 +08.0	00			
01	191 34.0 +00.0	S	10 54.1 -00.9	199 20.0 -00.6	S	14 56.4 -01.0	102 31.9 -28.1	N	19 57.5 +07.9	01			
02	206 34.0 +00.1	S	10 53.2 -00.9	214 19.4 -00.6	S	14 55.4 -01.0	117 03.8 -28.1	N	20 05.4 +07.8	02			
03	221 34.1 +00.1	S	10 52.3 -00.9	229 18.8 -00.6	S	14 54.4 -01.0	131 35.7 -28.3	N	20 13.2 +07.8	03			
04	236 34.2 +00.0	S	10 51.4 -00.9	244 18.2 -00.6	S	14 53.4 -01.0	146 07.4 -28.3	N	20 21.0 +07.6	04			
05	251 34.2 +00.1	S	10 50.5 -00.9	259 17.6 -00.6	S	14 52.4 -00.9	160 39.1 -28.4	N	20 28.6 +07.6	05			
06	266 34.3 +00.1	S	10 49.6 -00.9	274 17.0 -00.6	S	14 51.5 -01.0	175 10.7 -28.4	N	20 36.2 +07.5	06			
07	281 34.4 +00.0	S	10 48.7 -00.9	289 16.4 -00.6	S	14 50.5 -01.0	189 42.3 -28.5	N	20 43.7 +07.4	07			
08	296 34.4 +00.1	S	10 47.8 -00.9	304 15.8 -00.6	S	14 49.5 -01.0	204 13.8 -28.6	N	20 51.1 +07.3	08			
09	311 34.5 +00.1	S	10 46.9 -00.9	319 15.2 -00.6	S	14 48.5 -01.0	218 45.2 -28.7	N	20 58.4 +07.2	09			
10	326 34.6 +00.0	S	10 46.0 -00.9	334 14.6 -00.6	S	14 47.5 -00.9	233 16.5 -28.7	N	21 05.6 +07.1	10			
11	341 34.6 +00.1	S	10 45.1 -00.9	349 14.0 -00.6	S	14 46.6 -01.0	247 47.8 -28.7	N	21 12.7 +07.0	11			
12	356 34.7 +00.1	S	10 44.2 -00.9	4 13.4 -00.7	S	14 45.6 -01.0	262 19.1 -28.9	N	21 19.7 +07.0	12			
13	11 34.8 +00.0	S	10 43.3 -00.9	19 12.7 -00.6	S	14 44.6 -01.0	276 50.2 -28.9	N	21 26.7 +06.8	13			
14	26 34.8 +00.1	S	10 42.4 -00.9	34 12.1 -00.6	S	14 43.6 -01.0	291 21.3 -29.0	N	21 33.5 +06.7	14			
15	41 34.9 +00.1	S	10 41.5 -00.9	49 11.5 -00.6	S	14 42.6 -01.0	305 52.3 -29.0	N	21 40.2 +06.7	15			
16	56 35.0 +00.1	S	10 40.6 -00.9	64 10.9 -00.6	S	14 41.6 -01.0	320 23.3 -29.2	N	21 46.9 +06.6	16			
17	71 35.1 +00.0	S	10 39.7 -00.9	79 10.3 -00.6	S	14 40.6 -01.0	334 54.1 -29.1	N	21 53.5 +06.4	17			
18	86 35.1 +00.1	S	10 38.8 -00.9	94 09.7 -00.6	S	14 39.6 -00.9	349 25.0 -29.3	N	21 59.9 +06.4	18			
19	101 35.2 +00.1	S	10 37.9 -00.9	109 09.1 -00.6	S	14 38.7 -01.0	3 55.7 -29.3	N	22 06.3 +06.2	19			
20	116 35.3 +00.0	S	10 37.0 -00.9	124 08.5 -00.6	S	14 37.7 -01.0	18 26.4 -29.4	N	22 12.5 +06.2	20			
21	131 35.3 +00.1	S	10 36.1 -00.9	139 07.9 -00.6	S	14 36.7 -01.0	32 57.0 -29.5	N	22 18.7 +06.1	21			
22	146 35.4 +00.1	S	10 35.2 -00.9	154 07.3 -00.6	S	14 35.7 -01.0	47 27.5 -29.5	N	22 24.8 +05.9	22			
23	161 35.5 +00.1	S	10 34.3 -00.9	169 06.7 -00.6	S	14 34.7 -01.0	61 58.0 -29.6	N	22 30.7 +05.9	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 14'8 14'8 14'9 14'9 14'9 14'9						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 54'4 54'5 54'5 54'6 54'7 54'7						
	SHA 026° 026° 026° 026° 026° 026°			SHA 034° 034° 034° 033° 033° 033°			SHA 297° 295° 293° 291° 289° 286°						
	Greenwich Culmination Time: 12:13			Greenwich Culmination Time: 11:43			Greenwich Culmination Time: 18:43						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	99 53.2 +01.0	N	19 53.4 +00.4	192 58.4 +01.9	S	17 00.3 -00.2	200 08.4 +02.2	S	18 50.0 -00.1	00			
01	114 54.2 +01.1	N	19 53.8 +00.3	208 00.3 +01.8	S	17 00.1 -00.1	215 10.6 +02.2	S	18 49.9 -00.1	01			
02	129 55.3 +01.0	N	19 54.1 +00.4	223 02.1 +01.9	S	16 60.0 -00.2	230 12.8 +02.2	S	18 49.8 +00.0	02			
03	144 56.3 +01.0	N	19 54.5 +00.4	238 04.0 +01.9	S	16 59.8 -00.2	245 15.0 +02.1	S	18 49.8 -00.1	03			
04	159 57.3 +01.0	N	19 54.9 +00.3	253 05.9 +01.9	S	16 59.6 -00.1	260 17.1 +02.2	S	18 49.7 -00.1	04			
05	174 58.3 +01.0	N	19 55.2 +00.4	268 07.8 +01.9	S	16 59.5 -00.2	275 19.3 +02.2	S	18 49.6 +00.0	05			
06	189 59.3 +01.0	N	19 55.6 +00.4	283 09.7 +01.9	S	16 59.3 -00.2	290 21.5 +02.2	S	18 49.6 -00.1	06			
07	205 00.3 +01.0	N	19 56.0 +00.3	298 11.6 +01.8	S	16 59.1 -00.1	305 23.7 +02.1	S	18 49.5 -00.1	07			
08	220 01.3 +01.0	N	19 56.3 +00.4	313 13.4 +01.9	S	16 59.0 -00.2	320 25.8 +02.2	S	18 49.4 +00.0	08			
09	235 02.3 +01.0	N	19 56.7 +00.4	328 15.3 +01.9	S	16 58.8 -00.2	335 28.0 +02.2	S	18 49.4 -00.1	09			
10	250 03.3 +01.0	N	19 57.1 +00.4	343 17.2 +01.9	S	16 58.6 -00.1	350 30.2 +02.2	S	18 49.3 -00.1	10			
11	265 04.3 +01.0	N	19 57.5 +00.3	358 19.1 +01.9	S	16 58.5 -00.2	5 32.4 +02.1	S	18 49.2 +00.0	11			
12	280 05.3 +01.0	N	19 57.8 +00.4	13 21.0 +01.8	S	16 58.3 -00.2	20 34.5 +02.2	S	18 49.2 -00.1	12			
13	295 06.3 +01.1	N	19 58.2 +00.4	28 22.8 +01.9	S	16 58.1 -00.1	35 36.7 +02.2	S	18 49.1 -00.1	13			
14	310 07.4 +01.0	N	19 58.6 +00.3	43 24.7 +01.9	S	16 58.0 -00.2	50 38.9 +02.2	S	18 49.0 +00.0	14			
15	325 08.4 +01.0	N	19 58.9 +00.4	58 26.6 +01.9	S	16 57.8 -00.2	65 41.1 +02.2	S	18 49.0 -00.1	15			
16	340 09.4 +01.0	N	19 59.3 +00.4	73 28.5 +01.9	S	16 57.6 -00.1	80 43.3 +02.1	S	18 48.9 -00.1	16			
17	355 10.4 +01.0	N	19 59.7 +00.3	88 30.4 +01.9	S	16 57.5 -00.2	95 45.4 +02.2	S	18 48.8 +00.0	17			
18	10 11.4 +01.0	N	20 00.0 +00.4	103 32.3 +01.8	S	16 57.3 -00.2	110 47.6 +02.2	S	18 48.8 -00.1	18			
19	25 12.4 +01.0	N	20 00.4 +00.4	118 34.1 +01.9	S	16 57.1 -00.1	125 49.8 +02.2	S	18 48.7 -00.1	19			
20	40 13.4 +01.0	N	20 00.8 +00.3	133 36.0 +01.9	S	16 57.0 -00.2	140 52.0 +02.1	S	18 48.6 -00.1	20			
21	55 14.4 +01.0	N	20 01.1 +00.4	148 37.9 +01.9	S	16 56.8 -00.1	155 54.1 +02.2	S	18 48.5 +00.0	21			
22	70 15.4 +01.0	N	20 01.5 +00.4	163 39.8 +01.9	S	16 56.7 -00.2	170 56.3 +02.2	S	18 48.5 -00.1	22			
23	85 16.4 +01.0	N	20 01.9 +00.3	178 41.7 +01.8	S	16 56.5 -00.2	185 58.5 +02.2	S	18 48.4 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 310° 310° 309° 309° 309° 309°			SHA 043° 043° 043° 043° 043° 043°			SHA 050° 050° 050° 050° 050° 050°						
	Greenwich Culmination Time: 17:19			Greenwich Culmination Time: 11:06			Greenwich Culmination Time: 10:37						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 35.6 +00.0	S 10	33.4 -00.9	184 06.1 -00.6	S 14	33.7 -01.0	76 28.4 -29.7	N 22	36.6 +05.8	00			
01	191 35.6 +00.1	S 10	32.5 -00.9	199 05.5 -00.6	S 14	32.7 -01.0	90 58.7 -29.7	N 22	42.4 +05.6	01			
02	206 35.7 +00.1	S 10	31.6 -00.9	214 04.9 -00.6	S 14	31.7 -01.0	105 29.0 -29.8	N 22	48.0 +05.6	02			
03	221 35.8 +00.1	S 10	30.7 -00.9	229 04.3 -00.6	S 14	30.7 -01.0	119 59.2 -29.9	N 22	53.6 +05.4	03			
04	236 35.9 +00.0	S 10	29.8 -00.9	244 03.7 -00.6	S 14	29.7 -01.0	134 29.3 -29.9	N 22	59.0 +05.4	04			
05	251 35.9 +00.1	S 10	28.9 -01.0	259 03.1 -00.6	S 14	28.7 -01.0	148 59.4 -30.0	N 23	04.4 +05.2	05			
06	266 36.0 +00.1	S 10	27.9 -00.9	274 02.5 -00.6	S 14	27.7 -01.0	163 29.4 -30.1	N 23	09.6 +05.1	06			
07	281 36.1 +00.1	S 10	27.0 -00.9	289 01.9 -00.6	S 14	26.7 -01.0	177 59.3 -30.1	N 23	14.7 +05.1	07			
08	296 36.2 +00.0	S 10	26.1 -00.9	304 01.3 -00.5	S 14	25.7 -01.0	192 29.2 -30.2	N 23	19.8 +04.9	08			
09	311 36.2 +00.1	S 10	25.2 -00.9	319 00.8 -00.6	S 14	24.7 -01.0	206 59.0 -30.3	N 23	24.7 +04.8	09			
10	326 36.3 +00.1	S 10	24.3 -00.9	334 00.2 -00.6	S 14	23.7 -01.0	221 28.7 -30.3	N 23	29.5 +04.7	10			
11	341 36.4 +00.1	S 10	23.4 -00.9	348 59.6 -00.6	S 14	22.7 -01.0	235 58.4 -30.4	N 23	34.2 +04.6	11			
12	356 36.5 +00.0	S 10	22.5 -00.9	3 59.0 -00.6	S 14	21.7 -01.0	250 28.0 -30.5	N 23	38.8 +04.4	12			
13	11 36.5 +00.1	S 10	21.6 -00.9	18 58.4 -00.6	S 14	20.7 -01.0	264 57.5 -30.5	N 23	43.2 +04.4	13			
14	26 36.6 +00.1	S 10	20.7 -00.9	33 57.8 -00.6	S 14	19.7 -01.0	279 27.0 -30.6	N 23	47.6 +04.2	14			
15	41 36.7 +00.1	S 10	19.8 -00.9	48 57.2 -00.6	S 14	18.7 -01.0	293 56.4 -30.7	N 23	51.8 +04.2	15			
16	56 36.8 +00.0	S 10	18.9 -00.9	63 56.6 -00.6	S 14	17.7 -01.0	308 25.7 -30.7	N 23	56.0 +04.0	16			
17	71 36.8 +00.1	S 10	18.0 -00.9	78 56.0 -00.6	S 14	16.7 -01.0	322 55.0 -30.8	N 23	60.0 +03.9	17			
18	86 36.9 +00.1	S 10	17.1 -01.0	93 55.4 -00.6	S 14	15.7 -01.0	337 24.2 -30.9	N 24	03.9 +03.8	18			
19	101 37.0 +00.1	S 10	16.1 -00.9	108 54.8 -00.6	S 14	14.7 -01.0	351 53.3 -30.9	N 24	07.7 +03.6	19			
20	116 37.1 +00.1	S 10	15.2 -00.9	123 54.2 -00.5	S 14	13.7 -01.0	6 22.4 -31.0	N 24	11.3 +03.6	20			
21	131 37.2 +00.0	S 10	14.3 -00.9	138 53.7 -00.6	S 14	12.7 -01.0	20 51.4 -31.0	N 24	14.9 +03.4	21			
22	146 37.2 +00.1	S 10	13.4 -00.9	153 53.1 -00.6	S 14	11.7 -01.0	35 20.4 -31.1	N 24	18.3 +03.3	22			
23	161 37.3 +00.1	S 10	12.5 -00.9	168 52.5 -00.6	S 14	10.7 -01.0	49 49.3 -31.2	N 24	21.6 +03.2	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 14'9 15'0 15'0 15'0 15'0 15'0						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 54'8 54'9 55'0 55'0 55'1 55'2						
	SHA 025° 025° 025° 025° 025° 025°			SHA 033° 033° 032° 032° 032° 032°			SHA 284° 282° 280° 278° 276° 273°						
	Greenwich Culmination Time: 12:13			Greenwich Culmination Time: 11:44			Greenwich Culmination Time: 19:33						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	100 17.4 +01.0	N 20	02.2 +00.4	193 43.5 +01.9	S 16	56.3 -00.1	201 00.7 +02.2	S 18	48.3 +00.0	00			
01	115 18.4 +01.0	N 20	02.6 +00.4	208 45.4 +01.9	S 16	56.2 -00.2	216 02.9 +02.1	S 18	48.3 -00.1	01			
02	130 19.4 +01.0	N 20	03.0 +00.3	223 47.3 +01.9	S 16	56.0 -00.2	231 05.0 +02.2	S 18	48.2 -00.1	02			
03	145 20.4 +01.0	N 20	03.3 +00.4	238 49.2 +01.9	S 16	55.8 -00.1	246 07.2 +02.2	S 18	48.1 +00.0	03			
04	160 21.4 +01.0	N 20	03.7 +00.4	253 51.1 +01.9	S 16	55.7 -00.2	261 09.4 +02.2	S 18	48.1 -00.1	04			
05	175 22.4 +01.0	N 20	04.1 +00.3	268 53.0 +01.8	S 16	55.5 -00.2	276 11.6 +02.1	S 18	48.0 -00.1	05			
06	190 23.4 +01.0	N 20	04.4 +00.4	283 54.8 +01.9	S 16	55.3 -00.1	291 13.7 +02.2	S 18	47.9 +00.0	06			
07	205 24.4 +01.0	N 20	04.8 +00.4	298 56.7 +01.9	S 16	55.2 -00.2	306 15.9 +02.2	S 18	47.9 -00.1	07			
08	220 25.4 +01.0	N 20	05.2 +00.3	313 58.6 +01.9	S 16	55.0 -00.2	321 18.1 +02.2	S 18	47.8 -00.1	08			
09	235 26.4 +01.0	N 20	05.5 +00.4	329 00.5 +01.9	S 16	54.8 -00.1	336 20.3 +02.2	S 18	47.7 +00.0	09			
10	250 27.4 +01.0	N 20	05.9 +00.4	344 02.4 +01.9	S 16	54.7 -00.2	351 22.5 +02.1	S 18	47.7 -00.1	10			
11	265 28.4 +01.0	N 20	06.3 +00.3	359 04.3 +01.8	S 16	54.5 -00.2	6 24.6 +02.2	S 18	47.6 -00.1	11			
12	280 29.4 +01.0	N 20	06.6 +00.4	14 06.1 +01.9	S 16	54.3 -00.1	21 26.8 +02.2	S 18	47.5 +00.0	12			
13	295 30.4 +01.0	N 20	07.0 +00.4	29 08.0 +01.9	S 16	54.2 -00.2	36 29.0 +02.2	S 18	47.5 -00.1	13			
14	310 31.4 +01.0	N 20	07.4 +00.3	44 09.9 +01.9	S 16	54.0 -00.2	51 31.2 +02.1	S 18	47.4 -00.1	14			
15	325 32.4 +01.0	N 20	07.7 +00.4	59 11.8 +01.9	S 16	53.8 -00.1	66 33.3 +02.2	S 18	47.3 +00.0	15			
16	340 33.4 +01.0	N 20	08.1 +00.4	74 13.7 +01.9	S 16	53.7 -00.2	81 35.5 +02.2	S 18	47.3 -00.1	16			
17	355 34.4 +01.0	N 20	08.5 +00.3	89 15.6 +01.8	S 16	53.5 -00.2	96 37.7 +02.2	S 18	47.2 -00.1	17			
18	10 35.4 +01.0	N 20	08.8 +00.4	104 17.4 +01.9	S 16	53.3 -00.1	111 39.9 +02.2	S 18	47.1 +00.0	18			
19	25 36.4 +01.0	N 20	09.2 +00.4	119 19.3 +01.9	S 16	53.2 -00.2	126 42.1 +02.1	S 18	47.1 -00.1	19			
20	40 37.4 +01.0	N 20	09.6 +00.3	134 21.2 +01.9	S 16	53.0 -00.2	141 44.2 +02.2	S 18	47.0 -00.1	20			
21	55 38.4 +01.0	N 20	09.9 +00.4	149 23.1 +01.9	S 16	52.8 -00.1	156 46.4 +02.2	S 18	46.9 +00.0	21			
22	70 39.4 +01.0	N 20	10.3 +00.3	164 25.0 +01.9	S 16	52.7 -00.2	171 48.6 +02.2	S 18	46.9 -00.1	22			
23	85 40.4 +01.0	N 20	10.6 +00.4	179 26.9 +01.8	S 16	52.5 -00.2	186 50.8 +02.2	S 18	46.8 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 309° 309° 309° 309° 309° 309°			SHA 043° 043° 042° 042° 042° 042°			SHA 050° 050° 050° 050° 050° 050°						
	Greenwich Culmination Time: 17:17			Greenwich Culmination Time: 11:03			Greenwich Culmination Time: 10:34						

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	176 37.4 +00.1	S	10 11.6 -00.9	183 51.9 -00.6	S	14 09.7 -01.1	64 18.1 -31.2	N	24 24.8 +03.1	00										
01	191 37.5 +00.0	S	10 10.7 -00.9	198 51.3 -00.6	S	14 08.6 -01.0	78 46.9 -31.3	N	24 27.9 +02.9	01										
02	206 37.5 +00.1	S	10 09.8 -00.9	213 50.7 -00.6	S	14 07.6 -01.0	93 15.6 -31.3	N	24 30.8 +02.8	02										
03	221 37.6 +00.1	S	10 08.9 -01.0	228 50.1 -00.6	S	14 06.6 -01.0	107 44.3 -31.4	N	24 33.6 +02.7	03										
04	236 37.7 +00.1	S	10 07.9 -00.9	243 49.5 -00.5	S	14 05.6 -01.0	122 12.9 -31.5	N	24 36.3 +02.6	04										
05	251 37.8 +00.1	S	10 07.0 -00.9	258 49.0 -00.6	S	14 04.6 -01.0	136 41.4 -31.5	N	24 38.9 +02.5	05										
06	266 37.9 +00.1	S	10 06.1 -00.9	273 48.4 -00.6	S	14 03.6 -01.0	151 09.9 -31.6	N	24 41.4 +02.3	06										
07	281 38.0 +00.0	S	10 05.2 -00.9	288 47.8 -00.6	S	14 02.6 -01.0	165 38.3 -31.6	N	24 43.7 +02.2	07										
08	296 38.0 +00.1	S	10 04.3 -00.9	303 47.2 -00.6	S	14 01.6 -01.1	180 06.7 -31.7	N	24 45.9 +02.0	08										
09	311 38.1 +00.1	S	10 03.4 -00.9	318 46.6 -00.6	S	14 00.5 -01.0	194 35.0 -31.7	N	24 47.9 +02.0	09										
10	326 38.2 +00.1	S	10 02.5 -01.0	333 46.0 -00.5	S	13 59.5 -01.0	209 03.3 -31.8	N	24 49.9 +01.8	10										
11	341 38.3 +00.1	S	10 01.5 -00.9	348 45.5 -00.6	S	13 58.5 -01.0	223 31.5 -31.9	N	24 51.7 +01.7	11										
12	356 38.4 +00.0	S	10 00.6 -00.9	3 44.9 -00.6	S	13 57.5 -01.0	237 59.6 -31.8	N	24 53.4 +01.5	12										
13	11 38.4 +00.1	S	09 59.7 -00.9	18 44.3 -00.6	S	13 56.5 -01.1	252 27.8 -32.0	N	24 54.9 +01.5	13										
14	26 38.5 +00.1	S	09 58.8 -00.9	33 43.7 -00.6	S	13 55.4 -01.0	266 55.8 -32.0	N	24 56.4 +01.3	14										
15	41 38.6 +00.1	S	09 57.9 -00.9	48 43.1 -00.5	S	13 54.4 -01.0	281 23.8 -32.0	N	24 57.7 +01.1	15										
16	56 38.7 +00.1	S	09 57.0 -00.9	63 42.6 -00.6	S	13 53.4 -01.0	295 51.8 -32.1	N	24 58.8 +01.1	16										
17	71 38.8 +00.1	S	09 56.1 -01.0	78 42.0 -00.6	S	13 52.4 -01.0	310 19.7 -32.2	N	24 59.9 +00.9	17										
18	86 38.9 +00.0	S	09 55.1 -00.9	93 41.4 -00.6	S	13 51.4 -01.1	324 47.5 -32.1	N	25 00.8 +00.7	18										
19	101 38.9 +00.1	S	09 54.2 -00.9	108 40.8 -00.6	S	13 50.3 -01.0	339 15.4 -32.3	N	25 01.5 +00.7	19										
20	116 39.0 +00.1	S	09 53.3 -00.9	123 40.2 -00.5	S	13 49.3 -01.0	353 43.1 -32.2	N	25 02.2 +00.5	20										
21	131 39.1 +00.1	S	09 52.4 -00.9	138 39.7 -00.6	S	13 48.3 -01.0	8 10.9 -32.3	N	25 02.7 +00.3	21										
22	146 39.2 +00.1	S	09 51.5 -00.9	153 39.1 -00.6	S	13 47.3 -01.1	22 38.6 -32.4	N	25 03.0 +00.3	22										
23	161 39.3 +00.1	S	09 50.6 -01.0	168 38.5 -00.6	S	13 46.2 -01.0	37 06.2 -32.4	N	25 03.3 +00.1	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16'2	16'2	16'2	16'2	16'2	16'2	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	15'1	15'1	15'1	15'2	15'2	15'2
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	55'3	55'4	55'5	55'6	55'8	55'9
SHA	024°	024°	024°	024°	024°	024°	SHA	032°	031°	031°	031°	031°	031°	SHA	271°	269°	267°	264°	262°	260°
Greenwich Culmination Time: 12:13							Greenwich Culmination Time: 11:44							Greenwich Culmination Time: 20:26						

UT	Mars				Jupiter				Saturn				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	100 41.4 +01.0	N	20 11.0 +00.4	194 28.7 +01.9	S	16 52.3 -00.1	201 53.0 +02.1	S	18 46.7 -00.1	00										
01	115 42.4 +01.0	N	20 11.4 +00.3	209 30.6 +01.9	S	16 52.2 -00.2	216 55.1 +02.2	S	18 46.6 +00.0	01										
02	130 43.4 +01.0	N	20 11.7 +00.4	224 32.5 +01.9	S	16 52.0 -00.2	231 57.3 +02.2	S	18 46.6 -00.1	02										
03	145 44.4 +01.0	N	20 12.1 +00.4	239 34.4 +01.9	S	16 51.8 -00.1	246 59.5 +02.2	S	18 46.5 -00.1	03										
04	160 45.4 +01.0	N	20 12.5 +00.3	254 36.3 +01.9	S	16 51.7 -00.2	262 01.7 +02.2	S	18 46.4 +00.0	04										
05	175 46.4 +01.0	N	20 12.8 +00.4	269 38.2 +01.9	S	16 51.5 -00.1	277 03.9 +02.1	S	18 46.4 -00.1	05										
06	190 47.4 +01.0	N	20 13.2 +00.3	284 40.1 +01.8	S	16 51.4 -00.2	292 06.0 +02.2	S	18 46.3 -00.1	06										
07	205 48.4 +01.0	N	20 13.5 +00.4	299 41.9 +01.9	S	16 51.2 -00.2	307 08.2 +02.2	S	18 46.2 +00.0	07										
08	220 49.4 +01.0	N	20 13.9 +00.4	314 43.8 +01.9	S	16 51.0 -00.1	322 10.4 +02.2	S	18 46.2 -00.1	08										
09	235 50.4 +01.0	N	20 14.3 +00.3	329 45.7 +01.9	S	16 50.9 -00.2	337 12.6 +02.2	S	18 46.1 -00.1	09										
10	250 51.4 +01.0	N	20 14.6 +00.4	344 47.6 +01.9	S	16 50.7 -00.2	352 14.8 +02.1	S	18 46.0 +00.0	10										
11	265 52.4 +01.0	N	20 15.0 +00.4	359 49.5 +01.9	S	16 50.5 -00.1	7 16.9 +02.2	S	18 46.0 -00.1	11										
12	280 53.4 +01.0	N	20 15.4 +00.3	14 51.4 +01.9	S	16 50.4 -00.2	22 19.1 +02.2	S	18 45.9 -00.1	12										
13	295 54.4 +01.0	N	20 15.7 +00.4	29 53.3 +01.8	S	16 50.2 -00.2	37 21.3 +02.2	S	18 45.8 +00.0	13										
14	310 55.4 +01.0	N	20 16.1 +00.3	44 55.1 +01.9	S	16 50.0 -00.1	52 23.5 +02.2	S	18 45.8 -00.1	14										
15	325 56.4 +01.0	N	20 16.4 +00.4	59 57.0 +01.9	S	16 49.9 -00.2	67 25.7 +02.1	S	18 45.7 -00.1	15										
16	340 57.4 +01.0	N	20 16.8 +00.4	74 58.9 +01.9	S	16 49.7 -00.2	82 27.8 +02.2	S	18 45.6 +00.0	16										
17	355 58.4 +01.0	N	20 17.2 +00.3	90 00.8 +01.9	S	16 49.5 -00.1	97 30.0 +02.2	S	18 45.6 -00.1	17										
18	10 59.4 +01.0	N	20 17.5 +00.4	105 02.7 +01.9	S	16 49.4 -00.2	112 32.2 +02.2	S	18 45.5 -00.1	18										
19	26 00.4 +01.0	N	20 17.9 +00.3	120 04.6 +01.8	S	16 49.2 -00.2	127 34.4 +02.2	S	18 45.4 +00.0	19										
20	41 01.4 +01.0	N	20 18.2 +00.4	135 06.4 +01.9	S	16 49.0 -00.1	142 36.6 +02.1	S	18 45.4 -00.1	20										
21	56 02.4 +01.0	N	20 18.6 +00.4	150 08.3 +01.9	S	16 48.9 -00.2	157 38.7 +02.2	S	18 45.3 -00.1	21										
22	71 03.4 +00.9	N	20 19.0 +00.3	165 10.2 +01.9	S	16 48.7 -00.2	172 40.9 +02.2	S	18 45.2 +00.0	22										
23	86 04.3 +01.0	N	20 19.3 +00.4	180 12.1 +01.9	S	16 48.5 -00.1	187 43.1 +02.2	S	18 45.2 -00.1	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	00'3	00'3	00'3	00'3	00'3	00'3	SD	00'1	00'1	00'1	00'1	00'1	00'1
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP	00'0	00'0	00'0	00'0	00'0	00'0
SHA	309°	308°	308°	308°	308°	308°	SHA	042°	042°	042°	042°	042°	042°	SHA	050°	050°	050°	050°	050°	050°
Greenwich Culmination Time: 17:16							Greenwich Culmination Time: 11:00							Greenwich Culmination Time: 10:30						

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	176 39.4 +00.1	S	09 49.6 -00.9	183 37.9 -00.5	S	13 45.2 -01.0	51 33.8 -32.4	N	25 03.4 -00.1	00										
01	191 39.5 +00.0	S	09 48.7 -00.9	198 37.4 -00.6	S	13 44.2 -01.0	66 01.4 -32.5	N	25 03.3 -00.2	01										
02	206 39.5 +00.1	S	09 47.8 -00.9	213 36.8 -00.6	S	13 43.2 -01.1	80 28.9 -32.5	N	25 03.1 -00.3	02										
03	221 39.6 +00.1	S	09 46.9 -00.9	228 36.2 -00.6	S	13 42.1 -01.0	94 56.4 -32.6	N	25 02.8 -00.4	03										
04	236 39.7 +00.1	S	09 46.0 -00.9	243 35.6 -00.5	S	13 41.1 -01.0	109 23.8 -32.6	N	25 02.4 -00.6	04										
05	251 39.8 +00.1	S	09 45.1 -01.0	258 35.1 -00.6	S	13 40.1 -01.0	123 51.2 -32.6	N	25 01.8 -00.7	05										
06	266 39.9 +00.1	S	09 44.1 -00.9	273 34.5 -00.6	S	13 39.1 -01.1	138 18.6 -32.6	N	25 01.1 -00.9	06										
07	281 40.0 +00.1	S	09 43.2 -00.9	288 33.9 -00.6	S	13 38.0 -01.0	152 46.0 -32.7	N	25 00.2 -01.0	07										
08	296 40.1 +00.1	S	09 42.3 -00.9	303 33.3 -00.5	S	13 37.0 -01.0	167 13.3 -32.7	N	24 59.2 -01.2	08										
09	311 40.2 +00.1	S	09 41.4 -00.9	318 32.8 -00.6	S	13 36.0 -01.1	181 40.6 -32.8	N	24 58.0 -01.2	09										
10	326 40.3 +00.0	S	09 40.5 -01.0	333 32.2 -00.6	S	13 34.9 -01.0	196 07.8 -32.8	N	24 56.8 -01.5	10										
11	341 40.3 +00.1	S	09 39.5 -00.9	348 31.6 -00.5	S	13 33.9 -01.0	210 35.0 -32.8	N	24 55.3 -01.5	11										
12	356 40.4 +00.1	S	09 38.6 -00.9	3 31.1 -00.6	S	13 32.9 -01.1	225 02.2 -32.8	N	24 53.8 -01.7	12										
13	11 40.5 +00.1	S	09 37.7 -00.9	18 30.5 -00.6	S	13 31.8 -01.0	239 29.4 -32.9	N	24 52.1 -01.9	13										
14	26 40.6 +00.1	S	09 36.8 -01.0	33 29.9 -00.6	S	13 30.8 -01.0	253 56.5 -32.8	N	24 50.2 -02.0	14										
15	41 40.7 +00.1	S	09 35.8 -00.9	48 29.3 -00.5	S	13 29.8 -01.1	268 23.7 -32.9	N	24 48.2 -02.1	15										
16	56 40.8 +00.1	S	09 34.9 -00.9	63 28.8 -00.6	S	13 28.7 -01.0	282 50.8 -33.0	N	24 46.1 -02.3	16										
17	71 40.9 +00.1	S	09 34.0 -00.9	78 28.2 -00.6	S	13 27.7 -01.0	297 17.8 -32.9	N	24 43.8 -02.4	17										
18	86 41.0 +00.1	S	09 33.1 -00.9	93 27.6 -00.5	S	13 26.7 -01.1	311 44.9 -33.0	N	24 41.4 -02.5	18										
19	101 41.1 +00.1	S	09 32.2 -01.0	108 27.1 -00.6	S	13 25.6 -01.0	326 11.9 -33.0	N	24 38.9 -02.7	19										
20	116 41.2 +00.0	S	09 31.2 -00.9	123 26.5 -00.6	S	13 24.6 -01.1	340 38.9 -33.0	N	24 36.2 -02.9	20										
21	131 41.2 +00.1	S	09 30.3 -00.9	138 25.9 -00.5	S	13 23.5 -01.0	355 05.9 -33.0	N	24 33.3 -02.9	21										
22	146 41.3 +00.1	S	09 29.4 -00.9	153 25.4 -00.6	S	13 22.5 -01.0	9 32.9 -33.0	N	24 30.4 -03.2	22										
23	161 41.4 +00.1	S	09 28.5 -01.0	168 24.8 -00.6	S	13 21.5 -01.1	23 59.9 -33.1	N	24 27.2 -03.2	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16'2	16'2	16'2	16'2	16'2	16'2	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	15'3	15'3	15'3	15'4	15'4	15'4
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	56'0	56'1	56'2	56'4	56'5	56'6
SHA	023°	023°	023°	023°	023°	023°	SHA	030°	030°	030°	030°	030°	029°	SHA	257°	255°	253°	250°	248°	246°
Greenwich Culmination Time: 12:13							Greenwich Culmination Time: 11:45							Greenwich Culmination Time: 21:20						

UT	Mars				Jupiter				Saturn				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	101 05.3 +01.0	N	20 19.7 +00.3	195 14.0 +01.9	S	16 48.4 -00.2	202 45.3 +02.2	S	18 45.1 -00.1	00										
01	116 06.3 +01.0	N	20 20.0 +00.4	210 15.9 +01.9	S	16 48.2 -00.2	217 47.5 +02.1	S	18 45.0 +00.0	01										
02	131 07.3 +01.0	N	20 20.4 +00.4	225 17.8 +01.9	S	16 48.0 -00.1	232 49.6 +02.2	S	18 45.0 -00.1	02										
03	146 08.3 +01.0	N	20 20.8 +00.3	240 19.7 +01.8	S	16 47.9 -00.2	247 51.8 +02.2	S	18 44.9 -00.1	03										
04	161 09.3 +01.0	N	20 21.1 +00.4	255 21.5 +01.9	S	16 47.7 -00.2	262 54.0 +02.2	S	18 44.8 +00.0	04										
05	176 10.3 +01.0	N	20 21.5 +00.3	270 23.4 +01.9	S	16 47.5 -00.1	277 56.2 +02.2	S	18 44.8 -00.1	05										
06	191 11.3 +01.0	N	20 21.8 +00.4	285 25.3 +01.9	S	16 47.4 -00.2	292 58.4 +02.1	S	18 44.7 -00.1	06										
07	206 12.3 +01.0	N	20 22.2 +00.3	300 27.2 +01.9	S	16 47.2 -00.2	308 00.5 +02.2	S	18 44.6 -00.1	07										
08	221 13.3 +01.0	N	20 22.5 +00.4	315 29.1 +01.9	S	16 47.0 -00.1	323 02.7 +02.2	S	18 44.5 +00.0	08										
09	236 14.3 +01.0	N	20 22.9 +00.4	330 31.0 +01.9	S	16 46.9 -00.2	338 04.9 +02.2	S	18 44.5 -00.1	09										
10	251 15.3 +00.9	N	20 23.3 +00.3	345 32.9 +01.8	S	16 46.7 -00.2	353 07.1 +02.2	S	18 44.4 -00.1	10										
11	266 16.2 +01.0	N	20 23.6 +00.4	0 34.7 +01.9	S	16 46.5 -00.1	8 09.3 +02.2	S	18 44.3 +00.0	11										
12	281 17.2 +01.0	N	20 24.0 +00.3	15 36.6 +01.9	S	16 46.4 -00.2	23 11.5 +02.1	S	18 44.3 -00.1	12										
13	296 18.2 +01.0	N	20 24.3 +00.4	30 38.5 +01.9	S	16 46.2 -00.2	38 13.6 +02.2	S	18 44.2 -00.1	13										
14	311 19.2 +01.0	N	20 24.7 +00.3	45 40.4 +01.9	S	16 46.0 -00.1	53 15.8 +02.2	S	18 44.1 +00.0	14										
15	326 20.2 +01.0	N	20 25.0 +00.4	60 42.3 +01.9	S	16 45.9 -00.2	68 18.0 +02.2	S	18 44.1 -00.1	15										
16	341 21.2 +01.0	N	20 25.4 +00.4	75 44.2 +01.9	S	16 45.7 -00.2	83 20.2 +02.2	S	18 44.0 -00.1	16										
17	356 22.2 +01.0	N	20 25.8 +00.3	90 46.1 +01.9	S	16 45.5 -00.1	98 22.4 +02.1	S	18 43.9 +00.0	17										
18	11 23.2 +01.0	N	20 26.1 +00.4	105 48.0 +01.8	S	16 45.4 -00.2	113 24.5 +02.2	S	18 43.9 -00.1	18										
19	26 24.2 +00.9	N	20 26.5 +00.3	120 49.8 +01.9	S	16 45.2 -00.2	128 26.7 +02.2	S	18 43.8 -00.1	19										
20	41 25.1 +01.0	N	20 26.8 +00.4	135 51.7 +01.9	S	16 45.0 -00.1	143 28.9 +02.2	S	18 43.7 +00.0	20										
21	56 26.1 +01.0	N	20 27.2 +00.3	150 53.6 +01.9	S	16 44.9 -00.2	158 31.1 +02.2	S	18 43.7 -00.1	21										
22	71 27.1 +01.0	N	20 27.5 +00.4	165 55.5 +01.9	S	16 44.7 -00.2	173 33.3 +02.2	S	18 43.6 -00.1	22										
23	86 28.1 +01.0	N	20 27.9 +00.3	180 57.4 +01.9	S	16 44.5 -00.1	188 35.5 +02.1	S	18 43.5 +00.0	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	00'3	00'3	00'3	00'3	00'3	00'3	SD	00'1	00'1	00'1	00'1	00'1	00'1
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP	00'0	00'0	00'0	00'0	00'0	00'0
SHA	308°	308°	308°	308°	308°	307°	SHA	042°	042°	042°	042°	042°	042°	SHA	050°	050°	050°	050°	050°	050°
Greenwich Culmination Time: 17:14							Greenwich Culmination Time: 10:57							Greenwich Culmination Time: 10:27						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 41.5 +00.1	S	09 27.5 -00.9	183 24.2 -00.5	S	13 20.4 -01.0	38 26.8 -33.0	N	24 24.0 -03.4	00			
01	191 41.6 +00.1	S	09 26.6 -00.9	198 23.7 -00.6	S	13 19.4 -01.1	52 53.8 -33.1	N	24 20.6 -03.6	01			
02	206 41.7 +00.1	S	09 25.7 -00.9	213 23.1 -00.5	S	13 18.3 -01.0	67 20.7 -33.1	N	24 17.0 -03.7	02			
03	221 41.8 +00.1	S	09 24.8 -00.9	228 22.6 -00.6	S	13 17.3 -01.0	81 47.6 -33.1	N	24 13.3 -03.8	03			
04	236 41.9 +00.1	S	09 23.9 -01.0	243 22.0 -00.6	S	13 16.3 -01.1	96 14.5 -33.1	N	24 09.5 -04.0	04			
05	251 42.0 +00.1	S	09 22.9 -00.9	258 21.4 -00.5	S	13 15.2 -01.0	110 41.4 -33.1	N	24 05.5 -04.1	05			
06	266 42.1 +00.1	S	09 22.0 -00.9	273 20.9 -00.6	S	13 14.2 -01.1	125 08.3 -33.1	N	24 01.4 -04.3	06			
07	281 42.2 +00.1	S	09 21.1 -01.0	288 20.3 -00.6	S	13 13.1 -01.0	139 35.2 -33.1	N	23 57.1 -04.4	07			
08	296 42.3 +00.1	S	09 20.1 -00.9	303 19.7 -00.5	S	13 12.1 -01.1	154 02.1 -33.1	N	23 52.7 -04.5	08			
09	311 42.4 +00.1	S	09 19.2 -00.9	318 19.2 -00.6	S	13 11.0 -01.0	168 29.0 -33.1	N	23 48.2 -04.7	09			
10	326 42.5 +00.1	S	09 18.3 -00.9	333 18.6 -00.5	S	13 10.0 -01.1	182 55.9 -33.1	N	23 43.5 -04.8	10			
11	341 42.6 +00.0	S	09 17.4 -01.0	348 18.1 -00.6	S	13 08.9 -01.0	197 22.8 -33.2	N	23 38.7 -05.0	11			
12	356 42.6 +00.1	S	09 16.4 -00.9	3 17.5 -00.5	S	13 07.9 -01.1	211 49.6 -33.1	N	23 33.7 -05.1	12			
13	11 42.7 +00.1	S	09 15.5 -00.9	18 17.0 -00.6	S	13 06.8 -01.0	226 16.5 -33.1	N	23 28.6 -05.3	13			
14	26 42.8 +00.1	S	09 14.6 -00.9	33 16.4 -00.6	S	13 05.8 -01.1	240 43.4 -33.1	N	23 23.3 -05.4	14			
15	41 42.9 +00.1	S	09 13.7 -01.0	48 15.8 -00.5	S	13 04.7 -01.0	255 10.3 -33.1	N	23 17.9 -05.5	15			
16	56 43.0 +00.1	S	09 12.7 -00.9	63 15.3 -00.6	S	13 03.7 -01.1	269 37.2 -33.1	N	23 12.4 -05.7	16			
17	71 43.1 +00.1	S	09 11.8 -00.9	78 14.7 -00.5	S	13 02.6 -01.0	284 04.1 -33.1	N	23 06.7 -05.8	17			
18	86 43.2 +00.1	S	09 10.9 -00.9	93 14.2 -00.6	S	13 01.6 -01.1	298 31.0 -33.1	N	23 00.9 -06.0	18			
19	101 43.3 +00.1	S	09 10.0 -01.0	108 13.6 -00.5	S	13 00.5 -01.0	312 57.9 -33.0	N	22 54.9 -06.1	19			
20	116 43.4 +00.1	S	09 09.0 -00.9	123 13.1 -00.6	S	12 59.5 -01.1	327 24.9 -33.1	N	22 48.8 -06.2	20			
21	131 43.5 +00.1	S	09 08.1 -00.9	138 12.5 -00.6	S	12 58.4 -01.0	341 51.8 -33.1	N	22 42.6 -06.4	21			
22	146 43.6 +00.1	S	09 07.2 -01.0	153 11.9 -00.5	S	12 57.4 -01.1	356 18.7 -33.0	N	22 36.2 -06.5	22			
23	161 43.7 +00.1	S	09 06.2 -00.9	168 11.4 -00.6	S	12 56.3 -01.0	10 45.7 -33.0	N	22 29.7 -06.6	23			
UT 02 06 10 14 18 22 SD 16'2 16'2 16'2 16'2 16'2 16'2 HP 00'1 00'1 00'1 00'1 00'1 00'1 SHA 023° 022° 022° 022° 022° 022° Greenwich Culmination Time: 12:13				UT 02 06 10 14 18 22 SD 00'1 00'1 00'1 00'1 00'1 00'1 HP 00'1 00'1 00'1 00'1 00'1 00'1 SHA 029° 029° 029° 029° 028° 028° Greenwich Culmination Time: 11:46				UT 02 06 10 14 18 22 SD 15'5 15'5 15'5 15'6 15'6 15'6 HP 56'7 56'9 57'0 57'1 57'3 57'4 SHA 243° 241° 238° 236° 234° 231° Greenwich Culmination Time: 22:15					
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	101 29.1 +01.0	N	20 28.2 +00.4	195 59.3 +01.9	S	16 44.4 -00.2	203 37.6 +02.2	S	18 43.5 -00.1	00			
01	116 30.1 +01.0	N	20 28.6 +00.3	211 01.2 +01.9	S	16 44.2 -00.1	218 39.8 +02.2	S	18 43.4 -00.1	01			
02	131 31.1 +01.0	N	20 28.9 +00.4	226 03.1 +01.8	S	16 44.1 -00.2	233 42.0 +02.2	S	18 43.3 +00.0	02			
03	146 32.1 +00.9	N	20 29.3 +00.4	241 04.9 +01.9	S	16 43.9 -00.2	248 44.2 +02.2	S	18 43.3 -00.1	03			
04	161 33.0 +01.0	N	20 29.7 +00.3	256 06.8 +01.9	S	16 43.7 -00.1	263 46.4 +02.1	S	18 43.2 -00.1	04			
05	176 34.0 +01.0	N	20 30.0 +00.4	271 08.7 +01.9	S	16 43.6 -00.2	278 48.5 +02.2	S	18 43.1 +00.0	05			
06	191 35.0 +01.0	N	20 30.4 +00.3	286 10.6 +01.9	S	16 43.4 -00.2	293 50.7 +02.2	S	18 43.1 -00.1	06			
07	206 36.0 +01.0	N	20 30.7 +00.4	301 12.5 +01.9	S	16 43.2 -00.1	308 52.9 +02.2	S	18 43.0 -00.1	07			
08	221 37.0 +01.0	N	20 31.1 +00.3	316 14.4 +01.9	S	16 43.1 -00.2	323 55.1 +02.2	S	18 42.9 +00.0	08			
09	236 38.0 +01.0	N	20 31.4 +00.4	331 16.3 +01.9	S	16 42.9 -00.2	338 57.3 +02.2	S	18 42.9 -00.1	09			
10	251 39.0 +00.9	N	20 31.8 +00.3	346 18.2 +01.8	S	16 42.7 -00.1	353 59.5 +02.1	S	18 42.8 -00.1	10			
11	266 39.9 +01.0	N	20 32.1 +00.4	1 20.0 +01.9	S	16 42.6 -00.2	9 01.6 +02.2	S	18 42.7 +00.0	11			
12	281 40.9 +01.0	N	20 32.5 +00.3	16 21.9 +01.9	S	16 42.4 -00.2	24 03.8 +02.2	S	18 42.7 -00.1	12			
13	296 41.9 +01.0	N	20 32.8 +00.4	31 23.8 +01.9	S	16 42.2 -00.1	39 06.0 +02.2	S	18 42.6 -00.1	13			
14	311 42.9 +01.0	N	20 33.2 +00.3	46 25.7 +01.9	S	16 42.1 -00.2	54 08.2 +02.2	S	18 42.5 +00.0	14			
15	326 43.9 +01.0	N	20 33.5 +00.4	61 27.6 +01.9	S	16 41.9 -00.2	69 10.4 +02.2	S	18 42.5 -00.1	15			
16	341 44.9 +00.9	N	20 33.9 +00.3	76 29.5 +01.9	S	16 41.7 -00.1	84 12.6 +02.1	S	18 42.4 -00.1	16			
17	356 45.8 +01.0	N	20 34.2 +00.4	91 31.4 +01.9	S	16 41.6 -00.2	99 14.7 +02.2	S	18 42.3 +00.0	17			
18	11 46.8 +01.0	N	20 34.6 +00.3	106 33.3 +01.9	S	16 41.4 -00.2	114 16.9 +02.2	S	18 42.3 -00.1	18			
19	26 47.8 +01.0	N	20 34.9 +00.4	121 35.2 +01.8	S	16 41.2 -00.1	129 19.1 +02.2	S	18 42.2 -00.1	19			
20	41 48.8 +01.0	N	20 35.3 +00.3	136 37.0 +01.9	S	16 41.1 -00.2	144 21.3 +02.2	S	18 42.1 +00.0	20			
21	56 49.8 +01.0	N	20 35.6 +00.4	151 38.9 +01.9	S	16 40.9 -00.2	159 23.5 +02.2	S	18 42.1 -00.1	21			
22	71 50.8 +00.9	N	20 36.0 +00.3	166 40.8 +01.9	S	16 40.7 -00.1	174 25.7 +02.1	S	18 42.0 -00.1	22			
23	86 51.7 +01.0	N	20 36.3 +00.4	181 42.7 +01.9	S	16 40.6 -00.2	189 27.8 +02.2	S	18 41.9 +00.0	23			
UT 02 06 10 14 18 22 SD 00'1 00'1 00'1 00'1 00'1 00'1 HP 00'1 00'1 00'1 00'1 00'1 00'1 SHA 307° 307° 307° 307° 307° 307° Greenwich Culmination Time: 17:12				UT 02 06 10 14 18 22 SD 00'3 00'3 00'3 00'3 00'3 00'3 HP 00'0 00'0 00'0 00'0 00'0 00'0 SHA 042° 042° 042° 042° 042° 042° Greenwich Culmination Time: 10:54				UT 02 06 10 14 18 22 SD 00'1 00'1 00'1 00'1 00'1 00'1 HP 00'0 00'0 00'0 00'0 00'0 00'0 SHA 050° 050° 049° 049° 049° 049° Greenwich Culmination Time: 10:23					

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 43.8 +00.1	S	09 05.3 -00.9	183 10.8 -00.5	S	12 55.3 -01.1	25 12.7 -33.1	N	22 23.1 -06.8	00			
01	191 43.9 +00.1	S	09 04.4 -00.9	198 10.3 -00.6	S	12 54.2 -01.1	39 39.6 -33.0	N	22 16.3 -07.0	01			
02	206 44.0 +00.1	S	09 03.5 -01.0	213 09.7 -00.5	S	12 53.1 -01.0	54 06.6 -32.9	N	22 09.3 -07.0	02			
03	221 44.1 +00.1	S	09 02.5 -00.9	228 09.2 -00.6	S	12 52.1 -01.1	68 33.7 -33.0	N	22 02.3 -07.2	03			
04	236 44.2 +00.1	S	09 01.6 -00.9	243 08.6 -00.5	S	12 51.0 -01.0	83 00.7 -33.0	N	21 55.1 -07.3	04			
05	251 44.3 +00.1	S	09 00.7 -01.0	258 08.1 -00.6	S	12 50.0 -01.1	97 27.7 -32.9	N	21 47.8 -07.5	05			
06	266 44.4 +00.1	S	08 59.7 -00.9	273 07.5 -00.5	S	12 48.9 -01.0	111 54.8 -32.9	N	21 40.3 -07.6	06			
07	281 44.5 +00.1	S	08 58.8 -00.9	288 07.0 -00.6	S	12 47.9 -01.1	126 21.9 -32.9	N	21 32.7 -07.8	07			
08	296 44.6 +00.1	S	08 57.9 -01.0	303 06.4 -00.5	S	12 46.8 -01.1	140 49.0 -32.9	N	21 24.9 -07.8	08			
09	311 44.7 +00.1	S	08 56.9 -00.9	318 05.9 -00.6	S	12 45.7 -01.0	155 16.1 -32.8	N	21 17.1 -08.0	09			
10	326 44.8 +00.1	S	08 56.0 -00.9	333 05.3 -00.5	S	12 44.7 -01.1	169 43.3 -32.8	N	21 09.1 -08.2	10			
11	341 44.9 +00.1	S	08 55.1 -01.0	348 04.8 -00.6	S	12 43.6 -01.1	184 10.5 -32.8	N	21 00.9 -08.2	11			
12	356 45.0 +00.1	S	08 54.1 -00.9	3 04.2 -00.5	S	12 42.5 -01.0	198 37.7 -32.8	N	20 52.7 -08.4	12			
13	11 45.1 +00.1	S	08 53.2 -00.9	18 03.7 -00.6	S	12 41.5 -01.1	213 04.9 -32.8	N	20 44.3 -08.6	13			
14	26 45.2 +00.1	S	08 52.3 -01.0	33 03.1 -00.5	S	12 40.4 -01.0	227 32.1 -32.7	N	20 35.7 -08.6	14			
15	41 45.3 +00.1	S	08 51.3 -00.9	48 02.6 -00.6	S	12 39.4 -01.1	241 59.4 -32.7	N	20 27.1 -08.8	15			
16	56 45.4 +00.1	S	08 50.4 -00.9	63 02.0 -00.5	S	12 38.3 -01.1	256 26.7 -32.7	N	20 18.3 -08.9	16			
17	71 45.5 +00.1	S	08 49.5 -01.0	78 01.5 -00.5	S	12 37.2 -01.0	270 54.0 -32.6	N	20 09.4 -09.1	17			
18	86 45.6 +00.1	S	08 48.5 -00.9	93 01.0 -00.6	S	12 36.2 -01.1	285 21.4 -32.7	N	20 00.3 -09.1	18			
19	101 45.7 +00.1	S	08 47.6 -00.9	108 00.4 -00.5	S	12 35.1 -01.1	299 48.7 -32.6	N	19 51.2 -09.3	19			
20	116 45.8 +00.1	S	08 46.7 -01.0	122 59.9 -00.6	S	12 34.0 -01.0	314 16.1 -32.5	N	19 41.9 -09.4	20			
21	131 45.9 +00.1	S	08 45.7 -00.9	137 59.3 -00.5	S	12 33.0 -01.1	328 43.6 -32.6	N	19 32.5 -09.6	21			
22	146 46.0 +00.2	S	08 44.8 -00.9	152 58.8 -00.6	S	12 31.9 -01.1	343 11.0 -32.5	N	19 22.9 -09.6	22			
23	161 46.2 +00.1	S	08 43.9 -01.0	167 58.2 -00.5	S	12 30.8 -01.1	357 38.5 -32.4	N	19 13.3 -09.8	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'7 15'7 15'7 15'8 15'8 15'9						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 57'5 57'7 57'8 57'9 58'1 58'2						
	SHA 022° 021° 021° 021° 021° 021°			SHA 028° 028° 028° 027° 027° 027°			SHA 229° 227° 224° 222° 220° 217°						
	Greenwich Culmination Time: 12:12			Greenwich Culmination Time: 11:47			Greenwich Culmination Time: 23:09						

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	101 52.7 +01.0	N	20 36.7 +00.3	196 44.6 +01.9	S	16 40.4 -00.2	204 30.0 +02.2	S	18 41.9 -00.1	00			
01	116 53.7 +01.0	N	20 37.0 +00.4	211 46.5 +01.9	S	16 40.2 -00.1	219 32.2 +02.2	S	18 41.8 -00.1	01			
02	131 54.7 +01.0	N	20 37.4 +00.3	226 48.4 +01.9	S	16 40.1 -00.2	234 34.4 +02.2	S	18 41.7 +00.0	02			
03	146 55.7 +00.9	N	20 37.7 +00.4	241 50.3 +01.9	S	16 39.9 -00.2	249 36.6 +02.2	S	18 41.7 -00.1	03			
04	161 56.6 +01.0	N	20 38.1 +00.3	256 52.2 +01.9	S	16 39.7 -00.1	264 38.8 +02.2	S	18 41.6 -00.1	04			
05	176 57.6 +01.0	N	20 38.4 +00.4	271 54.1 +01.8	S	16 39.6 -00.2	279 41.0 +02.1	S	18 41.5 +00.0	05			
06	191 58.6 +01.0	N	20 38.8 +00.3	286 55.9 +01.9	S	16 39.4 -00.2	294 43.1 +02.2	S	18 41.5 -00.1	06			
07	206 59.6 +01.0	N	20 39.1 +00.4	301 57.8 +01.9	S	16 39.2 -00.1	309 45.3 +02.2	S	18 41.4 -00.1	07			
08	222 00.6 +00.9	N	20 39.5 +00.3	316 59.7 +01.9	S	16 39.1 -00.2	324 47.5 +02.2	S	18 41.3 +00.0	08			
09	237 01.5 +01.0	N	20 39.8 +00.4	332 01.6 +01.9	S	16 38.9 -00.2	339 49.7 +02.2	S	18 41.3 -00.1	09			
10	252 02.5 +01.0	N	20 40.2 +00.3	347 03.5 +01.9	S	16 38.7 -00.1	354 51.9 +02.2	S	18 41.2 -00.1	10			
11	267 03.5 +01.0	N	20 40.5 +00.4	2 05.4 +01.9	S	16 38.6 -00.2	9 54.1 +02.1	S	18 41.1 +00.0	11			
12	282 04.5 +01.0	N	20 40.9 +00.3	17 07.3 +01.9	S	16 38.4 -00.2	24 56.2 +02.2	S	18 41.1 -00.1	12			
13	297 05.5 +00.9	N	20 41.2 +00.4	32 09.2 +01.9	S	16 38.2 -00.1	39 58.4 +02.2	S	18 41.0 -00.1	13			
14	312 06.4 +01.0	N	20 41.6 +00.3	47 11.1 +01.9	S	16 38.1 -00.2	55 00.6 +02.2	S	18 40.9 +00.0	14			
15	327 07.4 +01.0	N	20 41.9 +00.4	62 13.0 +01.8	S	16 37.9 -00.2	70 02.8 +02.2	S	18 40.9 -00.1	15			
16	342 08.4 +01.0	N	20 42.3 +00.3	77 14.8 +01.9	S	16 37.7 -00.1	85 05.0 +02.2	S	18 40.8 -00.1	16			
17	357 09.4 +00.9	N	20 42.6 +00.4	92 16.7 +01.9	S	16 37.6 -00.2	100 07.2 +02.2	S	18 40.7 -00.1	17			
18	12 10.3 +01.0	N	20 43.0 +00.3	107 18.6 +01.9	S	16 37.4 -00.2	115 09.4 +02.1	S	18 40.6 +00.0	18			
19	27 11.3 +01.0	N	20 43.3 +00.4	122 20.5 +01.9	S	16 37.2 -00.1	130 11.5 +02.2	S	18 40.6 -00.1	19			
20	42 12.3 +01.0	N	20 43.7 +00.3	137 22.4 +01.9	S	16 37.1 -00.2	145 13.7 +02.2	S	18 40.5 -00.1	20			
21	57 13.3 +01.0	N	20 44.0 +00.4	152 24.3 +01.9	S	16 36.9 -00.2	160 15.9 +02.2	S	18 40.4 +00.0	21			
22	72 14.3 +00.9	N	20 44.4 +00.3	167 26.2 +01.9	S	16 36.7 -00.1	175 18.1 +02.2	S	18 40.4 -00.1	22			
23	87 15.2 +01.0	N	20 44.7 +00.3	182 28.1 +01.9	S	16 36.6 -00.2	190 20.3 +02.2	S	18 40.3 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 307° 307° 307° 306° 306° 306°			SHA 042° 042° 042° 042° 041° 041°			SHA 049° 049° 049° 049° 049° 049°						
	Greenwich Culmination Time: 17:11			Greenwich Culmination Time: 10:51			Greenwich Culmination Time: 10:20						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 46.3 +00.1	S	08 42.9 -00.9	182 57.7 -00.5	S	12 29.7 -01.0	12 06.1 -32.5	N	19 03.5 -09.9	00			
01	191 46.4 +00.1	S	08 42.0 -00.9	197 57.2 -00.6	S	12 28.7 -01.1	26 33.6 -32.4	N	18 53.6 -10.0	01			
02	206 46.5 +00.1	S	08 41.1 -01.0	212 56.6 -00.5	S	12 27.6 -01.1	41 01.2 -32.4	N	18 43.6 -10.2	02			
03	221 46.6 +00.1	S	08 40.1 -00.9	227 56.1 -00.6	S	12 26.5 -01.0	55 28.8 -32.3	N	18 33.4 -10.2	03			
04	236 46.7 +00.1	S	08 39.2 -00.9	242 55.5 -00.5	S	12 25.5 -01.1	69 56.5 -32.3	N	18 23.2 -10.4	04			
05	251 46.8 +00.1	S	08 38.3 -01.0	257 55.0 -00.6	S	12 24.4 -01.1	84 24.2 -32.3	N	18 12.8 -10.5	05			
06	266 46.9 +00.1	S	08 37.3 -00.9	272 54.4 -00.5	S	12 23.3 -01.1	98 51.9 -32.3	N	18 02.3 -10.6	06			
07	281 47.0 +00.1	S	08 36.4 -00.9	287 53.9 -00.5	S	12 22.2 -01.0	113 19.6 -32.2	N	17 51.7 -10.7	07			
08	296 47.1 +00.1	S	08 35.5 -01.0	302 53.4 -00.6	S	12 21.2 -01.1	127 47.4 -32.2	N	17 41.0 -10.9	08			
09	311 47.2 +00.1	S	08 34.5 -00.9	317 52.8 -00.5	S	12 20.1 -01.1	142 15.2 -32.1	N	17 30.1 -10.9	09			
10	326 47.3 +00.1	S	08 33.6 -01.0	332 52.3 -00.5	S	12 19.0 -01.1	156 43.1 -32.2	N	17 19.2 -11.1	10			
11	341 47.4 +00.1	S	08 32.6 -00.9	347 51.8 -00.6	S	12 17.9 -01.0	171 10.9 -32.0	N	17 08.1 -11.1	11			
12	356 47.5 +00.1	S	08 31.7 -00.9	2 51.2 -00.5	S	12 16.9 -01.1	185 38.9 -32.1	N	16 57.0 -11.3	12			
13	11 47.6 +00.1	S	08 30.8 -01.0	17 50.7 -00.6	S	12 15.8 -01.1	200 06.8 -32.0	N	16 45.7 -11.4	13			
14	26 47.7 +00.2	S	08 29.8 -00.9	32 50.1 -00.5	S	12 14.7 -01.1	214 34.8 -32.0	N	16 34.3 -11.5	14			
15	41 47.9 +00.1	S	08 28.9 -00.9	47 49.6 -00.5	S	12 13.6 -01.1	229 02.8 -31.9	N	16 22.8 -11.6	15			
16	56 48.0 +00.1	S	08 28.0 -01.0	62 49.1 -00.6	S	12 12.5 -01.0	243 30.9 -32.0	N	16 11.2 -11.7	16			
17	71 48.1 +00.1	S	08 27.0 -00.9	77 48.5 -00.5	S	12 11.5 -01.1	257 58.9 -31.8	N	15 59.5 -11.8	17			
18	86 48.2 +00.1	S	08 26.1 -01.0	92 48.0 -00.5	S	12 10.4 -01.1	272 27.1 -31.9	N	15 47.7 -11.9	18			
19	101 48.3 +00.1	S	08 25.1 -00.9	107 47.5 -00.6	S	12 09.3 -01.1	286 55.2 -31.8	N	15 35.8 -12.0	19			
20	116 48.4 +00.1	S	08 24.2 -00.9	122 46.9 -00.5	S	12 08.2 -01.1	301 23.4 -31.8	N	15 23.8 -12.1	20			
21	131 48.5 +00.1	S	08 23.3 -01.0	137 46.4 -00.5	S	12 07.1 -01.0	315 51.6 -31.7	N	15 11.7 -12.2	21			
22	146 48.6 +00.1	S	08 22.3 -00.9	152 45.9 -00.6	S	12 06.1 -01.1	330 19.9 -31.7	N	14 59.5 -12.3	22			
23	161 48.7 +00.1	S	08 21.4 -01.0	167 45.3 -00.5	S	12 05.0 -01.1	344 48.2 -31.7	N	14 47.2 -12.4	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'9 15'9 16'0 16'0 16'0 16'0						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 58'3 58'4 58'5 58'7 58'8 58'9						
	SHA 021° 020° 020° 020° 020° 020°			SHA 027° 027° 026° 026° 026° 026°			SHA 215° 213° 210° 208° 206° 203°						
	Greenwich Culmination Time: 12:12			Greenwich Culmination Time: 11:48			Greenwich Culmination Time: -1:00						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	102 16.2 +01.0	N	20 45.0 +00.4	197 30.0 +01.9	S	16 36.4 -00.2	205 22.5 +02.2	S	18 40.2 +00.0	00			
01	117 17.2 +01.0	N	20 45.4 +00.3	212 31.9 +01.9	S	16 36.2 -00.1	220 24.7 +02.1	S	18 40.2 -00.1	01			
02	132 18.2 +00.9	N	20 45.7 +00.4	227 33.8 +01.9	S	16 36.1 -00.2	235 26.8 +02.2	S	18 40.1 -00.1	02			
03	147 19.1 +01.0	N	20 46.1 +00.3	242 35.7 +01.8	S	16 35.9 -00.2	250 29.0 +02.2	S	18 40.0 +00.0	03			
04	162 20.1 +01.0	N	20 46.4 +00.4	257 37.5 +01.9	S	16 35.7 -00.1	265 31.2 +02.2	S	18 40.0 -00.1	04			
05	177 21.1 +01.0	N	20 46.8 +00.3	272 39.4 +01.9	S	16 35.6 -00.2	280 33.4 +02.2	S	18 39.9 -00.1	05			
06	192 22.1 +00.9	N	20 47.1 +00.4	287 41.3 +01.9	S	16 35.4 -00.2	295 35.6 +02.2	S	18 39.8 +00.0	06			
07	207 23.0 +01.0	N	20 47.5 +00.3	302 43.2 +01.9	S	16 35.2 -00.1	310 37.8 +02.2	S	18 39.8 -00.1	07			
08	222 24.0 +01.0	N	20 47.8 +00.4	317 45.1 +01.9	S	16 35.1 -00.2	325 40.0 +02.1	S	18 39.7 -00.1	08			
09	237 25.0 +01.0	N	20 48.2 +00.3	332 47.0 +01.9	S	16 34.9 -00.2	340 42.1 +02.2	S	18 39.6 +00.0	09			
10	252 26.0 +00.9	N	20 48.5 +00.3	347 48.9 +01.9	S	16 34.7 -00.1	355 44.3 +02.2	S	18 39.6 -00.1	10			
11	267 26.9 +01.0	N	20 48.8 +00.4	2 50.8 +01.9	S	16 34.6 -00.2	10 46.5 +02.2	S	18 39.5 -00.1	11			
12	282 27.9 +01.0	N	20 49.2 +00.3	17 52.7 +01.9	S	16 34.4 -00.2	25 48.7 +02.2	S	18 39.4 +00.0	12			
13	297 28.9 +00.9	N	20 49.5 +00.4	32 54.6 +01.9	S	16 34.2 -00.1	40 50.9 +02.2	S	18 39.4 -00.1	13			
14	312 29.8 +01.0	N	20 49.9 +00.3	47 56.5 +01.9	S	16 34.1 -00.2	55 53.1 +02.2	S	18 39.3 -00.1	14			
15	327 30.8 +01.0	N	20 50.2 +00.4	62 58.4 +01.9	S	16 33.9 -00.2	70 55.3 +02.1	S	18 39.2 +00.0	15			
16	342 31.8 +01.0	N	20 50.6 +00.3	78 00.3 +01.8	S	16 33.7 -00.1	85 57.4 +02.2	S	18 39.2 -00.1	16			
17	357 32.8 +00.9	N	20 50.9 +00.3	93 02.1 +01.9	S	16 33.6 -00.2	100 59.6 +02.2	S	18 39.1 -00.1	17			
18	12 33.7 +01.0	N	20 51.2 +00.4	108 04.0 +01.9	S	16 33.4 -00.2	116 01.8 +02.2	S	18 39.0 +00.0	18			
19	27 34.7 +01.0	N	20 51.6 +00.3	123 05.9 +01.9	S	16 33.2 -00.1	131 04.0 +02.2	S	18 39.0 -00.1	19			
20	42 35.7 +01.0	N	20 51.9 +00.4	138 07.8 +01.9	S	16 33.1 -00.2	146 06.2 +02.2	S	18 38.9 -00.1	20			
21	57 36.7 +00.9	N	20 52.3 +00.3	153 09.7 +01.9	S	16 32.9 -00.1	161 08.4 +02.2	S	18 38.8 +00.0	21			
22	72 37.6 +01.0	N	20 52.6 +00.3	168 11.6 +01.9	S	16 32.8 -00.2	176 10.6 +02.2	S	18 38.8 -00.1	22			
23	87 38.6 +01.0	N	20 52.9 +00.4	183 13.5 +01.9	S	16 32.6 -00.2	191 12.8 +02.1	S	18 38.7 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 306° 306° 306° 306° 306° 306°			SHA 041° 041° 041° 041° 041° 041°			SHA 049° 049° 049° 049° 049° 049°						
	Greenwich Culmination Time: 17:09			Greenwich Culmination Time: 10:48			Greenwich Culmination Time: 10:17						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 48.8 +00.2	S	08 20.4 -00.9	182 44.8 -00.5	S	12 03.9 -01.1	359 16.5 -31.6	N	14 34.8 -12.5	00			
01	191 49.0 +00.1	S	08 19.5 -00.9	197 44.3 -00.6	S	12 02.8 -01.1	13 44.9 -31.6	N	14 22.3 -12.5	01			
02	206 49.1 +00.1	S	08 18.6 -01.0	212 43.7 -00.5	S	12 01.7 -01.1	28 13.3 -31.6	N	14 09.8 -12.7	02			
03	221 49.2 +00.1	S	08 17.6 -00.9	227 43.2 -00.5	S	12 00.6 -01.0	42 41.7 -31.6	N	13 57.1 -12.8	03			
04	236 49.3 +00.1	S	08 16.7 -01.0	242 42.7 -00.5	S	11 59.6 -01.1	57 10.1 -31.5	N	13 44.3 -12.8	04			
05	251 49.4 +00.1	S	08 15.7 -00.9	257 42.2 -00.6	S	11 58.5 -01.1	71 38.6 -31.4	N	13 31.5 -13.0	05			
06	266 49.5 +00.1	S	08 14.8 -00.9	272 41.6 -00.5	S	11 57.4 -01.1	86 07.2 -31.5	N	13 18.5 -13.0	06			
07	281 49.6 +00.1	S	08 13.9 -01.0	287 41.1 -00.5	S	11 56.3 -01.1	100 35.7 -31.4	N	13 05.5 -13.1	07			
08	296 49.7 +00.1	S	08 12.9 -00.9	302 40.6 -00.6	S	11 55.2 -01.1	115 04.3 -31.4	N	12 52.4 -13.2	08			
09	311 49.8 +00.2	S	08 12.0 -01.0	317 40.0 -00.5	S	11 54.1 -01.1	129 32.9 -31.3	N	12 39.2 -13.2	09			
10	326 50.0 +00.1	S	08 11.0 -00.9	332 39.5 -00.5	S	11 53.0 -01.1	144 01.6 -31.3	N	12 26.0 -13.4	10			
11	341 50.1 +00.1	S	08 10.1 -01.0	347 39.0 -00.5	S	11 51.9 -01.0	158 30.3 -31.3	N	12 12.6 -13.4	11			
12	356 50.2 +00.1	S	08 09.1 -00.9	2 38.5 -00.6	S	11 50.9 -01.1	172 59.0 -31.2	N	11 59.2 -13.5	12			
13	11 50.3 +00.1	S	08 08.2 -00.9	17 37.9 -00.5	S	11 49.8 -01.1	187 27.8 -31.3	N	11 45.7 -13.6	13			
14	26 50.4 +00.1	S	08 07.3 -01.0	32 37.4 -00.5	S	11 48.7 -01.1	201 56.5 -31.2	N	11 32.1 -13.7	14			
15	41 50.5 +00.1	S	08 06.3 -00.9	47 36.9 -00.5	S	11 47.6 -01.1	216 25.3 -31.1	N	11 18.4 -13.7	15			
16	56 50.6 +00.2	S	08 05.4 -01.0	62 36.4 -00.6	S	11 46.5 -01.1	230 54.2 -31.1	N	11 04.7 -13.8	16			
17	71 50.8 +00.1	S	08 04.4 -00.9	77 35.8 -00.5	S	11 45.4 -01.1	245 23.1 -31.1	N	10 50.9 -13.9	17			
18	86 50.9 +00.1	S	08 03.5 -01.0	92 35.3 -00.5	S	11 44.3 -01.1	259 52.0 -31.1	N	10 37.0 -14.0	18			
19	101 51.0 +00.1	S	08 02.5 -00.9	107 34.8 -00.5	S	11 43.2 -01.1	274 20.9 -31.1	N	10 23.0 -14.0	19			
20	116 51.1 +00.1	S	08 01.6 -00.9	122 34.3 -00.6	S	11 42.1 -01.1	288 49.8 -31.0	N	10 09.0 -14.1	20			
21	131 51.2 +00.1	S	08 00.7 -01.0	137 33.7 -00.5	S	11 41.0 -01.1	303 18.8 -31.0	N	09 54.9 -14.1	21			
22	146 51.3 +00.1	S	07 59.7 -00.9	152 33.2 -00.5	S	11 39.9 -01.1	317 47.8 -30.9	N	09 40.8 -14.2	22			
23	161 51.4 +00.2	S	07 58.8 -01.0	167 32.7 -00.5	S	11 38.8 -01.1	332 16.9 -31.0	N	09 26.6 -14.3	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'1 16'1 16'1 16'1			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'1 16'1 16'1 16'1 16'2 16'2						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 59'0 59'1 59'2 59'3 59'4 59'4						
	SHA 020° 020° 019° 019° 019° 019°			SHA 026° 025° 025° 025° 025° 025°			SHA 201° 199° 197° 194° 192° 190°						
	Greenwich Culmination Time: 12:12			Greenwich Culmination Time: 11:49			Greenwich Culmination Time: 00:03						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	102 39.6 +00.9	N	20 53.3 +00.3	198 15.4 +01.9	S	16 32.4 -00.1	206 14.9 +02.2	S	18 38.6 +00.0	00			
01	117 40.5 +01.0	N	20 53.6 +00.4	213 17.3 +01.9	S	16 32.3 -00.2	221 17.1 +02.2	S	18 38.6 -00.1	01			
02	132 41.5 +01.0	N	20 54.0 +00.3	228 19.2 +01.9	S	16 32.1 -00.2	236 19.3 +02.2	S	18 38.5 -00.1	02			
03	147 42.5 +00.9	N	20 54.3 +00.4	243 21.1 +01.9	S	16 31.9 -00.1	251 21.5 +02.2	S	18 38.4 +00.0	03			
04	162 43.4 +01.0	N	20 54.7 +00.3	258 23.0 +01.9	S	16 31.8 -00.2	266 23.7 +02.2	S	18 38.4 -00.1	04			
05	177 44.4 +01.0	N	20 55.0 +00.3	273 24.9 +01.9	S	16 31.6 -00.2	281 25.9 +02.2	S	18 38.3 -00.1	05			
06	192 45.4 +01.0	N	20 55.3 +00.4	288 26.8 +01.8	S	16 31.4 -00.1	296 28.1 +02.2	S	18 38.2 +00.0	06			
07	207 46.4 +00.9	N	20 55.7 +00.3	303 28.6 +01.9	S	16 31.3 -00.2	311 30.3 +02.1	S	18 38.2 -00.1	07			
08	222 47.3 +01.0	N	20 56.0 +00.4	318 30.5 +01.9	S	16 31.1 -00.2	326 32.4 +02.2	S	18 38.1 -00.1	08			
09	237 48.3 +01.0	N	20 56.4 +00.3	333 32.4 +01.9	S	16 30.9 -00.1	341 34.6 +02.2	S	18 38.0 +00.0	09			
10	252 49.3 +00.9	N	20 56.7 +00.3	348 34.3 +01.9	S	16 30.8 -00.2	356 36.8 +02.2	S	18 38.0 -00.1	10			
11	267 50.2 +01.0	N	20 57.0 +00.4	3 36.2 +01.9	S	16 30.6 -00.2	11 39.0 +02.2	S	18 37.9 +00.0	11			
12	282 51.2 +01.0	N	20 57.4 +00.3	18 38.1 +01.9	S	16 30.4 -00.1	26 41.2 +02.2	S	18 37.9 -00.1	12			
13	297 52.2 +00.9	N	20 57.7 +00.3	33 40.0 +01.9	S	16 30.3 -00.2	41 43.4 +02.2	S	18 37.8 -00.1	13			
14	312 53.1 +01.0	N	20 58.0 +00.4	48 41.9 +01.9	S	16 30.1 -00.2	56 45.6 +02.2	S	18 37.7 +00.0	14			
15	327 54.1 +01.0	N	20 58.4 +00.3	63 43.8 +01.9	S	16 29.9 -00.1	71 47.8 +02.1	S	18 37.7 -00.1	15			
16	342 55.1 +00.9	N	20 58.7 +00.4	78 45.7 +01.9	S	16 29.8 -00.2	86 49.9 +02.2	S	18 37.6 -00.1	16			
17	357 56.0 +01.0	N	20 59.1 +00.3	93 47.6 +01.9	S	16 29.6 -00.2	101 52.1 +02.2	S	18 37.5 +00.0	17			
18	12 57.0 +01.0	N	20 59.4 +00.3	108 49.5 +01.9	S	16 29.4 -00.1	116 54.3 +02.2	S	18 37.5 -00.1	18			
19	27 58.0 +00.9	N	20 59.7 +00.4	123 51.4 +01.9	S	16 29.3 -00.2	131 56.5 +02.2	S	18 37.4 -00.1	19			
20	42 58.9 +01.0	N	21 00.1 +00.3	138 53.3 +01.9	S	16 29.1 -00.2	146 58.7 +02.2	S	18 37.3 +00.0	20			
21	57 59.9 +01.0	N	21 00.4 +00.3	153 55.2 +01.9	S	16 28.9 -00.1	162 00.9 +02.2	S	18 37.3 -00.1	21			
22	73 00.9 +00.9	N	21 00.7 +00.4	168 57.1 +01.9	S	16 28.8 -00.2	177 03.1 +02.2	S	18 37.2 -00.1	22			
23	88 01.8 +01.0	N	21 01.1 +00.3	183 59.0 +01.9	S	16 28.6 -00.2	192 05.3 +02.2	S	18 37.1 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 306° 305° 305° 305° 305° 305°			SHA 041° 041° 041° 041° 041° 041°			SHA 049° 049° 049° 049° 049° 049°						
	Greenwich Culmination Time: 17:08			Greenwich Culmination Time: 10:45			Greenwich Culmination Time: 10:13						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 51.6 +00.1	S	07 57.8 -00.9	182 32.2 -00.5	S	11 37.7 -01.1	346 45.9 -30.9	N	09 12.3 -14.3	00			
01	191 51.7 +00.1	S	07 56.9 -01.0	197 31.7 -00.6	S	11 36.6 -01.1	1 15.0 -30.9	N	08 58.0 -14.4	01			
02	206 51.8 +00.1	S	07 55.9 -00.9	212 31.1 -00.5	S	11 35.5 -01.1	15 44.1 -30.9	N	08 43.6 -14.5	02			
03	221 51.9 +00.1	S	07 55.0 -01.0	227 30.6 -00.5	S	11 34.4 -01.1	30 13.2 -30.8	N	08 29.1 -14.5	03			
04	236 52.0 +00.1	S	07 54.0 -00.9	242 30.1 -00.5	S	11 33.3 -01.1	44 42.4 -30.8	N	08 14.6 -14.5	04			
05	251 52.1 +00.2	S	07 53.1 -00.9	257 29.6 -00.5	S	11 32.2 -01.1	59 11.6 -30.8	N	08 00.1 -14.6	05			
06	266 52.3 +00.1	S	07 52.2 -01.0	272 29.1 -00.6	S	11 31.1 -01.1	73 40.8 -30.8	N	07 45.5 -14.7	06			
07	281 52.4 +00.1	S	07 51.2 -00.9	287 28.5 -00.5	S	11 30.0 -01.1	88 10.0 -30.8	N	07 30.8 -14.7	07			
08	296 52.5 +00.1	S	07 50.3 -01.0	302 28.0 -00.5	S	11 28.9 -01.1	102 39.2 -30.7	N	07 16.1 -14.8	08			
09	311 52.6 +00.1	S	07 49.3 -00.9	317 27.5 -00.5	S	11 27.8 -01.1	117 08.5 -30.7	N	07 01.3 -14.8	09			
10	326 52.7 +00.2	S	07 48.4 -01.0	332 27.0 -00.5	S	11 26.7 -01.1	131 37.8 -30.7	N	06 46.5 -14.8	10			
11	341 52.9 +00.1	S	07 47.4 -00.9	347 26.5 -00.6	S	11 25.6 -01.1	146 07.1 -30.7	N	06 31.7 -14.9	11			
12	356 53.0 +00.1	S	07 46.5 -01.0	2 25.9 -00.5	S	11 24.5 -01.1	160 36.4 -30.7	N	06 16.8 -14.9	12			
13	11 53.1 +00.1	S	07 45.5 -00.9	17 25.4 -00.5	S	11 23.4 -01.1	175 05.7 -30.7	N	06 01.9 -15.0	13			
14	26 53.2 +00.1	S	07 44.6 -01.0	32 24.9 -00.5	S	11 22.3 -01.1	189 35.0 -30.6	N	05 46.9 -15.0	14			
15	41 53.3 +00.1	S	07 43.6 -00.9	47 24.4 -00.5	S	11 21.2 -01.1	204 04.4 -30.6	N	05 31.9 -15.1	15			
16	56 53.4 +00.2	S	07 42.7 -01.0	62 23.9 -00.5	S	11 20.1 -01.1	218 33.8 -30.6	N	05 16.8 -15.1	16			
17	71 53.6 +00.1	S	07 41.7 -00.9	77 23.4 -00.5	S	11 19.0 -01.1	233 03.2 -30.6	N	05 01.7 -15.1	17			
18	86 53.7 +00.1	S	07 40.8 -01.0	92 22.9 -00.6	S	11 17.9 -01.1	247 32.6 -30.6	N	04 46.6 -15.2	18			
19	101 53.8 +00.1	S	07 39.8 -00.9	107 22.3 -00.5	S	11 16.8 -01.1	262 02.0 -30.6	N	04 31.4 -15.1	19			
20	116 53.9 +00.1	S	07 38.9 -01.0	122 21.8 -00.5	S	11 15.7 -01.1	276 31.4 -30.5	N	04 16.3 -15.3	20			
21	131 54.0 +00.2	S	07 37.9 -00.9	137 21.3 -00.5	S	11 14.6 -01.1	291 00.9 -30.6	N	04 01.0 -15.2	21			
22	146 54.2 +00.1	S	07 37.0 -01.0	152 20.8 -00.5	S	11 13.5 -01.1	305 30.3 -30.5	N	03 45.8 -15.3	22			
23	161 54.3 +00.1	S	07 36.0 -00.9	167 20.3 -00.5	S	11 12.4 -01.2	319 59.8 -30.6	N	03 30.5 -15.3	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'1 16'1 16'1 16'1 16'1 16'1			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'2 16'2 16'3 16'3 16'3 16'3						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 59'5 59'6 59'6 59'7 59'8 59'8						
	SHA 019° 019° 018° 018° 018° 018°			SHA 024° 024° 024° 024° 024° 023°			SHA 188° 185° 183° 181° 179° 177°						
	Greenwich Culmination Time: 12:12			Greenwich Culmination Time: 11:50			Greenwich Culmination Time: 00:54						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	103 02.8 +01.0	N	21 01.4 +00.4	199 00.9 +01.9	S	16 28.4 -00.1	207 07.5 +02.1	S	18 37.1 -00.1	00			
01	118 03.8 +00.9	N	21 01.8 +00.3	214 02.8 +01.8	S	16 28.3 -00.2	222 09.6 +02.2	S	18 37.0 -00.1	01			
02	133 04.7 +01.0	N	21 02.1 +00.3	229 04.6 +01.9	S	16 28.1 -00.2	237 11.8 +02.2	S	18 36.9 +00.0	02			
03	148 05.7 +01.0	N	21 02.4 +00.4	244 06.5 +01.9	S	16 27.9 -00.1	252 14.0 +02.2	S	18 36.9 -00.1	03			
04	163 06.7 +00.9	N	21 02.8 +00.3	259 08.4 +01.9	S	16 27.8 -00.2	267 16.2 +02.2	S	18 36.8 -00.1	04			
05	178 07.6 +01.0	N	21 03.1 +00.3	274 10.3 +01.9	S	16 27.6 -00.2	282 18.4 +02.2	S	18 36.7 +00.0	05			
06	193 08.6 +00.9	N	21 03.4 +00.4	289 12.2 +01.9	S	16 27.4 -00.1	297 20.6 +02.2	S	18 36.7 -00.1	06			
07	208 09.5 +01.0	N	21 03.8 +00.3	304 14.1 +01.9	S	16 27.3 -00.2	312 22.8 +02.2	S	18 36.6 -00.1	07			
08	223 10.5 +01.0	N	21 04.1 +00.3	319 16.0 +01.9	S	16 27.1 -00.2	327 25.0 +02.2	S	18 36.5 +00.0	08			
09	238 11.5 +00.9	N	21 04.4 +00.4	334 17.9 +01.9	S	16 26.9 -00.1	342 27.2 +02.1	S	18 36.5 -00.1	09			
10	253 12.4 +01.0	N	21 04.8 +00.3	349 19.8 +01.9	S	16 26.8 -00.2	357 29.3 +02.2	S	18 36.4 -00.1	10			
11	268 13.4 +01.0	N	21 05.1 +00.3	4 21.7 +01.9	S	16 26.6 -00.2	12 31.5 +02.2	S	18 36.3 +00.0	11			
12	283 14.4 +00.9	N	21 05.4 +00.4	19 23.6 +01.9	S	16 26.4 -00.1	27 33.7 +02.2	S	18 36.3 -00.1	12			
13	298 15.3 +01.0	N	21 05.8 +00.3	34 25.5 +01.9	S	16 26.3 -00.2	42 35.9 +02.2	S	18 36.2 -00.1	13			
14	313 16.3 +00.9	N	21 06.1 +00.3	49 27.4 +01.9	S	16 26.1 -00.2	57 38.1 +02.2	S	18 36.1 +00.0	14			
15	328 17.2 +01.0	N	21 06.4 +00.4	64 29.3 +01.9	S	16 25.9 -00.1	72 40.3 +02.2	S	18 36.1 -00.1	15			
16	343 18.2 +01.0	N	21 06.8 +00.3	79 31.2 +01.9	S	16 25.8 -00.2	87 42.5 +02.2	S	18 36.0 -00.1	16			
17	358 19.2 +00.9	N	21 07.1 +00.3	94 33.1 +01.9	S	16 25.6 -00.2	102 44.7 +02.2	S	18 35.9 +00.0	17			
18	13 20.1 +01.0	N	21 07.4 +00.4	109 35.0 +01.9	S	16 25.4 -00.1	117 46.9 +02.2	S	18 35.9 -00.1	18			
19	28 21.1 +01.0	N	21 07.8 +00.3	124 36.9 +01.9	S	16 25.3 -00.2	132 49.1 +02.1	S	18 35.8 -00.1	19			
20	43 22.1 +00.9	N	21 08.1 +00.3	139 38.8 +01.9	S	16 25.1 -00.2	147 51.2 +02.2	S	18 35.7 +00.0	20			
21	58 23.0 +01.0	N	21 08.4 +00.4	154 40.7 +01.9	S	16 24.9 -00.1	162 53.4 +02.2	S	18 35.7 -00.1	21			
22	73 24.0 +00.9	N	21 08.8 +00.3	169 42.6 +01.9	S	16 24.8 -00.2	177 55.6 +02.2	S	18 35.6 -00.1	22			
23	88 24.9 +01.0	N	21 09.1 +00.3	184 44.5 +01.9	S	16 24.6 -00.2	192 57.8 +02.2	S	18 35.5 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 305° 305° 305° 305° 305° 304°			SHA 041° 041° 041° 041° 041° 041°			SHA 049° 049° 049° 049° 049° 049°						
	Greenwich Culmination Time: 17:06			Greenwich Culmination Time: 10:42			Greenwich Culmination Time: 10:10						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 54.4 +00.1	S	07 35.1 -01.0	182 19.8 -00.5	S	11 11.2 -01.1	334 29.2 -30.5	N	03 15.2 -15.3	00			
01	191 54.5 +00.2	S	07 34.1 -00.9	197 19.3 -00.5	S	11 10.1 -01.1	348 58.7 -30.5	N	02 59.9 -15.3	01			
02	206 54.7 +00.1	S	07 33.2 -01.0	212 18.8 -00.5	S	11 09.0 -01.1	3 28.2 -30.6	N	02 44.6 -15.4	02			
03	221 54.8 +00.1	S	07 32.2 -00.9	227 18.3 -00.6	S	11 07.9 -01.1	17 57.6 -30.5	N	02 29.2 -15.4	03			
04	236 54.9 +00.1	S	07 31.3 -01.0	242 17.7 -00.5	S	11 06.8 -01.1	32 27.1 -30.5	N	02 13.8 -15.3	04			
05	251 55.0 +00.1	S	07 30.3 -00.9	257 17.2 -00.5	S	11 05.7 -01.1	46 56.6 -30.5	N	01 58.5 -15.5	05			
06	266 55.1 +00.2	S	07 29.4 -01.0	272 16.7 -00.5	S	11 04.6 -01.1	61 26.1 -30.5	N	01 43.0 -15.4	06			
07	281 55.3 +00.1	S	07 28.4 -00.9	287 16.2 -00.5	S	11 03.5 -01.2	75 55.6 -30.5	N	01 27.6 -15.4	07			
08	296 55.4 +00.1	S	07 27.5 -01.0	302 15.7 -00.5	S	11 02.3 -01.1	90 25.1 -30.5	N	01 12.2 -15.4	08			
09	311 55.5 +00.1	S	07 26.5 -00.9	317 15.2 -00.5	S	11 01.2 -01.1	104 54.6 -30.5	N	00 56.8 -15.5	09			
10	326 55.6 +00.2	S	07 25.6 -01.0	332 14.7 -00.5	S	11 00.1 -01.1	119 24.1 -30.5	N	00 41.3 -15.5	10			
11	341 55.8 +00.1	S	07 24.6 -00.9	347 14.2 -00.5	S	10 59.0 -01.1	133 53.6 -30.5	N	00 25.8 -15.4	11			
12	356 55.9 +00.1	S	07 23.7 -01.0	2 13.7 -00.5	S	10 57.9 -01.1	148 23.1 -30.5	N	00 10.4 -15.5	12			
13	11 56.0 +00.1	S	07 22.7 -00.9	17 13.2 -00.5	S	10 56.8 -01.1	162 52.6 -30.5	S	00 05.1 +15.4	13			
14	26 56.1 +00.2	S	07 21.8 -01.0	32 12.7 -00.5	S	10 55.7 -01.2	177 22.1 -30.6	S	00 20.5 +15.5	14			
15	41 56.3 +00.1	S	07 20.8 -00.9	47 12.2 -00.5	S	10 54.5 -01.1	191 51.5 -30.5	S	00 36.0 +15.5	15			
16	56 56.4 +00.1	S	07 19.9 -01.0	62 11.7 -00.5	S	10 53.4 -01.1	206 21.0 -30.5	S	00 51.5 +15.4	16			
17	71 56.5 +00.1	S	07 18.9 -00.9	77 11.2 -00.6	S	10 52.3 -01.1	220 50.5 -30.6	S	01 06.9 +15.5	17			
18	86 56.6 +00.2	S	07 18.0 -01.0	92 10.6 -00.5	S	10 51.2 -01.1	235 19.9 -30.5	S	01 22.4 +15.5	18			
19	101 56.8 +00.1	S	07 17.0 -00.9	107 10.1 -00.5	S	10 50.1 -01.2	249 49.4 -30.6	S	01 37.9 +15.4	19			
20	116 56.9 +00.1	S	07 16.1 -01.0	122 09.6 -00.5	S	10 48.9 -01.1	264 18.8 -30.6	S	01 53.3 +15.4	20			
21	131 57.0 +00.1	S	07 15.1 -00.9	137 09.1 -00.5	S	10 47.8 -01.1	278 48.2 -30.5	S	02 08.7 +15.5	21			
22	146 57.1 +00.2	S	07 14.2 -01.0	152 08.6 -00.5	S	10 46.7 -01.1	293 17.7 -30.6	S	02 24.2 +15.4	22			
23	161 57.3 +00.1	S	07 13.2 -01.0	167 08.1 -00.5	S	10 45.6 -01.1	307 47.1 -30.7	S	02 39.6 +15.4	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'1 16'1 16'1 16'1 16'1 16'1			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'3 16'3 16'3 16'3 16'3 16'3						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 59'8 59'9 59'9 59'9 60'0 60'0						
	SHA 018° 018° 017° 017° 017° 017°			SHA 023° 023° 023° 023° 022° 022°			SHA 174° 172° 170° 168° 166° 163°						
	Greenwich Culmination Time: 12:12			Greenwich Culmination Time: 11:51			Greenwich Culmination Time: 01:45						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	103 25.9 +01.0	N	21 09.4 +00.4	199 46.4 +01.9	S	16 24.4 -00.1	208 00.0 +02.2	S	18 35.5 -00.1	00			
01	118 26.9 +00.9	N	21 09.8 +00.3	214 48.3 +01.9	S	16 24.3 -00.2	223 02.2 +02.2	S	18 35.4 -00.1	01			
02	133 27.8 +01.0	N	21 10.1 +00.3	229 50.2 +01.9	S	16 24.1 -00.2	238 04.4 +02.2	S	18 35.3 +00.0	02			
03	148 28.8 +00.9	N	21 10.4 +00.4	244 52.1 +01.9	S	16 23.9 -00.1	253 06.6 +02.2	S	18 35.3 -00.1	03			
04	163 29.7 +01.0	N	21 10.8 +00.3	259 54.0 +01.9	S	16 23.8 -00.2	268 08.8 +02.2	S	18 35.2 -00.1	04			
05	178 30.7 +01.0	N	21 11.1 +00.3	274 55.9 +01.9	S	16 23.6 -00.2	283 11.0 +02.2	S	18 35.1 +00.0	05			
06	193 31.7 +00.9	N	21 11.4 +00.4	289 57.8 +01.8	S	16 23.4 -00.1	298 13.2 +02.1	S	18 35.1 -00.1	06			
07	208 32.6 +01.0	N	21 11.8 +00.3	304 59.6 +01.9	S	16 23.3 -00.2	313 15.3 +02.2	S	18 35.0 -00.1	07			
08	223 33.6 +00.9	N	21 12.1 +00.3	320 01.5 +01.9	S	16 23.1 -00.2	328 17.5 +02.2	S	18 34.9 +00.0	08			
09	238 34.5 +01.0	N	21 12.4 +00.3	335 03.4 +01.9	S	16 22.9 -00.1	343 19.7 +02.2	S	18 34.9 -00.1	09			
10	253 35.5 +00.9	N	21 12.7 +00.4	350 05.3 +01.9	S	16 22.8 -00.2	358 21.9 +02.2	S	18 34.8 -00.1	10			
11	268 36.4 +01.0	N	21 13.1 +00.3	5 07.2 +01.9	S	16 22.6 -00.2	13 24.1 +02.2	S	18 34.7 +00.0	11			
12	283 37.4 +01.0	N	21 13.4 +00.3	20 09.1 +01.9	S	16 22.4 -00.1	28 26.3 +02.2	S	18 34.7 -00.1	12			
13	298 38.4 +00.9	N	21 13.7 +00.4	35 11.0 +01.9	S	16 22.3 -00.2	43 28.5 +02.2	S	18 34.6 -00.1	13			
14	313 39.3 +01.0	N	21 14.1 +00.3	50 12.9 +01.9	S	16 22.1 -00.2	58 30.7 +02.2	S	18 34.5 +00.0	14			
15	328 40.3 +00.9	N	21 14.4 +00.3	65 14.8 +01.9	S	16 21.9 -00.1	73 32.9 +02.2	S	18 34.5 -00.1	15			
16	343 41.2 +01.0	N	21 14.7 +00.4	80 16.7 +01.9	S	16 21.8 -00.2	88 35.1 +02.2	S	18 34.4 -00.1	16			
17	358 42.2 +00.9	N	21 15.1 +00.3	95 18.6 +01.9	S	16 21.6 -00.2	103 37.3 +02.2	S	18 34.3 +00.0	17			
18	13 43.1 +01.0	N	21 15.4 +00.3	110 20.5 +01.9	S	16 21.4 -00.1	118 39.5 +02.1	S	18 34.3 -00.1	18			
19	28 44.1 +01.0	N	21 15.7 +00.3	125 22.4 +01.9	S	16 21.3 -00.2	133 41.6 +02.2	S	18 34.2 +00.0	19			
20	43 45.1 +00.9	N	21 16.0 +00.4	140 24.3 +01.9	S	16 21.1 -00.2	148 43.8 +02.2	S	18 34.2 -00.1	20			
21	58 46.0 +01.0	N	21 16.4 +00.3	155 26.2 +01.9	S	16 20.9 -00.1	163 46.0 +02.2	S	18 34.1 -00.1	21			
22	73 47.0 +00.9	N	21 16.7 +00.3	170 28.1 +01.9	S	16 20.8 -00.2	178 48.2 +02.2	S	18 34.0 +00.0	22			
23	88 47.9 +01.0	N	21 17.0 +00.3	185 30.0 +01.9	S	16 20.6 -00.2	193 50.4 +02.2	S	18 34.0 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 304° 304° 304° 304° 304° 304°			SHA 041° 041° 041° 041° 041° 041°			SHA 049° 049° 049° 049° 049° 049°						
	Greenwich Culmination Time: 17:05			Greenwich Culmination Time: 10:39			Greenwich Culmination Time: 10:06						

Warning: This page has been generated by a computer program. Complex computer programs usually have bugs and may produce wrong data. The data on this page is believed to be accurate but no warranty is given for its correctness. Use it only for training and exercising!

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	176 57.4 +00.1	S	07 12.2 -00.9	182 07.6 -00.5	S	10 44.5 -01.2	322 16.4 -30.6	S	02 55.0 +15.3	00			
01	191 57.5 +00.1	S	07 11.3 -01.0	197 07.1 -00.5	S	10 43.3 -01.1	336 45.8 -30.6	S	03 10.3 +15.4	01			
02	206 57.6 +00.2	S	07 10.3 -00.9	212 06.6 -00.5	S	10 42.2 -01.1	351 15.2 -30.7	S	03 25.7 +15.4	02			
03	221 57.8 +00.1	S	07 09.4 -01.0	227 06.1 -00.5	S	10 41.1 -01.1	5 44.5 -30.7	S	03 41.1 +15.3	03			
04	236 57.9 +00.1	S	07 08.4 -00.9	242 05.6 -00.5	S	10 40.0 -01.2	20 13.8 -30.7	S	03 56.4 +15.3	04			
05	251 58.0 +00.1	S	07 07.5 -01.0	257 05.1 -00.5	S	10 38.8 -01.1	34 43.1 -30.7	S	04 11.7 +15.3	05			
06	266 58.1 +00.2	S	07 06.5 -00.9	272 04.6 -00.5	S	10 37.7 -01.1	49 12.4 -30.7	S	04 27.0 +15.2	06			
07	281 58.3 +00.1	S	07 05.6 -01.0	287 04.1 -00.5	S	10 36.6 -01.1	63 41.7 -30.8	S	04 42.2 +15.2	07			
08	296 58.4 +00.1	S	07 04.6 -00.9	302 03.6 -00.5	S	10 35.5 -01.2	78 10.9 -30.7	S	04 57.4 +15.2	08			
09	311 58.5 +00.2	S	07 03.7 -01.0	317 03.1 -00.5	S	10 34.3 -01.1	92 40.2 -30.8	S	05 12.6 +15.2	09			
10	326 58.7 +00.1	S	07 02.7 -01.0	332 02.6 -00.5	S	10 33.2 -01.1	107 09.4 -30.9	S	05 27.8 +15.1	10			
11	341 58.8 +00.1	S	07 01.7 -00.9	347 02.1 -00.5	S	10 32.1 -01.1	121 38.5 -30.8	S	05 42.9 +15.1	11			
12	356 58.9 +00.1	S	07 00.8 -01.0	2 01.6 -00.5	S	10 31.0 -01.2	136 07.7 -30.9	S	05 58.0 +15.1	12			
13	11 59.0 +00.2	S	06 59.8 -00.9	17 01.1 -00.4	S	10 29.8 -01.1	150 36.8 -30.9	S	06 13.1 +15.0	13			
14	26 59.2 +00.1	S	06 58.9 -01.0	32 00.7 -00.5	S	10 28.7 -01.1	165 05.9 -30.9	S	06 28.1 +15.0	14			
15	41 59.3 +00.1	S	06 57.9 -00.9	47 00.2 -00.5	S	10 27.6 -01.2	179 35.0 -31.0	S	06 43.1 +14.9	15			
16	56 59.4 +00.2	S	06 57.0 -01.0	61 59.7 -00.5	S	10 26.4 -01.1	194 04.0 -30.9	S	06 58.0 +14.9	16			
17	71 59.6 +00.1	S	06 56.0 -01.0	76 59.2 -00.5	S	10 25.3 -01.1	208 33.1 -31.1	S	07 12.9 +14.9	17			
18	86 59.7 +00.1	S	06 55.0 -00.9	91 58.7 -00.5	S	10 24.2 -01.1	223 02.0 -31.0	S	07 27.8 +14.8	18			
19	101 59.8 +00.2	S	06 54.1 -01.0	106 58.2 -00.5	S	10 23.1 -01.2	237 31.0 -31.1	S	07 42.6 +14.8	19			
20	116 60.0 +00.1	S	06 53.1 -00.9	121 57.7 -00.5	S	10 21.9 -01.1	251 59.9 -31.1	S	07 57.4 +14.7	20			
21	132 00.1 +00.1	S	06 52.2 -01.0	136 57.2 -00.5	S	10 20.8 -01.1	266 28.8 -31.1	S	08 12.1 +14.7	21			
22	147 00.2 +00.1	S	06 51.2 -00.9	151 56.7 -00.5	S	10 19.7 -01.2	280 57.7 -31.2	S	08 26.8 +14.6	22			
23	162 00.3 +00.2	S	06 50.3 -01.0	166 56.2 -00.5	S	10 18.5 -01.1	295 26.5 -31.2	S	08 41.4 +14.6	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'1 16'1 16'1 16'1 16'1 16'1			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'3 16'3 16'3 16'3 16'3 16'3						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 60'0 60'0 60'0 60'0 59'9 59'9						
	SHA 017° 017° 017° 016° 016° 016°			SHA 022° 022° 022° 021° 021° 021°			SHA 161° 159° 157° 155° 152° 150°						
	Greenwich Culmination Time: 12:12			Greenwich Culmination Time: 11:51			Greenwich Culmination Time: 02:36						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	103 48.9 +00.9	N	21 17.3 +00.4	200 31.9 +01.9	S	16 20.4 -00.1	208 52.6 +02.2	S	18 33.9 -00.1	00			
01	118 49.8 +01.0	N	21 17.7 +00.3	215 33.8 +01.9	S	16 20.3 -00.2	223 54.8 +02.2	S	18 33.8 +00.0	01			
02	133 50.8 +00.9	N	21 18.0 +00.3	230 35.7 +01.9	S	16 20.1 -00.2	238 57.0 +02.2	S	18 33.8 -00.1	02			
03	148 51.7 +01.0	N	21 18.3 +00.4	245 37.6 +01.9	S	16 19.9 -00.1	253 59.2 +02.2	S	18 33.7 -00.1	03			
04	163 52.7 +00.9	N	21 18.7 +00.3	260 39.5 +01.9	S	16 19.8 -00.2	269 01.4 +02.2	S	18 33.6 +00.0	04			
05	178 53.6 +01.0	N	21 19.0 +00.3	275 41.4 +01.9	S	16 19.6 -00.2	284 03.6 +02.2	S	18 33.6 -00.1	05			
06	193 54.6 +01.0	N	21 19.3 +00.3	290 43.3 +01.9	S	16 19.4 -00.1	299 05.8 +02.2	S	18 33.5 -00.1	06			
07	208 55.6 +00.9	N	21 19.6 +00.4	305 45.2 +01.9	S	16 19.3 -00.2	314 08.0 +02.2	S	18 33.4 +00.0	07			
08	223 56.5 +01.0	N	21 20.0 +00.3	320 47.1 +01.9	S	16 19.1 -00.2	329 10.2 +02.1	S	18 33.4 -00.1	08			
09	238 57.5 +00.9	N	21 20.3 +00.3	335 49.0 +01.9	S	16 18.9 -00.1	344 12.3 +02.2	S	18 33.3 -00.1	09			
10	253 58.4 +01.0	N	21 20.6 +00.3	350 50.9 +01.9	S	16 18.8 -00.2	359 14.5 +02.2	S	18 33.2 +00.0	10			
11	268 59.4 +00.9	N	21 20.9 +00.4	5 52.8 +01.9	S	16 18.6 -00.2	14 16.7 +02.2	S	18 33.2 -00.1	11			
12	284 00.3 +01.0	N	21 21.3 +00.3	20 54.7 +01.9	S	16 18.4 -00.1	29 18.9 +02.2	S	18 33.1 -00.1	12			
13	299 01.3 +00.9	N	21 21.6 +00.3	35 56.6 +01.9	S	16 18.3 -00.2	44 21.1 +02.2	S	18 33.0 +00.0	13			
14	314 02.2 +01.0	N	21 21.9 +00.3	50 58.5 +01.9	S	16 18.1 -00.2	59 23.3 +02.2	S	18 33.0 -00.1	14			
15	329 03.2 +00.9	N	21 22.2 +00.4	66 00.4 +01.9	S	16 17.9 -00.1	74 25.5 +02.2	S	18 32.9 -00.1	15			
16	344 04.1 +01.0	N	21 22.6 +00.3	81 02.3 +01.9	S	16 17.8 -00.2	89 27.7 +02.2	S	18 32.8 +00.0	16			
17	359 05.1 +00.9	N	21 22.9 +00.3	96 04.2 +01.9	S	16 17.6 -00.2	104 29.9 +02.2	S	18 32.8 -00.1	17			
18	14 06.0 +01.0	N	21 23.2 +00.3	111 06.1 +01.9	S	16 17.4 -00.1	119 32.1 +02.2	S	18 32.7 -00.1	18			
19	29 07.0 +00.9	N	21 23.5 +00.3	126 08.0 +01.9	S	16 17.3 -00.2	134 34.3 +02.2	S	18 32.6 +00.0	19			
20	44 07.9 +01.0	N	21 23.8 +00.4	141 09.9 +01.9	S	16 17.1 -00.2	149 36.5 +02.2	S	18 32.6 -00.1	20			
21	59 08.9 +00.9	N	21 24.2 +00.3	156 11.8 +01.9	S	16 16.9 -00.1	164 38.7 +02.2	S	18 32.5 -00.1	21			
22	74 09.8 +01.0	N	21 24.5 +00.3	171 13.7 +01.9	S	16 16.8 -00.2	179 40.9 +02.2	S	18 32.4 +00.0	22			
23	89 10.8 +00.9	N	21 24.8 +00.3	186 15.6 +01.9	S	16 16.6 -00.2	194 43.1 +02.1	S	18 32.4 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 304° 304° 304° 303° 303° 303°			SHA 041° 040° 040° 040° 040° 040°			SHA 049° 049° 049° 049° 049° 049°						
	Greenwich Culmination Time: 17:03			Greenwich Culmination Time: 10:36			Greenwich Culmination Time: 10:03						

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	177 00.5 +00.1	S	06 49.3 -01.0	181 55.7 -00.5	S	10 17.4 -01.1	309 55.3 -31.3	S	08 56.0 +14.5	00										
01	192 00.6 +00.1	S	06 48.3 -00.9	196 55.2 -00.5	S	10 16.3 -01.2	324 24.0 -31.2	S	09 10.5 +14.5	01										
02	207 00.7 +00.2	S	06 47.4 -01.0	211 54.7 -00.5	S	10 15.1 -01.1	338 52.8 -31.4	S	09 25.0 +14.4	02										
03	222 00.9 +00.1	S	06 46.4 -00.9	226 54.2 -00.5	S	10 14.0 -01.2	353 21.4 -31.3	S	09 39.4 +14.3	03										
04	237 01.0 +00.1	S	06 45.5 -01.0	241 53.7 -00.4	S	10 12.8 -01.1	7 50.1 -31.4	S	09 53.7 +14.3	04										
05	252 01.1 +00.2	S	06 44.5 -01.0	256 53.3 -00.5	S	10 11.7 -01.1	22 18.7 -31.4	S	10 08.0 +14.2	05										
06	267 01.3 +00.1	S	06 43.5 -00.9	271 52.8 -00.5	S	10 10.6 -01.2	36 47.3 -31.5	S	10 22.2 +14.2	06										
07	282 01.4 +00.1	S	06 42.6 -01.0	286 52.3 -00.5	S	10 09.4 -01.1	51 15.8 -31.5	S	10 36.4 +14.1	07										
08	297 01.5 +00.2	S	06 41.6 -00.9	301 51.8 -00.5	S	10 08.3 -01.1	65 44.3 -31.6	S	10 50.5 +14.0	08										
09	312 01.7 +00.1	S	06 40.7 -01.0	316 51.3 -00.5	S	10 07.2 -01.2	80 12.7 -31.6	S	11 04.5 +13.9	09										
10	327 01.8 +00.1	S	06 39.7 -01.0	331 50.8 -00.5	S	10 06.0 -01.1	94 41.1 -31.6	S	11 18.4 +13.9	10										
11	342 01.9 +00.2	S	06 38.7 -00.9	346 50.3 -00.5	S	10 04.9 -01.2	109 09.5 -31.7	S	11 32.3 +13.8	11										
12	357 02.1 +00.1	S	06 37.8 -01.0	1 49.8 -00.5	S	10 03.7 -01.1	123 37.8 -31.8	S	11 46.1 +13.8	12										
13	12 02.2 +00.1	S	06 36.8 -00.9	16 49.3 -00.4	S	10 02.6 -01.1	138 06.0 -31.7	S	11 59.9 +13.7	13										
14	27 02.3 +00.2	S	06 35.9 -01.0	31 48.9 -00.5	S	10 01.5 -01.2	152 34.3 -31.8	S	12 13.6 +13.5	14										
15	42 02.5 +00.1	S	06 34.9 -01.0	46 48.4 -00.5	S	10 00.3 -01.1	167 02.5 -31.9	S	12 27.1 +13.6	15										
16	57 02.6 +00.1	S	06 33.9 -00.9	61 47.9 -00.5	S	09 59.2 -01.2	181 30.6 -31.9	S	12 40.7 +13.4	16										
17	72 02.7 +00.2	S	06 33.0 -01.0	76 47.4 -00.5	S	09 58.0 -01.1	195 58.7 -32.0	S	12 54.1 +13.4	17										
18	87 02.9 +00.1	S	06 32.0 -00.9	91 46.9 -00.5	S	09 56.9 -01.1	210 26.7 -32.0	S	13 07.5 +13.2	18										
19	102 03.0 +00.1	S	06 31.1 -01.0	106 46.4 -00.5	S	09 55.8 -01.2	224 54.7 -32.0	S	13 20.7 +13.2	19										
20	117 03.1 +00.2	S	06 30.1 -01.0	121 45.9 -00.4	S	09 54.6 -01.1	239 22.7 -32.1	S	13 33.9 +13.1	20										
21	132 03.3 +00.1	S	06 29.1 -00.9	136 45.5 -00.5	S	09 53.5 -01.2	253 50.6 -32.2	S	13 47.0 +13.1	21										
22	147 03.4 +00.1	S	06 28.2 -01.0	151 45.0 -00.5	S	09 52.3 -01.1	268 18.4 -32.2	S	14 00.1 +12.9	22										
23	162 03.5 +00.2	S	06 27.2 -00.9	166 44.5 -00.5	S	09 51.2 -01.2	282 46.2 -32.3	S	14 13.0 +12.8	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16'1	16'1	16'1	16'1	16'1	16'1	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	16'3	16'3	16'3	16'3	16'3	16'3
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	59'9	59'9	59'8	59'8	59'8	59'7
SHA	016°	016°	016°	015°	015°	015°	SHA	021°	021°	020°	020°	020°	020°	SHA	148°	146°	143°	141°	139°	136°
Greenwich Culmination Time: 12:11							Greenwich Culmination Time: 11:52							Greenwich Culmination Time: 03:27						

UT	Mars				Jupiter				Saturn				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	104 11.7 +01.0	N	21 25.1 +00.4	201 17.5 +01.9	S	16 16.4 -00.1	209 45.2 +02.2	S	18 32.3 +00.0	00										
01	119 12.7 +00.9	N	21 25.5 +00.3	216 19.4 +01.9	S	16 16.3 -00.2	224 47.4 +02.2	S	18 32.3 -00.1	01										
02	134 13.6 +01.0	N	21 25.8 +00.3	231 21.3 +01.9	S	16 16.1 -00.2	239 49.6 +02.2	S	18 32.2 -00.1	02										
03	149 14.6 +00.9	N	21 26.1 +00.3	246 23.2 +01.9	S	16 15.9 -00.1	254 51.8 +02.2	S	18 32.1 +00.0	03										
04	164 15.5 +01.0	N	21 26.4 +00.3	261 25.1 +01.9	S	16 15.8 -00.2	269 54.0 +02.2	S	18 32.1 -00.1	04										
05	179 16.5 +00.9	N	21 26.7 +00.4	276 27.0 +01.9	S	16 15.6 -00.2	284 56.2 +02.2	S	18 32.0 -00.1	05										
06	194 17.4 +01.0	N	21 27.1 +00.3	291 28.9 +01.9	S	16 15.4 -00.1	299 58.4 +02.2	S	18 31.9 +00.0	06										
07	209 18.4 +00.9	N	21 27.4 +00.3	306 30.8 +01.9	S	16 15.3 -00.2	315 00.6 +02.2	S	18 31.9 -00.1	07										
08	224 19.3 +01.0	N	21 27.7 +00.3	321 32.7 +01.9	S	16 15.1 -00.2	330 02.8 +02.2	S	18 31.8 -00.1	08										
09	239 20.3 +00.9	N	21 28.0 +00.3	336 34.6 +01.9	S	16 14.9 -00.1	345 05.0 +02.2	S	18 31.7 +00.0	09										
10	254 21.2 +01.0	N	21 28.3 +00.4	351 36.5 +01.9	S	16 14.8 -00.2	0 07.2 +02.2	S	18 31.7 -00.1	10										
11	269 22.2 +00.9	N	21 28.7 +00.3	6 38.4 +02.0	S	16 14.6 -00.2	15 09.4 +02.2	S	18 31.6 -00.1	11										
12	284 23.1 +01.0	N	21 29.0 +00.3	21 40.4 +01.9	S	16 14.4 -00.1	30 11.6 +02.2	S	18 31.5 +00.0	12										
13	299 24.1 +00.9	N	21 29.3 +00.3	36 42.3 +01.9	S	16 14.3 -00.2	45 13.8 +02.2	S	18 31.5 -00.1	13										
14	314 25.0 +01.0	N	21 29.6 +00.3	51 44.2 +01.9	S	16 14.1 -00.2	60 16.0 +02.2	S	18 31.4 -00.1	14										
15	329 26.0 +00.9	N	21 29.9 +00.4	66 46.1 +01.9	S	16 13.9 -00.1	75 18.2 +02.2	S	18 31.3 +00.0	15										
16	344 26.9 +00.9	N	21 30.3 +00.3	81 48.0 +01.9	S	16 13.8 -00.2	90 20.4 +02.2	S	18 31.3 -00.1	16										
17	359 27.8 +01.0	N	21 30.6 +00.3	96 49.9 +01.9	S	16 13.6 -00.2	105 22.6 +02.2	S	18 31.2 -00.1	17										
18	14 28.8 +00.9	N	21 30.9 +00.3	111 51.8 +01.9	S	16 13.4 -00.1	120 24.8 +02.2	S	18 31.1 +00.0	18										
19	29 29.7 +01.0	N	21 31.2 +00.3	126 53.7 +01.9	S	16 13.3 -00.2	135 27.0 +02.2	S	18 31.1 -00.1	19										
20	44 30.7 +00.9	N	21 31.5 +00.4	141 55.6 +01.9	S	16 13.1 -00.2	150 29.2 +02.1	S	18 31.0 -00.1	20										
21	59 31.6 +01.0	N	21 31.9 +00.3	156 57.5 +01.9	S	16 12.9 -00.1	165 31.3 +02.2	S	18 30.9 +00.0	21										
22	74 32.6 +00.9	N	21 32.2 +00.3	171 59.4 +01.9	S	16 12.8 -00.2	180 33.5 +02.2	S	18 30.9 -00.1	22										
23	89 33.5 +01.0	N	21 32.5 +00.3	187 01.3 +01.9	S	16 12.6 -00.2	195 35.7 +02.2	S	18 30.8 +00.0	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	00'3	00'3	00'3	00'3	00'3	00'3	SD	00'1	00'1	00'1	00'1	00'1	00'1
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP	00'0	00'0	00'0	00'0	00'0	00'0
SHA	303°	303°	303°	303°	303°	303°	SHA	040°	040°	040°	040°	040°	040°	SHA	049°	049°	049°	049°	049°	049°
Greenwich Culmination Time: 17:02							Greenwich Culmination Time: 10:33							Greenwich Culmination Time: 09:59						

UT	Sun				Venus				Moon				UT				
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec					
00	177 03.7 +00.1	S	06 26.3 -01.0	181 44.0 -00.5	S	09 50.0 -01.1	297 13.9 -32.3	S	14 25.8 +12.8	00							
01	192 03.8 +00.2	S	06 25.3 -01.0	196 43.5 -00.5	S	09 48.9 -01.1	311 41.6 -32.3	S	14 38.6 +12.6	01							
02	207 04.0 +00.1	S	06 24.3 -00.9	211 43.0 -00.4	S	09 47.8 -01.2	326 09.3 -32.4	S	14 51.2 +12.6	02							
03	222 04.1 +00.1	S	06 23.4 -01.0	226 42.6 -00.5	S	09 46.6 -01.1	340 36.9 -32.5	S	15 03.8 +12.5	03							
04	237 04.2 +00.2	S	06 22.4 -01.0	241 42.1 -00.5	S	09 45.5 -01.2	355 04.4 -32.5	S	15 16.3 +12.4	04							
05	252 04.4 +00.1	S	06 21.4 -00.9	256 41.6 -00.5	S	09 44.3 -01.1	9 31.9 -32.5	S	15 28.7 +12.2	05							
06	267 04.5 +00.1	S	06 20.5 -01.0	271 41.1 -00.5	S	09 43.2 -01.2	23 59.4 -32.6	S	15 40.9 +12.2	06							
07	282 04.6 +00.2	S	06 19.5 -00.9	286 40.6 -00.4	S	09 42.0 -01.1	38 26.8 -32.7	S	15 53.1 +12.1	07							
08	297 04.8 +00.1	S	06 18.6 -01.0	301 40.2 -00.5	S	09 40.9 -01.2	52 54.1 -32.7	S	16 05.2 +12.0	08							
09	312 04.9 +00.2	S	06 17.6 -01.0	316 39.7 -00.5	S	09 39.7 -01.1	67 21.4 -32.8	S	16 17.2 +11.9	09							
10	327 05.1 +00.1	S	06 16.6 -00.9	331 39.2 -00.5	S	09 38.6 -01.2	81 48.6 -32.8	S	16 29.1 +11.7	10							
11	342 05.2 +00.1	S	06 15.7 -01.0	346 38.7 -00.5	S	09 37.4 -01.1	96 15.8 -32.9	S	16 40.8 +11.7	11							
12	357 05.3 +00.2	S	06 14.7 -01.0	1 38.2 -00.4	S	09 36.3 -01.2	110 42.9 -32.9	S	16 52.5 +11.6	12							
13	12 05.5 +00.1	S	06 13.7 -00.9	16 37.8 -00.5	S	09 35.1 -01.1	125 10.0 -33.0	S	17 04.1 +11.4	13							
14	27 05.6 +00.1	S	06 12.8 -01.0	31 37.3 -00.5	S	09 34.0 -01.2	139 37.0 -33.0	S	17 15.5 +11.3	14							
15	42 05.7 +00.2	S	06 11.8 -01.0	46 36.8 -00.5	S	09 32.8 -01.1	154 04.0 -33.1	S	17 26.8 +11.3	15							
16	57 05.9 +00.1	S	06 10.8 -00.9	61 36.3 -00.4	S	09 31.7 -01.2	168 30.9 -33.2	S	17 38.1 +11.1	16							
17	72 06.0 +00.2	S	06 09.9 -01.0	76 35.9 -00.5	S	09 30.5 -01.1	182 57.7 -33.2	S	17 49.2 +11.0	17							
18	87 06.2 +00.1	S	06 08.9 -01.0	91 35.4 -00.5	S	09 29.4 -01.2	197 24.5 -33.2	S	18 00.2 +10.9	18							
19	102 06.3 +00.1	S	06 07.9 -00.9	106 34.9 -00.5	S	09 28.2 -01.1	211 51.3 -33.3	S	18 11.1 +10.8	19							
20	117 06.4 +00.2	S	06 07.0 -01.0	121 34.4 -00.4	S	09 27.1 -01.2	226 18.0 -33.4	S	18 21.9 +10.6	20							
21	132 06.6 +00.1	S	06 06.0 -01.0	136 34.0 -00.5	S	09 25.9 -01.2	240 44.6 -33.4	S	18 32.5 +10.5	21							
22	147 06.7 +00.2	S	06 05.0 -00.9	151 33.5 -00.5	S	09 24.7 -01.1	255 11.2 -33.5	S	18 43.0 +10.5	22							
23	162 06.9 +00.1	S	06 04.1 -01.0	166 33.0 -00.5	S	09 23.6 -01.2	269 37.7 -33.5	S	18 53.5 +10.3	23							
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT			
SD	16'1	16'1	16'1	16'1	16'1	16'1	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD			
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP			
SHA	015°	015°	015°	015°	014°	014°	SHA	020°	019°	019°	019°	019°	019°	SHA			
Greenwich Culmination Time: 12:11						Greenwich Culmination Time: 11:53						Greenwich Culmination Time: 04:20					

UT	Mars				Jupiter				Saturn				UT				
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec					
00	104 34.5 +00.9	N	21 32.8 +00.3	202 03.2 +01.9	S	16 12.4 -00.1	210 37.9 +02.2	S	18 30.8 -00.1	00							
01	119 35.4 +00.9	N	21 33.1 +00.3	217 05.1 +01.9	S	16 12.3 -00.2	225 40.1 +02.2	S	18 30.7 -00.1	01							
02	134 36.3 +01.0	N	21 33.4 +00.4	232 07.0 +01.9	S	16 12.1 -00.2	240 42.3 +02.2	S	18 30.6 +00.0	02							
03	149 37.3 +00.9	N	21 33.8 +00.3	247 08.9 +01.9	S	16 11.9 -00.1	255 44.5 +02.2	S	18 30.6 -00.1	03							
04	164 38.2 +01.0	N	21 34.1 +00.3	262 10.8 +01.9	S	16 11.8 -00.2	270 46.7 +02.2	S	18 30.5 -00.1	04							
05	179 39.2 +00.9	N	21 34.4 +00.3	277 12.7 +01.9	S	16 11.6 -00.2	285 48.9 +02.2	S	18 30.4 +00.0	05							
06	194 40.1 +01.0	N	21 34.7 +00.3	292 14.6 +01.9	S	16 11.4 -00.1	300 51.1 +02.2	S	18 30.4 -00.1	06							
07	209 41.1 +00.9	N	21 35.0 +00.3	307 16.5 +01.9	S	16 11.3 -00.2	315 53.3 +02.2	S	18 30.3 -00.1	07							
08	224 42.0 +01.0	N	21 35.3 +00.3	322 18.4 +01.9	S	16 11.1 -00.2	330 55.5 +02.2	S	18 30.2 +00.0	08							
09	239 43.0 +00.9	N	21 35.6 +00.4	337 20.3 +01.9	S	16 10.9 -00.1	345 57.7 +02.2	S	18 30.2 -00.1	09							
10	254 43.9 +00.9	N	21 36.0 +00.3	352 22.2 +01.9	S	16 10.8 -00.2	0 59.9 +02.2	S	18 30.1 -00.1	10							
11	269 44.8 +01.0	N	21 36.3 +00.3	7 24.1 +01.9	S	16 10.6 -00.2	16 02.1 +02.2	S	18 30.0 +00.0	11							
12	284 45.8 +00.9	N	21 36.6 +00.3	22 26.0 +01.9	S	16 10.4 -00.1	31 04.3 +02.2	S	18 30.0 -00.1	12							
13	299 46.7 +01.0	N	21 36.9 +00.3	37 27.9 +01.9	S	16 10.3 -00.2	46 06.5 +02.2	S	18 29.9 -00.1	13							
14	314 47.7 +00.9	N	21 37.2 +00.3	52 29.8 +01.9	S	16 10.1 -00.2	61 08.7 +02.2	S	18 29.8 +00.0	14							
15	329 48.6 +00.9	N	21 37.5 +00.3	67 31.7 +02.0	S	16 09.9 -00.1	76 10.9 +02.2	S	18 29.8 -00.1	15							
16	344 49.5 +01.0	N	21 37.8 +00.4	82 33.7 +01.9	S	16 09.8 -00.2	91 13.1 +02.2	S	18 29.7 -00.1	16							
17	359 50.5 +00.9	N	21 38.2 +00.3	97 35.6 +01.9	S	16 09.6 -00.2	106 15.3 +02.2	S	18 29.6 +00.0	17							
18	14 51.4 +01.0	N	21 38.5 +00.3	112 37.5 +01.9	S	16 09.4 -00.1	121 17.5 +02.2	S	18 29.6 -00.1	18							
19	29 52.4 +00.9	N	21 38.8 +00.3	127 39.4 +01.9	S	16 09.3 -00.2	136 19.7 +02.2	S	18 29.5 +00.0	19							
20	44 53.3 +00.9	N	21 39.1 +00.3	142 41.3 +01.9	S	16 09.1 -00.2	151 21.9 +02.2	S	18 29.5 -00.1	20							
21	59 54.2 +01.0	N	21 39.4 +00.3	157 43.2 +01.9	S	16 08.9 -00.1	166 24.1 +02.2	S	18 29.4 -00.1	21							
22	74 55.2 +00.9	N	21 39.7 +00.3	172 45.1 +01.9	S	16 08.8 -00.2	181 26.3 +02.2	S	18 29.3 +00.0	22							
23	89 56.1 +01.0	N	21 40.0 +00.4	187 47.0 +01.9	S	16 08.6 -00.2	196 28.5 +02.2	S	18 29.3 -00.1	23							
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT			
SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	00'3	00'3	00'3	00'3	00'3	00'3	SD			
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP			
SHA	303°	302°	302°	302°	302°	302°	SHA	040°	040°	040°	040°	040°	040°	SHA			
Greenwich Culmination Time: 17:00						Greenwich Culmination Time: 10:30						Greenwich Culmination Time: 09:56					

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 07.0 +00.1	S	06 03.1 -00.9	181 32.5 -00.4	S	09 22.4 -01.1	284 04.2 -33.6	S	19 03.8 +10.1	00			
01	192 07.1 +00.2	S	06 02.2 -01.0	196 32.1 -00.5	S	09 21.3 -01.2	298 30.6 -33.6	S	19 13.9 +10.1	01			
02	207 07.3 +00.1	S	06 01.2 -01.0	211 31.6 -00.5	S	09 20.1 -01.1	312 57.0 -33.7	S	19 24.0 +09.9	02			
03	222 07.4 +00.2	S	06 00.2 -00.9	226 31.1 -00.5	S	09 19.0 -01.2	327 23.3 -33.7	S	19 33.9 +09.8	03			
04	237 07.6 +00.1	S	05 59.3 -01.0	241 30.6 -00.4	S	09 17.8 -01.1	341 49.6 -33.8	S	19 43.7 +09.7	04			
05	252 07.7 +00.1	S	05 58.3 -01.0	256 30.2 -00.5	S	09 16.7 -01.2	356 15.8 -33.8	S	19 53.4 +09.5	05			
06	267 07.8 +00.2	S	05 57.3 -00.9	271 29.7 -00.5	S	09 15.5 -01.2	10 42.0 -33.9	S	20 02.9 +09.4	06			
07	282 08.0 +00.1	S	05 56.4 -01.0	286 29.2 -00.5	S	09 14.3 -01.1	25 08.1 -33.9	S	20 12.3 +09.3	07			
08	297 08.1 +00.2	S	05 55.4 -01.0	301 28.7 -00.4	S	09 13.2 -01.2	39 34.2 -34.0	S	20 21.6 +09.2	08			
09	312 08.3 +00.1	S	05 54.4 -00.9	316 28.3 -00.5	S	09 12.0 -01.1	54 00.2 -34.0	S	20 30.8 +09.0	09			
10	327 08.4 +00.2	S	05 53.5 -01.0	331 27.8 -00.5	S	09 10.9 -01.2	68 26.2 -34.1	S	20 39.8 +08.9	10			
11	342 08.6 +00.1	S	05 52.5 -01.0	346 27.3 -00.4	S	09 09.7 -01.2	82 52.1 -34.1	S	20 48.7 +08.7	11			
12	357 08.7 +00.1	S	05 51.5 -01.0	1 26.9 -00.5	S	09 08.5 -01.1	97 18.0 -34.2	S	20 57.4 +08.6	12			
13	12 08.8 +00.2	S	05 50.5 -00.9	16 26.4 -00.5	S	09 07.4 -01.2	111 43.8 -34.2	S	21 06.0 +08.5	13			
14	27 09.0 +00.1	S	05 49.6 -01.0	31 25.9 -00.4	S	09 06.2 -01.1	126 09.6 -34.3	S	21 14.5 +08.3	14			
15	42 09.1 +00.2	S	05 48.6 -01.0	46 25.5 -00.5	S	09 05.1 -01.2	140 35.3 -34.3	S	21 22.8 +08.3	15			
16	57 09.3 +00.1	S	05 47.6 -00.9	61 25.0 -00.5	S	09 03.9 -01.2	155 01.0 -34.4	S	21 31.1 +08.0	16			
17	72 09.4 +00.2	S	05 46.7 -01.0	76 24.5 -00.5	S	09 02.7 -01.1	169 26.6 -34.4	S	21 39.1 +07.9	17			
18	87 09.6 +00.1	S	05 45.7 -01.0	91 24.0 -00.4	S	09 01.6 -01.2	183 52.2 -34.4	S	21 47.0 +07.8	18			
19	102 09.7 +00.1	S	05 44.7 -00.9	106 23.6 -00.5	S	09 00.4 -01.2	198 17.8 -34.5	S	21 54.8 +07.7	19			
20	117 09.8 +00.2	S	05 43.8 -01.0	121 23.1 -00.5	S	08 59.2 -01.1	212 43.3 -34.6	S	22 02.5 +07.5	20			
21	132 10.0 +00.1	S	05 42.8 -01.0	136 22.6 -00.4	S	08 58.1 -01.2	227 08.7 -34.5	S	22 10.0 +07.3	21			
22	147 10.1 +00.2	S	05 41.8 -00.9	151 22.2 -00.5	S	08 56.9 -01.2	241 34.2 -34.7	S	22 17.3 +07.2	22			
23	162 10.3 +00.1	S	05 40.9 -01.0	166 21.7 -00.5	S	08 55.7 -01.1	255 59.5 -34.6	S	22 24.5 +07.1	23			
UT 02 06 10 14 18 22 SD 16'1 16'1 16'1 16'1 16'1 16'1 HP 00'1 00'1 00'1 00'1 00'1 00'1 SHA 014° 014° 014° 014° 013° 013° Greenwich Culmination Time: 12:11				UT 02 06 10 14 18 22 SD 00'1 00'1 00'1 00'1 00'1 00'1 HP 00'1 00'1 00'1 00'1 00'1 00'1 SHA 018° 018° 018° 018° 018° 018° Greenwich Culmination Time: 11:54				UT 02 06 10 14 18 22 SD 16'2 16'1 16'1 16'1 16'1 16'1 HP 59'3 59'3 59'2 59'1 59'0 59'0 SHA 120° 117° 115° 113° 110° 108° Greenwich Culmination Time: 05:15					
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	104 57.1 +00.9	N	21 40.4 +00.3	202 48.9 +01.9	S	16 08.4 -00.1	211 30.7 +02.2	S	18 29.2 -00.1	00			
01	119 58.0 +00.9	N	21 40.7 +00.3	217 50.8 +01.9	S	16 08.3 -00.2	226 32.9 +02.2	S	18 29.1 +00.0	01			
02	134 58.9 +01.0	N	21 41.0 +00.3	232 52.7 +01.9	S	16 08.1 -00.2	241 35.1 +02.2	S	18 29.1 -00.1	02			
03	149 59.9 +00.9	N	21 41.3 +00.3	247 54.6 +01.9	S	16 07.9 -00.1	256 37.3 +02.2	S	18 29.0 -00.1	03			
04	165 00.8 +01.0	N	21 41.6 +00.3	262 56.5 +01.9	S	16 07.8 -00.2	271 39.5 +02.2	S	18 28.9 +00.0	04			
05	180 01.8 +00.9	N	21 41.9 +00.3	277 58.4 +01.9	S	16 07.6 -00.2	286 41.7 +02.2	S	18 28.9 -00.1	05			
06	195 02.7 +00.9	N	21 42.2 +00.3	293 00.3 +01.9	S	16 07.4 -00.1	301 43.9 +02.2	S	18 28.8 -00.1	06			
07	210 03.6 +01.0	N	21 42.5 +00.3	308 02.2 +01.9	S	16 07.3 -00.2	316 46.1 +02.2	S	18 28.7 +00.0	07			
08	225 04.6 +00.9	N	21 42.8 +00.4	323 04.1 +01.9	S	16 07.1 -00.2	331 48.3 +02.2	S	18 28.7 -00.1	08			
09	240 05.5 +01.0	N	21 43.2 +00.3	338 06.0 +02.0	S	16 06.9 -00.1	346 50.5 +02.2	S	18 28.6 -00.1	09			
10	255 06.5 +00.9	N	21 43.5 +00.3	353 08.0 +01.9	S	16 06.8 -00.2	1 52.7 +02.2	S	18 28.5 +00.0	10			
11	270 07.4 +00.9	N	21 43.8 +00.3	8 09.9 +01.9	S	16 06.6 -00.2	16 54.9 +02.2	S	18 28.5 -00.1	11			
12	285 08.3 +01.0	N	21 44.1 +00.3	23 11.8 +01.9	S	16 06.4 -00.1	31 57.1 +02.1	S	18 28.4 +00.0	12			
13	300 09.3 +00.9	N	21 44.4 +00.3	38 13.7 +01.9	S	16 06.3 -00.2	46 59.2 +02.2	S	18 28.4 -00.1	13			
14	315 10.2 +00.9	N	21 44.7 +00.3	53 15.6 +01.9	S	16 06.1 -00.2	62 01.4 +02.2	S	18 28.3 -00.1	14			
15	330 11.1 +01.0	N	21 45.0 +00.3	68 17.5 +01.9	S	16 05.9 -00.1	77 03.6 +02.2	S	18 28.2 +00.0	15			
16	345 12.1 +00.9	N	21 45.3 +00.3	83 19.4 +01.9	S	16 05.8 -00.2	92 05.8 +02.2	S	18 28.2 -00.1	16			
17	0 13.0 +00.9	N	21 45.6 +00.3	98 21.3 +01.9	S	16 05.6 -00.2	107 08.0 +02.2	S	18 28.1 -00.1	17			
18	15 13.9 +01.0	N	21 45.9 +00.3	113 23.2 +01.9	S	16 05.4 -00.1	122 10.2 +02.2	S	18 28.0 +00.0	18			
19	30 14.9 +00.9	N	21 46.2 +00.4	128 25.1 +01.9	S	16 05.3 -00.2	137 12.4 +02.2	S	18 28.0 -00.1	19			
20	45 15.8 +01.0	N	21 46.6 +00.3	143 27.0 +01.9	S	16 05.1 -00.1	152 14.6 +02.2	S	18 27.9 -00.1	20			
21	60 16.8 +00.9	N	21 46.9 +00.3	158 28.9 +01.9	S	16 05.0 -00.2	167 16.8 +02.2	S	18 27.8 +00.0	21			
22	75 17.7 +00.9	N	21 47.2 +00.3	173 30.8 +01.9	S	16 04.8 -00.2	182 19.0 +02.2	S	18 27.8 -00.1	22			
23	90 18.6 +01.0	N	21 47.5 +00.3	188 32.7 +02.0	S	16 04.6 -00.1	197 21.2 +02.2	S	18 27.7 -00.1	23			
UT 02 06 10 14 18 22 SD 00'1 00'1 00'1 00'1 00'1 00'1 HP 00'1 00'1 00'1 00'1 00'1 00'1 SHA 302° 302° 302° 302° 302° 301° Greenwich Culmination Time: 16:59				UT 02 06 10 14 18 22 SD 00'3 00'3 00'3 00'3 00'3 00'3 HP 00'0 00'0 00'0 00'0 00'0 00'0 SHA 040° 040° 040° 040° 040° 040° Greenwich Culmination Time: 10:27				UT 02 06 10 14 18 22 SD 00'1 00'1 00'1 00'1 00'1 00'1 HP 00'0 00'0 00'0 00'0 00'0 00'0 SHA 049° 049° 049° 048° 048° 048° Greenwich Culmination Time: 09:52					

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 10.4 +00.2	S	05 39.9 -01.0	181 21.2 -00.4	S	08 54.6 -01.2	270 24.9 -34.7	S	22 31.6 +06.9	00			
01	192 10.6 +00.1	S	05 38.9 -00.9	196 20.8 -00.5	S	08 53.4 -01.2	284 50.2 -34.7	S	22 38.5 +06.8	01			
02	207 10.7 +00.2	S	05 38.0 -01.0	211 20.3 -00.4	S	08 52.2 -01.1	299 15.5 -34.8	S	22 45.3 +06.6	02			
03	222 10.9 +00.1	S	05 37.0 -01.0	226 19.9 -00.5	S	08 51.1 -01.2	313 40.7 -34.8	S	22 51.9 +06.4	03			
04	237 11.0 +00.1	S	05 36.0 -01.0	241 19.4 -00.5	S	08 49.9 -01.2	328 05.9 -34.9	S	22 58.3 +06.4	04			
05	252 11.1 +00.2	S	05 35.0 -00.9	256 18.9 -00.4	S	08 48.7 -01.1	342 31.0 -34.8	S	23 04.7 +06.1	05			
06	267 11.3 +00.1	S	05 34.1 -01.0	271 18.5 -00.5	S	08 47.6 -01.2	356 56.2 -34.9	S	23 10.8 +06.1	06			
07	282 11.4 +00.2	S	05 33.1 -01.0	286 18.0 -00.5	S	08 46.4 -01.2	11 21.3 -35.0	S	23 16.9 +05.8	07			
08	297 11.6 +00.1	S	05 32.1 -00.9	301 17.5 -00.4	S	08 45.2 -01.1	25 46.3 -34.9	S	23 22.7 +05.7	08			
09	312 11.7 +00.2	S	05 31.2 -01.0	316 17.1 -00.5	S	08 44.1 -01.2	40 11.4 -35.0	S	23 28.4 +05.6	09			
10	327 11.9 +00.1	S	05 30.2 -01.0	331 16.6 -00.5	S	08 42.9 -01.2	54 36.4 -35.1	S	23 34.0 +05.4	10			
11	342 12.0 +00.2	S	05 29.2 -00.9	346 16.1 -00.4	S	08 41.7 -01.1	69 01.3 -35.0	S	23 39.4 +05.3	11			
12	357 12.2 +00.1	S	05 28.3 -01.0	1 15.7 -00.5	S	08 40.6 -01.2	83 26.3 -35.1	S	23 44.7 +05.1	12			
13	12 12.3 +00.2	S	05 27.3 -01.0	16 15.2 -00.4	S	08 39.4 -01.2	97 51.2 -35.1	S	23 49.8 +04.9	13			
14	27 12.5 +00.1	S	05 26.3 -01.0	31 14.8 -00.5	S	08 38.2 -01.2	112 16.1 -35.1	S	23 54.7 +04.8	14			
15	42 12.6 +00.2	S	05 25.3 -00.9	46 14.3 -00.5	S	08 37.0 -01.1	126 41.0 -35.1	S	23 59.5 +04.6	15			
16	57 12.8 +00.1	S	05 24.4 -01.0	61 13.8 -00.4	S	08 35.9 -01.2	141 05.9 -35.2	S	24 04.1 +04.5	16			
17	72 12.9 +00.1	S	05 23.4 -01.0	76 13.4 -00.5	S	08 34.7 -01.2	155 30.7 -35.2	S	24 08.6 +04.3	17			
18	87 13.0 +00.2	S	05 22.4 -00.9	91 12.9 -00.4	S	08 33.5 -01.1	169 55.5 -35.2	S	24 12.9 +04.2	18			
19	102 13.2 +00.1	S	05 21.5 -01.0	106 12.5 -00.5	S	08 32.4 -01.2	184 20.3 -35.2	S	24 17.1 +04.0	19			
20	117 13.3 +00.2	S	05 20.5 -01.0	121 12.0 -00.5	S	08 31.2 -01.2	198 45.1 -35.2	S	24 21.1 +03.9	20			
21	132 13.5 +00.1	S	05 19.5 -01.0	136 11.5 -00.4	S	08 30.0 -01.2	213 09.9 -35.2	S	24 25.0 +03.7	21			
22	147 13.6 +00.2	S	05 18.5 -00.9	151 11.1 -00.5	S	08 28.8 -01.1	227 34.7 -35.3	S	24 28.7 +03.5	22			
23	162 13.8 +00.1	S	05 17.6 -01.0	166 10.6 -00.4	S	08 27.7 -01.2	241 59.4 -35.2	S	24 32.2 +03.4	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'1 16'1 16'1 16'1 16'1 16'1			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'0 16'0 16'0 16'0 16'0 15'9						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 58'9 58'8 58'7 58'7 58'6 58'5						
	SHA 013° 013° 013° 013° 013° 012°			SHA 017° 017° 017° 017° 017° 016°			SHA 105° 103° 100° 098° 095° 093°						
	Greenwich Culmination Time: 12:11			Greenwich Culmination Time: 11:54			Greenwich Culmination Time: 06:12						

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	105 19.6 +00.9	N	21 47.8 +00.3	203 34.7 +01.9	S	16 04.5 -00.2	212 23.4 +02.2	S	18 27.6 +00.0	00			
01	120 20.5 +00.9	N	21 48.1 +00.3	218 36.6 +01.9	S	16 04.3 -00.2	227 25.6 +02.2	S	18 27.6 -00.1	01			
02	135 21.4 +01.0	N	21 48.4 +00.3	233 38.5 +01.9	S	16 04.1 -00.1	242 27.8 +02.2	S	18 27.5 +00.0	02			
03	150 22.4 +00.9	N	21 48.7 +00.3	248 40.4 +01.9	S	16 04.0 -00.2	257 30.0 +02.2	S	18 27.5 -00.1	03			
04	165 23.3 +00.9	N	21 49.0 +00.3	263 42.3 +01.9	S	16 03.8 -00.2	272 32.2 +02.2	S	18 27.4 -00.1	04			
05	180 24.2 +01.0	N	21 49.3 +00.3	278 44.2 +01.9	S	16 03.6 -00.1	287 34.4 +02.2	S	18 27.3 +00.0	05			
06	195 25.2 +00.9	N	21 49.6 +00.3	293 46.1 +01.9	S	16 03.5 -00.2	302 36.6 +02.2	S	18 27.3 -00.1	06			
07	210 26.1 +00.9	N	21 49.9 +00.3	308 48.0 +01.9	S	16 03.3 -00.2	317 38.8 +02.2	S	18 27.2 -00.1	07			
08	225 27.0 +01.0	N	21 50.2 +00.3	323 49.9 +01.9	S	16 03.1 -00.1	332 41.0 +02.2	S	18 27.1 +00.0	08			
09	240 28.0 +00.9	N	21 50.5 +00.3	338 51.8 +01.9	S	16 03.0 -00.2	347 43.2 +02.3	S	18 27.1 -00.1	09			
10	255 28.9 +00.9	N	21 50.8 +00.3	353 53.7 +01.9	S	16 02.8 -00.2	2 45.5 +02.2	S	18 27.0 -00.1	10			
11	270 29.8 +01.0	N	21 51.1 +00.4	8 55.6 +02.0	S	16 02.6 -00.1	17 47.7 +02.2	S	18 26.9 +00.0	11			
12	285 30.8 +00.9	N	21 51.5 +00.3	23 57.6 +01.9	S	16 02.5 -00.2	32 49.9 +02.2	S	18 26.9 -00.1	12			
13	300 31.7 +00.9	N	21 51.8 +00.3	38 59.5 +01.9	S	16 02.3 -00.2	47 52.1 +02.2	S	18 26.8 -00.1	13			
14	315 32.6 +00.9	N	21 52.1 +00.3	54 01.4 +01.9	S	16 02.1 -00.1	62 54.3 +02.2	S	18 26.7 +00.0	14			
15	330 33.5 +01.0	N	21 52.4 +00.3	69 03.3 +01.9	S	16 02.0 -00.2	77 56.5 +02.2	S	18 26.7 -00.1	15			
16	345 34.5 +00.9	N	21 52.7 +00.3	84 05.2 +01.9	S	16 01.8 -00.2	92 58.7 +02.2	S	18 26.6 +00.0	16			
17	0 35.4 +00.9	N	21 53.0 +00.3	99 07.1 +01.9	S	16 01.6 -00.1	108 00.9 +02.2	S	18 26.6 -00.1	17			
18	15 36.3 +01.0	N	21 53.3 +00.3	114 09.0 +01.9	S	16 01.5 -00.2	123 03.1 +02.2	S	18 26.5 -00.1	18			
19	30 37.3 +00.9	N	21 53.6 +00.3	129 10.9 +01.9	S	16 01.3 -00.2	138 05.3 +02.2	S	18 26.4 +00.0	19			
20	45 38.2 +00.9	N	21 53.9 +00.3	144 12.8 +01.9	S	16 01.1 -00.1	153 07.5 +02.2	S	18 26.4 -00.1	20			
21	60 39.1 +01.0	N	21 54.2 +00.3	159 14.7 +01.9	S	16 01.0 -00.2	168 09.7 +02.2	S	18 26.3 -00.1	21			
22	75 40.1 +00.9	N	21 54.5 +00.3	174 16.6 +02.0	S	16 00.8 -00.2	183 11.9 +02.2	S	18 26.2 +00.0	22			
23	90 41.0 +00.9	N	21 54.8 +00.3	189 18.6 +01.9	S	16 00.6 -00.1	198 14.1 +02.2	S	18 26.2 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 301° 301° 301° 301° 301° 301°			SHA 040° 040° 040° 040° 039° 039°			SHA 048° 048° 048° 048° 048° 048°						
	Greenwich Culmination Time: 16:57			Greenwich Culmination Time: 10:24			Greenwich Culmination Time: 09:48						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 13.9 +00.2	S	05 16.6 -01.0	181 10.2 -00.5	S	08 26.5 -01.2	256 24.2 -35.3	S	24 35.6 +03.2				
01	192 14.1 +00.1	S	05 15.6 -01.0	196 09.7 -00.4	S	08 25.3 -01.2	270 48.9 -35.3	S	24 38.8 +03.0				
02	207 14.2 +00.2	S	05 14.6 -00.9	211 09.3 -00.5	S	08 24.1 -01.1	285 13.6 -35.2	S	24 41.8 +02.9				
03	222 14.4 +00.1	S	05 13.7 -01.0	226 08.8 -00.5	S	08 23.0 -01.2	299 38.4 -35.3	S	24 44.7 +02.8				
04	237 14.5 +00.2	S	05 12.7 -01.0	241 08.3 -00.4	S	08 21.8 -01.2	314 03.1 -35.3	S	24 47.5 +02.5				
05	252 14.7 +00.1	S	05 11.7 -00.9	256 07.9 -00.5	S	08 20.6 -01.2	328 27.8 -35.3	S	24 50.0 +02.5				
06	267 14.8 +00.2	S	05 10.8 -01.0	271 07.4 -00.4	S	08 19.4 -01.2	342 52.5 -35.3	S	24 52.5 +02.2				
07	282 15.0 +00.1	S	05 09.8 -01.0	286 07.0 -00.5	S	08 18.2 -01.1	357 17.2 -35.2	S	24 54.7 +02.1				
08	297 15.1 +00.2	S	05 08.8 -01.0	301 06.5 -00.4	S	08 17.1 -01.2	11 42.0 -35.3	S	24 56.8 +02.0				
09	312 15.3 +00.1	S	05 07.8 -00.9	316 06.1 -00.5	S	08 15.9 -01.2	26 06.7 -35.3	S	24 58.8 +01.7				
10	327 15.4 +00.2	S	05 06.9 -01.0	331 05.6 -00.4	S	08 14.7 -01.2	40 31.4 -35.2	S	25 00.5 +01.6				
11	342 15.6 +00.1	S	05 05.9 -01.0	346 05.2 -00.5	S	08 13.5 -01.2	54 56.2 -35.3	S	25 02.1 +01.5				
12	357 15.7 +00.2	S	05 04.9 -01.0	1 04.7 -00.5	S	08 12.3 -01.1	69 20.9 -35.2	S	25 03.6 +01.3				
13	12 15.9 +00.1	S	05 03.9 -00.9	16 04.2 -00.4	S	08 11.2 -01.2	83 45.7 -35.3	S	25 04.9 +01.1				
14	27 16.0 +00.2	S	05 03.0 -01.0	31 03.8 -00.5	S	08 10.0 -01.2	98 10.4 -35.2	S	25 06.0 +01.0				
15	42 16.2 +00.1	S	05 02.0 -01.0	46 03.3 -00.4	S	08 08.8 -01.2	112 35.2 -35.2	S	25 07.0 +00.8				
16	57 16.3 +00.2	S	05 01.0 -01.0	61 02.9 -00.5	S	08 07.6 -01.2	127 00.0 -35.1	S	25 07.8 +00.7				
17	72 16.5 +00.1	S	05 00.0 -00.9	76 02.4 -00.4	S	08 06.4 -01.1	141 24.9 -35.2	S	25 08.5 +00.5				
18	87 16.6 +00.2	S	04 59.1 -01.0	91 02.0 -00.5	S	08 05.3 -01.2	155 49.7 -35.1	S	25 09.0 +00.4				
19	102 16.8 +00.1	S	04 58.1 -01.0	106 01.5 -00.4	S	08 04.1 -01.2	170 14.6 -35.2	S	25 09.4 +00.1				
20	117 16.9 +00.2	S	04 57.1 -01.0	121 01.1 -00.5	S	08 02.9 -01.2	184 39.4 -35.0	S	25 09.5 +00.1				
21	132 17.1 +00.1	S	04 56.1 -00.9	136 00.6 -00.4	S	08 01.7 -01.2	199 04.4 -35.1	S	25 09.6 -00.2				
22	147 17.2 +00.2	S	04 55.2 -01.0	151 00.2 -00.5	S	08 00.5 -01.2	213 29.3 -35.1	S	25 09.4 -00.3				
23	162 17.4 +00.1	S	04 54.2 -01.0	165 59.7 -00.4	S	07 59.3 -01.1	227 54.2 -35.0	S	25 09.1 -00.4				
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'1 16'1 16'1 16'1 16'1 16'1			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'9 15'9 15'9 15'8 15'8 15'8						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 58'4 58'3 58'2 58'2 58'1 58'0						
	SHA 012° 012° 012° 012° 012° 011°			SHA 016° 016° 016° 016° 015° 015°			SHA 090° 088° 085° 083° 080° 078°						
	Greenwich Culmination Time: 12:10			Greenwich Culmination Time: 11:55			Greenwich Culmination Time: 07:11						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	105 41.9 +01.0	N	21 55.1 +00.3	204 20.5 +01.9	S	16 00.5 -00.2	213 16.3 +02.2	S	18 26.1 -00.1				
01	120 42.9 +00.9	N	21 55.4 +00.3	219 22.4 +01.9	S	16 00.3 -00.2	228 18.5 +02.2	S	18 26.0 +00.0				
02	135 43.8 +00.9	N	21 55.7 +00.3	234 24.3 +01.9	S	16 00.1 -00.1	243 20.7 +02.2	S	18 26.0 -00.1				
03	150 44.7 +00.9	N	21 56.0 +00.3	249 26.2 +01.9	S	15 60.0 -00.2	258 22.9 +02.2	S	18 25.9 +00.0				
04	165 45.6 +01.0	N	21 56.3 +00.3	264 28.1 +01.9	S	15 59.8 -00.2	273 25.1 +02.2	S	18 25.9 -00.1				
05	180 46.6 +00.9	N	21 56.6 +00.3	279 30.0 +01.9	S	15 59.6 -00.1	288 27.3 +02.2	S	18 25.8 -00.1				
06	195 47.5 +00.9	N	21 56.9 +00.3	294 31.9 +01.9	S	15 59.5 -00.2	303 29.5 +02.2	S	18 25.7 +00.0				
07	210 48.4 +01.0	N	21 57.2 +00.3	309 33.8 +02.0	S	15 59.3 -00.2	318 31.7 +02.2	S	18 25.7 -00.1				
08	225 49.4 +00.9	N	21 57.5 +00.3	324 35.8 +01.9	S	15 59.1 -00.1	333 33.9 +02.2	S	18 25.6 -00.1				
09	240 50.3 +00.9	N	21 57.8 +00.3	339 37.7 +01.9	S	15 59.0 -00.2	348 36.1 +02.2	S	18 25.5 +00.0				
10	255 51.2 +00.9	N	21 58.1 +00.3	354 39.6 +01.9	S	15 58.8 -00.2	3 38.3 +02.2	S	18 25.5 -00.1				
11	270 52.1 +01.0	N	21 58.4 +00.3	9 41.5 +01.9	S	15 58.6 -00.1	18 40.5 +02.2	S	18 25.4 -00.1				
12	285 53.1 +00.9	N	21 58.7 +00.3	24 43.4 +01.9	S	15 58.5 -00.2	33 42.7 +02.2	S	18 25.3 +00.0				
13	300 54.0 +00.9	N	21 59.0 +00.3	39 45.3 +01.9	S	15 58.3 -00.2	48 44.9 +02.2	S	18 25.3 -00.1				
14	315 54.9 +00.9	N	21 59.3 +00.3	54 47.2 +01.9	S	15 58.1 -00.1	63 47.1 +02.2	S	18 25.2 +00.0				
15	330 55.8 +01.0	N	21 59.6 +00.3	69 49.1 +01.9	S	15 58.0 -00.2	78 49.3 +02.2	S	18 25.2 -00.1				
16	345 56.8 +00.9	N	21 59.9 +00.3	84 51.0 +02.0	S	15 57.8 -00.2	93 51.5 +02.2	S	18 25.1 -00.1				
17	0 57.7 +00.9	N	22 00.2 +00.3	99 53.0 +01.9	S	15 57.6 -00.1	108 53.7 +02.2	S	18 25.0 +00.0				
18	15 58.6 +00.9	N	22 00.5 +00.3	114 54.9 +01.9	S	15 57.5 -00.2	123 55.9 +02.2	S	18 25.0 -00.1				
19	30 59.5 +01.0	N	22 00.8 +00.3	129 56.8 +01.9	S	15 57.3 -00.2	138 58.1 +02.2	S	18 24.9 -00.1				
20	46 00.5 +00.9	N	22 01.1 +00.3	144 58.7 +01.9	S	15 57.1 -00.1	154 00.3 +02.2	S	18 24.8 +00.0				
21	61 01.4 +00.9	N	22 01.4 +00.3	160 00.6 +01.9	S	15 57.0 -00.2	169 02.5 +02.2	S	18 24.8 -00.1				
22	76 02.3 +00.9	N	22 01.7 +00.3	175 02.5 +01.9	S	15 56.8 -00.2	184 04.7 +02.2	S	18 24.7 -00.1				
23	91 03.2 +01.0	N	22 02.0 +00.3	190 04.4 +01.9	S	15 56.6 -00.1	199 06.9 +02.2	S	18 24.6 +00.0				
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 301° 301° 301° 300° 300° 300°			SHA 039° 039° 039° 039° 039° 039°			SHA 048° 048° 048° 048° 048° 048°						
	Greenwich Culmination Time: 16:56			Greenwich Culmination Time: 10:21			Greenwich Culmination Time: 09:45						

UT	Sun				Venus				Moon				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	177	17.5	+00.2	S 04 53.2	-01.0	180	59.3	-00.5	S 07 58.2	-01.2	242	19.2	-34.9	S 25 08.7	-00.6	00
01	192	17.7	+00.2	S 04 52.2	-00.9	195	58.8	-00.4	S 07 57.0	-01.2	256	44.3	-35.0	S 25 08.1	-00.8	01
02	207	17.9	+00.1	S 04 51.3	-01.0	210	58.4	-00.5	S 07 55.8	-01.2	271	09.3	-34.9	S 25 07.3	-00.9	02
03	222	18.0	+00.2	S 04 50.3	-01.0	225	57.9	-00.4	S 07 54.6	-01.2	285	34.4	-34.9	S 25 06.4	-01.1	03
04	237	18.2	+00.1	S 04 49.3	-01.0	240	57.5	-00.5	S 07 53.4	-01.2	299	59.5	-34.8	S 25 05.3	-01.2	04
05	252	18.3	+00.2	S 04 48.3	-00.9	255	57.0	-00.4	S 07 52.2	-01.2	314	24.7	-34.9	S 25 04.1	-01.4	05
06	267	18.5	+00.1	S 04 47.4	-01.0	270	56.6	-00.5	S 07 51.0	-01.1	328	49.8	-34.7	S 25 02.7	-01.5	06
07	282	18.6	+00.2	S 04 46.4	-01.0	285	56.1	-00.4	S 07 49.9	-01.2	343	15.1	-34.8	S 25 01.2	-01.7	07
08	297	18.8	+00.1	S 04 45.4	-01.0	300	55.7	-00.5	S 07 48.7	-01.2	357	40.3	-34.6	S 24 59.5	-01.8	08
09	312	18.9	+00.2	S 04 44.4	-00.9	315	55.2	-00.4	S 07 47.5	-01.2	12	05.7	-34.7	S 24 57.7	-02.0	09
10	327	19.1	+00.1	S 04 43.5	-01.0	330	54.8	-00.5	S 07 46.3	-01.2	26	31.0	-34.6	S 24 55.7	-02.2	10
11	342	19.2	+00.2	S 04 42.5	-01.0	345	54.3	-00.4	S 07 45.1	-01.2	40	56.4	-34.5	S 24 53.5	-02.3	11
12	357	19.4	+00.1	S 04 41.5	-01.0	0	53.9	-00.4	S 07 43.9	-01.2	55	21.9	-34.5	S 24 51.2	-02.4	12
13	12	19.5	+00.2	S 04 40.5	-00.9	15	53.5	-00.5	S 07 42.7	-01.2	69	47.4	-34.5	S 24 48.8	-02.6	13
14	27	19.7	+00.2	S 04 39.6	-01.0	30	53.0	-00.4	S 07 41.5	-01.2	84	12.9	-34.4	S 24 46.2	-02.8	14
15	42	19.9	+00.1	S 04 38.6	-01.0	45	52.6	-00.5	S 07 40.3	-01.1	98	38.5	-34.3	S 24 43.4	-02.8	15
16	57	20.0	+00.2	S 04 37.6	-01.0	60	52.1	-00.4	S 07 39.2	-01.2	113	04.2	-34.3	S 24 40.6	-03.1	16
17	72	20.2	+00.1	S 04 36.6	-01.0	75	51.7	-00.5	S 07 38.0	-01.2	127	29.9	-34.3	S 24 37.5	-03.2	17
18	87	20.3	+00.2	S 04 35.6	-00.9	90	51.2	-00.4	S 07 36.8	-01.2	141	55.6	-34.2	S 24 34.3	-03.3	18
19	102	20.5	+00.1	S 04 34.7	-01.0	105	50.8	-00.5	S 07 35.6	-01.2	156	21.4	-34.1	S 24 31.0	-03.5	19
20	117	20.6	+00.2	S 04 33.7	-01.0	120	50.3	-00.4	S 07 34.4	-01.2	170	47.3	-34.1	S 24 27.5	-03.6	20
21	132	20.8	+00.1	S 04 32.7	-01.0	135	49.9	-00.4	S 07 33.2	-01.2	185	13.2	-34.0	S 24 23.9	-03.8	21
22	147	20.9	+00.2	S 04 31.7	-00.9	150	49.5	-00.5	S 07 32.0	-01.2	199	39.2	-33.9	S 24 20.1	-03.9	22
23	162	21.1	+00.1	S 04 30.8	-01.0	165	49.0	-00.4	S 07 30.8	-01.2	214	05.3	-33.9	S 24 16.2	-04.1	23
	UT 02 06 10 14 18 22					UT 02 06 10 14 18 22					UT 02 06 10 14 18 22					
	SD 16'1 16'1 16'1 16'1 16'1 16'1					SD 00'1 00'1 00'1 00'1 00'1 00'1					SD 15'8 15'8 15'7 15'7 15'7 15'7					
	HP 00'1 00'1 00'1 00'1 00'1 00'1					HP 00'1 00'1 00'1 00'1 00'1 00'1					HP 57'9 57'8 57'7 57'7 57'6 57'5					
	SHA 011° 011° 011° 011° 011° 011°					SHA 015° 015° 015° 014° 014° 014°					SHA 075° 073° 070° 068° 065° 063°					
	Greenwich Culmination Time: 12:10					Greenwich Culmination Time: 11:56					Greenwich Culmination Time: 08:09					

UT	Mars				Jupiter				Saturn				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	106	04.2	+00.9	N 22 02.3	+00.3	205	06.3	+01.9	S 15 56.5	-00.2	214	09.1	+02.2	S 18 24.6	-00.1	00
01	121	05.1	+00.9	N 22 02.6	+00.3	220	08.2	+02.0	S 15 56.3	-00.2	229	11.3	+02.3	S 18 24.5	+00.0	01
02	136	06.0	+00.9	N 22 02.9	+00.3	235	10.2	+01.9	S 15 56.1	-00.1	244	13.6	+02.2	S 18 24.5	-00.1	02
03	151	06.9	+01.0	N 22 03.2	+00.3	250	12.1	+01.9	S 15 56.0	-00.2	259	15.8	+02.2	S 18 24.4	-00.1	03
04	166	07.9	+00.9	N 22 03.5	+00.3	265	14.0	+01.9	S 15 55.8	-00.2	274	18.0	+02.2	S 18 24.3	+00.0	04
05	181	08.8	+00.9	N 22 03.8	+00.2	280	15.9	+01.9	S 15 55.6	-00.1	289	20.2	+02.2	S 18 24.3	-00.1	05
06	196	09.7	+00.9	N 22 04.0	+00.3	295	17.8	+01.9	S 15 55.5	-00.2	304	22.4	+02.2	S 18 24.2	-00.1	06
07	211	10.6	+01.0	N 22 04.3	+00.3	310	19.7	+01.9	S 15 55.3	-00.2	319	24.6	+02.2	S 18 24.1	+00.0	07
08	226	11.6	+00.9	N 22 04.6	+00.3	325	21.6	+02.0	S 15 55.1	-00.1	334	26.8	+02.2	S 18 24.1	-00.1	08
09	241	12.5	+00.9	N 22 04.9	+00.3	340	23.6	+01.9	S 15 55.0	-00.2	349	29.0	+02.2	S 18 24.0	-00.1	09
10	256	13.4	+00.9	N 22 05.2	+00.3	355	25.5	+01.9	S 15 54.8	-00.2	4	31.2	+02.2	S 18 23.9	+00.0	10
11	271	14.3	+00.9	N 22 05.5	+00.3	10	27.4	+01.9	S 15 54.6	-00.1	19	33.4	+02.2	S 18 23.9	-00.1	11
12	286	15.2	+01.0	N 22 05.8	+00.3	25	29.3	+01.9	S 15 54.5	-00.2	34	35.6	+02.2	S 18 23.8	+00.0	12
13	301	16.2	+00.9	N 22 06.1	+00.3	40	31.2	+01.9	S 15 54.3	-00.2	49	37.8	+02.2	S 18 23.8	-00.1	13
14	316	17.1	+00.9	N 22 06.4	+00.3	55	33.1	+01.9	S 15 54.1	-00.1	64	40.0	+02.2	S 18 23.7	-00.1	14
15	331	18.0	+00.9	N 22 06.7	+00.3	70	35.0	+01.9	S 15 54.0	-00.2	79	42.2	+02.2	S 18 23.6	+00.0	15
16	346	18.9	+01.0	N 22 07.0	+00.3	85	36.9	+02.0	S 15 53.8	-00.2	94	44.4	+02.2	S 18 23.6	-00.1	16
17	1	19.9	+00.9	N 22 07.3	+00.3	100	38.9	+01.9	S 15 53.6	-00.1	109	46.6	+02.2	S 18 23.5	-00.1	17
18	16	20.8	+00.9	N 22 07.6	+00.3	115	40.8	+01.9	S 15 53.5	-00.2	124	48.8	+02.2	S 18 23.4	+00.0	18
19	31	21.7	+00.9	N 22 07.9	+00.3	130	42.7	+01.9	S 15 53.3	-00.2	139	51.0	+02.2	S 18 23.4	-00.1	19
20	46	22.6	+00.9	N 22 08.2	+00.3	145	44.6	+01.9	S 15 53.1	-00.1	154	53.2	+02.3	S 18 23.3	+00.0	20
21	61	23.5	+01.0	N 22 08.5	+00.2	160	46.5	+01.9	S 15 53.0	-00.2	169	55.5	+02.2	S 18 23.3	-00.1	21
22	76	24.5	+00.9	N 22 08.7	+00.3	175	48.4	+01.9	S 15 52.8	-00.2	184	57.7	+02.2	S 18 23.2	-00.1	22
23	91	25.4	+00.9	N 22 09.0	+00.3	190	50.3	+02.0	S 15 52.6	-00.1	199	59.9	+02.2	S 18 23.1	+00.0	23
	UT 02 06 10 14 18 22					UT 02 06 10 14 18 22					UT 02 06 10 14 18 22					
	SD 00'1 00'1 00'1 00'1 00'1 00'1					SD 00'3 00'3 00'3 00'3 00'3 00'3					SD 00'1 00'1 00'1 00'1 00'1 00'1					
	HP 00'1 00'1 00'1 00'1 00'1 00'1					HP 00'0 00'0 00'0 00'0 00'0 00'0					HP 00'0 00'0 00'0 00'0 00'0 00'0					
	SHA 300° 300° 300° 300° 300° 300°					SHA 039° 039° 039° 039° 039° 039°					SHA 048° 048° 048° 048° 048° 048°					
	Greenwich Culmination Time: 16:54					Greenwich Culmination Time: 10:18					Greenwich Culmination Time: 09:41					

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 21.2 +00.2	S	04 29.8 -01.0	180 48.6 -00.5	S	07 29.6 -01.2	228 31.4 -33.9	S	24 12.1 -04.2	00			
01	192 21.4 +00.2	S	04 28.8 -01.0	195 48.1 -00.4	S	07 28.4 -01.2	242 57.5 -33.7	S	24 07.9 -04.3	01			
02	207 21.6 +00.1	S	04 27.8 -01.0	210 47.7 -00.5	S	07 27.2 -01.2	257 23.8 -33.7	S	24 03.6 -04.5	02			
03	222 21.7 +00.2	S	04 26.8 -00.9	225 47.2 -00.4	S	07 26.0 -01.2	271 50.1 -33.7	S	23 59.1 -04.6	03			
04	237 21.9 +00.1	S	04 25.9 -01.0	240 46.8 -00.4	S	07 24.8 -01.1	286 16.4 -33.5	S	23 54.5 -04.7	04			
05	252 22.0 +00.2	S	04 24.9 -01.0	255 46.4 -00.5	S	07 23.7 -01.2	300 42.9 -33.5	S	23 49.8 -04.9	05			
06	267 22.2 +00.1	S	04 23.9 -01.0	270 45.9 -00.4	S	07 22.5 -01.2	315 09.4 -33.5	S	23 44.9 -05.0	06			
07	282 22.3 +00.2	S	04 22.9 -00.9	285 45.5 -00.5	S	07 21.3 -01.2	329 35.9 -33.3	S	23 39.9 -05.2	07			
08	297 22.5 +00.2	S	04 22.0 -01.0	300 45.0 -00.4	S	07 20.1 -01.2	344 02.6 -33.3	S	23 34.7 -05.3	08			
09	312 22.7 +00.1	S	04 21.0 -01.0	315 44.6 -00.4	S	07 18.9 -01.2	358 29.3 -33.2	S	23 29.4 -05.4	09			
10	327 22.8 +00.2	S	04 20.0 -01.0	330 44.2 -00.5	S	07 17.7 -01.2	12 56.1 -33.2	S	23 24.0 -05.6	10			
11	342 23.0 +00.1	S	04 19.0 -01.0	345 43.7 -00.4	S	07 16.5 -01.2	27 22.9 -33.0	S	23 18.4 -05.6	11			
12	357 23.1 +00.2	S	04 18.0 -00.9	0 43.3 -00.5	S	07 15.3 -01.2	41 49.9 -33.0	S	23 12.8 -05.9	12			
13	12 23.3 +00.1	S	04 17.1 -01.0	15 42.8 -00.4	S	07 14.1 -01.2	56 16.9 -33.0	S	23 06.9 -05.9	13			
14	27 23.4 +00.2	S	04 16.1 -01.0	30 42.4 -00.4	S	07 12.9 -01.2	70 43.9 -32.8	S	23 01.0 -06.1	14			
15	42 23.6 +00.2	S	04 15.1 -01.0	45 42.0 -00.5	S	07 11.7 -01.2	85 11.1 -32.8	S	22 54.9 -06.2	15			
16	57 23.8 +00.1	S	04 14.1 -01.0	60 41.5 -00.4	S	07 10.5 -01.2	99 38.3 -32.7	S	22 48.7 -06.3	16			
17	72 23.9 +00.2	S	04 13.1 -00.9	75 41.1 -00.4	S	07 09.3 -01.2	114 05.6 -32.6	S	22 42.4 -06.4	17			
18	87 24.1 +00.1	S	04 12.2 -01.0	90 40.7 -00.5	S	07 08.1 -01.2	128 33.0 -32.5	S	22 36.0 -06.6	18			
19	102 24.2 +00.2	S	04 11.2 -01.0	105 40.2 -00.4	S	07 06.9 -01.2	143 00.5 -32.5	S	22 29.4 -06.7	19			
20	117 24.4 +00.2	S	04 10.2 -01.0	120 39.8 -00.5	S	07 05.7 -01.2	157 28.0 -32.4	S	22 22.7 -06.8	20			
21	132 24.6 +00.1	S	04 09.2 -01.0	135 39.3 -00.4	S	07 04.5 -01.2	171 55.6 -32.3	S	22 15.9 -06.9	21			
22	147 24.7 +00.2	S	04 08.2 -00.9	150 38.9 -00.4	S	07 03.3 -01.2	186 23.3 -32.2	S	22 09.0 -07.1	22			
23	162 24.9 +00.1	S	04 07.3 -01.0	165 38.5 -00.5	S	07 02.1 -01.2	200 51.1 -32.2	S	22 01.9 -07.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'1 16'1 16'1 16'1 16'1 16'1			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'6 15'6 15'6 15'6 15'6 15'6						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 57'4 57'3 57'2 57'2 57'1 57'0						
	SHA 010° 010° 010° 010° 010° 010°			SHA 014° 014° 013° 013° 013° 013°			SHA 060° 058° 056° 053° 051° 049°						
	Greenwich Culmination Time: 12:10			Greenwich Culmination Time: 11:57			Greenwich Culmination Time: 09:06						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	106 26.3 +00.9	N	22 09.3 +00.3	205 52.3 +01.9	S	15 52.5 -00.2	215 02.1 +02.2	S	18 23.1 -00.1	00			
01	121 27.2 +00.9	N	22 09.6 +00.3	220 54.2 +01.9	S	15 52.3 -00.1	230 04.3 +02.2	S	18 23.0 -00.1	01			
02	136 28.1 +01.0	N	22 09.9 +00.3	235 56.1 +01.9	S	15 52.2 -00.2	245 06.5 +02.2	S	18 22.9 +00.0	02			
03	151 29.1 +00.9	N	22 10.2 +00.3	250 58.0 +01.9	S	15 52.0 -00.2	260 08.7 +02.2	S	18 22.9 -00.1	03			
04	166 30.0 +00.9	N	22 10.5 +00.3	265 59.9 +01.9	S	15 51.8 -00.1	275 10.9 +02.2	S	18 22.8 -00.1	04			
05	181 30.9 +00.9	N	22 10.8 +00.3	281 01.8 +02.0	S	15 51.7 -00.2	290 13.1 +02.2	S	18 22.7 +00.0	05			
06	196 31.8 +00.9	N	22 11.1 +00.3	296 03.8 +01.9	S	15 51.5 -00.2	305 15.3 +02.2	S	18 22.7 -00.1	06			
07	211 32.7 +00.9	N	22 11.4 +00.3	311 05.7 +01.9	S	15 51.3 -00.1	320 17.5 +02.2	S	18 22.6 +00.0	07			
08	226 33.6 +01.0	N	22 11.7 +00.2	326 07.6 +01.9	S	15 51.2 -00.2	335 19.7 +02.2	S	18 22.6 -00.1	08			
09	241 34.6 +00.9	N	22 11.9 +00.3	341 09.5 +01.9	S	15 51.0 -00.2	350 21.9 +02.2	S	18 22.5 -00.1	09			
10	256 35.5 +00.9	N	22 12.2 +00.3	356 11.4 +01.9	S	15 50.8 -00.1	5 24.1 +02.2	S	18 22.4 +00.0	10			
11	271 36.4 +00.9	N	22 12.5 +00.3	11 13.3 +01.9	S	15 50.7 -00.2	20 26.3 +02.3	S	18 22.4 -00.1	11			
12	286 37.3 +00.9	N	22 12.8 +00.3	26 15.2 +02.0	S	15 50.5 -00.2	35 28.6 +02.2	S	18 22.3 -00.1	12			
13	301 38.2 +01.0	N	22 13.1 +00.3	41 17.2 +01.9	S	15 50.3 -00.1	50 30.8 +02.2	S	18 22.2 +00.0	13			
14	316 39.2 +00.9	N	22 13.4 +00.3	56 19.1 +01.9	S	15 50.2 -00.2	65 33.0 +02.2	S	18 22.2 -00.1	14			
15	331 40.1 +00.9	N	22 13.7 +00.3	71 21.0 +01.9	S	15 50.0 -00.2	80 35.2 +02.2	S	18 22.1 +00.0	15			
16	346 41.0 +00.9	N	22 14.0 +00.3	86 22.9 +01.9	S	15 49.8 -00.1	95 37.4 +02.2	S	18 22.1 -00.1	16			
17	1 41.9 +00.9	N	22 14.3 +00.2	101 24.8 +01.9	S	15 49.7 -00.2	110 39.6 +02.2	S	18 22.0 -00.1	17			
18	16 42.8 +00.9	N	22 14.5 +00.3	116 26.7 +02.0	S	15 49.5 -00.2	125 41.8 +02.2	S	18 21.9 +00.0	18			
19	31 43.7 +01.0	N	22 14.8 +00.3	131 28.7 +01.9	S	15 49.3 -00.1	140 44.0 +02.2	S	18 21.9 -00.1	19			
20	46 44.7 +00.9	N	22 15.1 +00.3	146 30.6 +01.9	S	15 49.2 -00.2	155 46.2 +02.2	S	18 21.8 -00.1	20			
21	61 45.6 +00.9	N	22 15.4 +00.3	161 32.5 +01.9	S	15 49.0 -00.2	170 48.4 +02.2	S	18 21.7 +00.0	21			
22	76 46.5 +00.9	N	22 15.7 +00.3	176 34.4 +01.9	S	15 48.8 -00.1	185 50.6 +02.2	S	18 21.7 -00.1	22			
23	91 47.4 +00.9	N	22 16.0 +00.3	191 36.3 +01.9	S	15 48.7 -00.2	200 52.8 +02.2	S	18 21.6 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 299° 299° 299° 299° 299° 299°			SHA 039° 039° 039° 039° 039° 039°			SHA 048° 048° 048° 048° 048° 048°						
	Greenwich Culmination Time: 16:53			Greenwich Culmination Time: 10:15			Greenwich Culmination Time: 09:38						

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	177 25.0 +00.2	S	04 06.3 -01.0	180 38.0 -00.4	S	07 00.9 -01.2	215 18.9 -32.0	S	21 54.8 -07.3	00										
01	192 25.2 +00.2	S	04 05.3 -01.0	195 37.6 -00.4	S	06 59.7 -01.2	229 46.9 -32.0	S	21 47.5 -07.4	01										
02	207 25.4 +00.1	S	04 04.3 -01.0	210 37.2 -00.5	S	06 58.5 -01.2	244 14.9 -31.9	S	21 40.1 -07.5	02										
03	222 25.5 +00.2	S	04 03.3 -00.9	225 36.7 -00.4	S	06 57.3 -01.2	258 43.0 -31.8	S	21 32.6 -07.7	03										
04	237 25.7 +00.1	S	04 02.4 -01.0	240 36.3 -00.4	S	06 56.1 -01.2	273 11.2 -31.7	S	21 24.9 -07.7	04										
05	252 25.8 +00.2	S	04 01.4 -01.0	255 35.9 -00.5	S	06 54.9 -01.2	287 39.5 -31.7	S	21 17.2 -07.8	05										
06	267 26.0 +00.2	S	04 00.4 -01.0	270 35.4 -00.4	S	06 53.7 -01.2	302 07.8 -31.6	S	21 09.4 -08.0	06										
07	282 26.2 +00.1	S	03 59.4 -01.0	285 35.0 -00.4	S	06 52.5 -01.2	316 36.2 -31.5	S	21 01.4 -08.0	07										
08	297 26.3 +00.2	S	03 58.4 -00.9	300 34.6 -00.5	S	06 51.3 -01.2	331 04.7 -31.4	S	20 53.4 -08.2	08										
09	312 26.5 +00.1	S	03 57.5 -01.0	315 34.1 -00.4	S	06 50.1 -01.2	345 33.3 -31.3	S	20 45.2 -08.3	09										
10	327 26.6 +00.2	S	03 56.5 -01.0	330 33.7 -00.4	S	06 48.9 -01.2	0 02.0 -31.2	S	20 36.9 -08.4	10										
11	342 26.8 +00.2	S	03 55.5 -01.0	345 33.3 -00.5	S	06 47.7 -01.2	14 30.8 -31.2	S	20 28.5 -08.4	11										
12	357 27.0 +00.1	S	03 54.5 -01.0	0 32.8 -00.4	S	06 46.5 -01.3	28 59.6 -31.0	S	20 20.1 -08.6	12										
13	12 27.1 +00.2	S	03 53.5 -00.9	15 32.4 -00.4	S	06 45.2 -01.2	43 28.6 -31.0	S	20 11.5 -08.7	13										
14	27 27.3 +00.1	S	03 52.6 -01.0	30 32.0 -00.5	S	06 44.0 -01.2	57 57.6 -30.9	S	20 02.8 -08.8	14										
15	42 27.4 +00.2	S	03 51.6 -01.0	45 31.5 -00.4	S	06 42.8 -01.2	72 26.7 -30.9	S	19 54.0 -08.9	15										
16	57 27.6 +00.2	S	03 50.6 -01.0	60 31.1 -00.4	S	06 41.6 -01.2	86 55.8 -30.7	S	19 45.1 -08.9	16										
17	72 27.8 +00.1	S	03 49.6 -01.0	75 30.7 -00.5	S	06 40.4 -01.2	101 25.1 -30.6	S	19 36.2 -09.1	17										
18	87 27.9 +00.2	S	03 48.6 -01.0	90 30.2 -00.4	S	06 39.2 -01.2	115 54.5 -30.6	S	19 27.1 -09.2	18										
19	102 28.1 +00.2	S	03 47.6 -00.9	105 29.8 -00.4	S	06 38.0 -01.2	130 23.9 -30.5	S	19 17.9 -09.2	19										
20	117 28.3 +00.1	S	03 46.7 -01.0	120 29.4 -00.5	S	06 36.8 -01.2	144 53.4 -30.4	S	19 08.7 -09.4	20										
21	132 28.4 +00.2	S	03 45.7 -01.0	135 28.9 -00.4	S	06 35.6 -01.2	159 23.0 -30.3	S	18 59.3 -09.4	21										
22	147 28.6 +00.1	S	03 44.7 -01.0	150 28.5 -00.4	S	06 34.4 -01.2	173 52.7 -30.3	S	18 49.9 -09.6	22										
23	162 28.7 +00.2	S	03 43.7 -01.0	165 28.1 -00.4	S	06 33.2 -01.2	188 22.4 -30.1	S	18 40.3 -09.6	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16'1	16'1	16'1	16'1	16'1	16'1	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD						
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP						
SHA	009°	009°	009°	009°	009°	009°	SHA	013°	012°	012°	012°	012°	012°	SHA						
Greenwich Culmination Time: 12:10							Greenwich Culmination Time: 11:57							Greenwich Culmination Time: 09:59						

UT	Mars				Jupiter				Saturn				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	106 48.3 +00.9	N	22 16.3 +00.2	206 38.2 +02.0	S	15 48.5 -00.2	215 55.0 +02.3	S	18 21.6 -00.1	00										
01	121 49.2 +00.9	N	22 16.5 +00.3	221 40.2 +01.9	S	15 48.3 -00.1	230 57.3 +02.2	S	18 21.5 -00.1	01										
02	136 50.1 +01.0	N	22 16.8 +00.3	236 42.1 +01.9	S	15 48.2 -00.2	245 59.5 +02.2	S	18 21.4 +00.0	02										
03	151 51.1 +00.9	N	22 17.1 +00.3	251 44.0 +01.9	S	15 48.0 -00.2	261 01.7 +02.2	S	18 21.4 -00.1	03										
04	166 52.0 +00.9	N	22 17.4 +00.3	266 45.9 +01.9	S	15 47.8 -00.1	276 03.9 +02.2	S	18 21.3 -00.1	04										
05	181 52.9 +00.9	N	22 17.7 +00.3	281 47.8 +02.0	S	15 47.7 -00.2	291 06.1 +02.2	S	18 21.2 +00.0	05										
06	196 53.8 +00.9	N	22 18.0 +00.3	296 49.8 +01.9	S	15 47.5 -00.2	306 08.3 +02.2	S	18 21.2 -00.1	06										
07	211 54.7 +00.9	N	22 18.3 +00.2	311 51.7 +01.9	S	15 47.3 -00.1	321 10.5 +02.2	S	18 21.1 +00.0	07										
08	226 55.6 +00.9	N	22 18.5 +00.3	326 53.6 +01.9	S	15 47.2 -00.2	336 12.7 +02.2	S	18 21.1 -00.1	08										
09	241 56.5 +01.0	N	22 18.8 +00.3	341 55.5 +01.9	S	15 47.0 -00.2	351 14.9 +02.2	S	18 21.0 -00.1	09										
10	256 57.5 +00.9	N	22 19.1 +00.3	356 57.4 +01.9	S	15 46.8 -00.1	6 17.1 +02.2	S	18 20.9 +00.0	10										
11	271 58.4 +00.9	N	22 19.4 +00.3	11 59.3 +02.0	S	15 46.7 -00.2	21 19.3 +02.3	S	18 20.9 -00.1	11										
12	286 59.3 +00.9	N	22 19.7 +00.3	27 01.3 +01.9	S	15 46.5 -00.2	36 21.6 +02.2	S	18 20.8 -00.1	12										
13	302 00.2 +00.9	N	22 20.0 +00.2	42 03.2 +01.9	S	15 46.3 -00.1	51 23.8 +02.2	S	18 20.7 +00.0	13										
14	317 01.1 +00.9	N	22 20.2 +00.3	57 05.1 +01.9	S	15 46.2 -00.2	66 26.0 +02.2	S	18 20.7 -00.1	14										
15	332 02.0 +00.9	N	22 20.5 +00.3	72 07.0 +01.9	S	15 46.0 -00.1	81 28.2 +02.2	S	18 20.6 +00.0	15										
16	347 02.9 +00.9	N	22 20.8 +00.3	87 08.9 +02.0	S	15 45.9 -00.2	96 30.4 +02.2	S	18 20.6 -00.1	16										
17	2 03.8 +00.9	N	22 21.1 +00.3	102 10.9 +01.9	S	15 45.7 -00.2	111 32.6 +02.2	S	18 20.5 -00.1	17										
18	17 04.7 +01.0	N	22 21.4 +00.3	117 12.8 +01.9	S	15 45.5 -00.1	126 34.8 +02.2	S	18 20.4 +00.0	18										
19	32 05.7 +00.9	N	22 21.7 +00.2	132 14.7 +01.9	S	15 45.4 -00.2	141 37.0 +02.2	S	18 20.4 -00.1	19										
20	47 06.6 +00.9	N	22 21.9 +00.3	147 16.6 +01.9	S	15 45.2 -00.2	156 39.2 +02.2	S	18 20.3 -00.1	20										
21	62 07.5 +00.9	N	22 22.2 +00.3	162 18.5 +02.0	S	15 45.0 -00.1	171 41.4 +02.3	S	18 20.2 +00.0	21										
22	77 08.4 +00.9	N	22 22.5 +00.3	177 20.5 +01.9	S	15 44.9 -00.2	186 43.7 +02.2	S	18 20.2 -00.1	22										
23	92 09.3 +00.9	N	22 22.8 +00.3	192 22.4 +01.9	S	15 44.7 -00.2	201 45.9 +02.2	S	18 20.1 +00.0	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	00'1	00'1	00'1	00'1	00'0	00'0	SD	00'3	00'3	00'3	00'3	00'3	00'3	SD						
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP						
SHA	299°	299°	299°	299°	298°	298°	SHA	039°	039°	039°	039°	039°	039°	SHA						
Greenwich Culmination Time: 16:51							Greenwich Culmination Time: 10:12							Greenwich Culmination Time: 09:34						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 28.9 +00.2	S	03 42.7 -00.9	180 27.7 -00.5	S	06 32.0 -01.2	202 52.3 -30.1	S	18 30.7 -09.7	00			
01	192 29.1 +00.1	S	03 41.8 -01.0	195 27.2 -00.4	S	06 30.8 -01.2	217 22.2 -30.0	S	18 21.0 -09.8	01			
02	207 29.2 +00.2	S	03 40.8 -01.0	210 26.8 -00.4	S	06 29.6 -01.3	231 52.2 -29.9	S	18 11.2 -09.9	02			
03	222 29.4 +00.2	S	03 39.8 -01.0	225 26.4 -00.5	S	06 28.3 -01.2	246 22.3 -29.8	S	18 01.3 -09.9	03			
04	237 29.6 +00.1	S	03 38.8 -01.0	240 25.9 -00.4	S	06 27.1 -01.2	260 52.5 -29.8	S	17 51.4 -10.1	04			
05	252 29.7 +00.2	S	03 37.8 -01.0	255 25.5 -00.4	S	06 25.9 -01.2	275 22.7 -29.6	S	17 41.3 -10.1	05			
06	267 29.9 +00.1	S	03 36.8 -00.9	270 25.1 -00.4	S	06 24.7 -01.2	289 53.1 -29.6	S	17 31.2 -10.2	06			
07	282 30.0 +00.2	S	03 35.9 -01.0	285 24.7 -00.5	S	06 23.5 -01.2	304 23.5 -29.5	S	17 21.0 -10.3	07			
08	297 30.2 +00.2	S	03 34.9 -01.0	300 24.2 -00.4	S	06 22.3 -01.2	318 54.0 -29.4	S	17 10.7 -10.3	08			
09	312 30.4 +00.1	S	03 33.9 -01.0	315 23.8 -00.4	S	06 21.1 -01.2	333 24.6 -29.4	S	17 00.4 -10.5	09			
10	327 30.5 +00.2	S	03 32.9 -01.0	330 23.4 -00.4	S	06 19.9 -01.2	347 55.2 -29.2	S	16 49.9 -10.5	10			
11	342 30.7 +00.2	S	03 31.9 -01.0	345 23.0 -00.5	S	06 18.7 -01.3	2 26.0 -29.2	S	16 39.4 -10.6	11			
12	357 30.9 +00.1	S	03 30.9 -00.9	0 22.5 -00.4	S	06 17.4 -01.2	16 56.8 -29.1	S	16 28.8 -10.6	12			
13	12 31.0 +00.2	S	03 30.0 -01.0	15 22.1 -00.4	S	06 16.2 -01.2	31 27.7 -29.0	S	16 18.2 -10.8	13			
14	27 31.2 +00.2	S	03 29.0 -01.0	30 21.7 -00.4	S	06 15.0 -01.2	45 58.7 -29.0	S	16 07.4 -10.8	14			
15	42 31.4 +00.1	S	03 28.0 -01.0	45 21.3 -00.5	S	06 13.8 -01.2	60 29.7 -28.8	S	15 56.6 -10.8	15			
16	57 31.5 +00.2	S	03 27.0 -01.0	60 20.8 -00.4	S	06 12.6 -01.2	75 00.9 -28.8	S	15 45.8 -11.0	16			
17	72 31.7 +00.2	S	03 26.0 -01.0	75 20.4 -00.4	S	06 11.4 -01.2	89 32.1 -28.8	S	15 34.8 -11.0	17			
18	87 31.9 +00.1	S	03 25.0 -00.9	90 20.0 -00.4	S	06 10.2 -01.3	104 03.3 -28.6	S	15 23.8 -11.0	18			
19	102 32.0 +00.2	S	03 24.1 -01.0	105 19.6 -00.5	S	06 08.9 -01.2	118 34.7 -28.6	S	15 12.8 -11.2	19			
20	117 32.2 +00.1	S	03 23.1 -01.0	120 19.1 -00.4	S	06 07.7 -01.2	133 06.1 -28.5	S	15 01.6 -11.1	20			
21	132 32.3 +00.2	S	03 22.1 -01.0	135 18.7 -00.4	S	06 06.5 -01.2	147 37.6 -28.4	S	14 50.5 -11.3	21			
22	147 32.5 +00.2	S	03 21.1 -01.0	150 18.3 -00.4	S	06 05.3 -01.2	162 09.2 -28.3	S	14 39.2 -11.3	22			
23	162 32.7 +00.1	S	03 20.1 -01.0	165 17.9 -00.5	S	06 04.1 -01.2	176 40.9 -28.3	S	14 27.9 -11.4	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'1 16'1 16'1 16'1 16'1 16'1			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'4 15'4 15'3 15'3 15'3 15'3						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 56'4 56'3 56'3 56'2 56'1 56'0						
	SHA 009° 008° 008° 008° 008° 008°			SHA 011° 011° 011° 011° 011° 011°			SHA 033° 031° 029° 027° 024° 022°						
	Greenwich Culmination Time: 12:09			Greenwich Culmination Time: 11:58			Greenwich Culmination Time: 10:49						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	107 10.2 +00.9	N	22 23.1 +00.2	207 24.3 +01.9	S	15 44.5 -00.1	216 48.1 +02.2	S	18 20.1 -00.1	00			
01	122 11.1 +00.9	N	22 23.3 +00.3	222 26.2 +01.9	S	15 44.4 -00.2	231 50.3 +02.2	S	18 20.0 -00.1	01			
02	137 12.0 +00.9	N	22 23.6 +00.3	237 28.1 +01.9	S	15 44.2 -00.2	246 52.5 +02.2	S	18 19.9 +00.0	02			
03	152 12.9 +01.0	N	22 23.9 +00.3	252 30.0 +02.0	S	15 44.0 -00.1	261 54.7 +02.2	S	18 19.9 -00.1	03			
04	167 13.9 +00.9	N	22 24.2 +00.3	267 32.0 +01.9	S	15 43.9 -00.2	276 56.9 +02.2	S	18 19.8 -00.1	04			
05	182 14.8 +00.9	N	22 24.5 +00.2	282 33.9 +01.9	S	15 43.7 -00.2	291 59.1 +02.2	S	18 19.7 +00.0	05			
06	197 15.7 +00.9	N	22 24.7 +00.3	297 35.8 +01.9	S	15 43.5 -00.1	307 01.3 +02.2	S	18 19.7 -00.1	06			
07	212 16.6 +00.9	N	22 25.0 +00.3	312 37.7 +02.0	S	15 43.4 -00.2	322 03.5 +02.3	S	18 19.6 +00.0	07			
08	227 17.5 +00.9	N	22 25.3 +00.3	327 39.7 +01.9	S	15 43.2 -00.2	337 05.8 +02.2	S	18 19.6 -00.1	08			
09	242 18.4 +00.9	N	22 25.6 +00.3	342 41.6 +01.9	S	15 43.0 -00.1	352 08.0 +02.2	S	18 19.5 -00.1	09			
10	257 19.3 +00.9	N	22 25.9 +00.2	357 43.5 +01.9	S	15 42.9 -00.2	7 10.2 +02.2	S	18 19.4 +00.0	10			
11	272 20.2 +00.9	N	22 26.1 +00.3	12 45.4 +01.9	S	15 42.7 -00.2	22 12.4 +02.2	S	18 19.4 -00.1	11			
12	287 21.1 +00.9	N	22 26.4 +00.3	27 47.3 +02.0	S	15 42.5 -00.1	37 14.6 +02.2	S	18 19.3 +00.0	12			
13	302 22.0 +00.9	N	22 26.7 +00.3	42 49.3 +01.9	S	15 42.4 -00.2	52 16.8 +02.2	S	18 19.3 -00.1	13			
14	317 22.9 +00.9	N	22 27.0 +00.2	57 51.2 +01.9	S	15 42.2 -00.2	67 19.0 +02.2	S	18 19.2 -00.1	14			
15	332 23.8 +00.9	N	22 27.2 +00.3	72 53.1 +01.9	S	15 42.0 -00.1	82 21.2 +02.3	S	18 19.1 +00.0	15			
16	347 24.7 +01.0	N	22 27.5 +00.3	87 55.0 +01.9	S	15 41.9 -00.2	97 23.5 +02.2	S	18 19.1 -00.1	16			
17	2 25.7 +00.9	N	22 27.8 +00.3	102 56.9 +02.0	S	15 41.7 -00.2	112 25.7 +02.2	S	18 19.0 -00.1	17			
18	17 26.6 +00.9	N	22 28.1 +00.3	117 58.9 +01.9	S	15 41.5 -00.1	127 27.9 +02.2	S	18 18.9 +00.0	18			
19	32 27.5 +00.9	N	22 28.4 +00.2	133 00.8 +01.9	S	15 41.4 -00.2	142 30.1 +02.2	S	18 18.9 -00.1	19			
20	47 28.4 +00.9	N	22 28.6 +00.3	148 02.7 +01.9	S	15 41.2 -00.1	157 32.3 +02.2	S	18 18.8 +00.0	20			
21	62 29.3 +00.9	N	22 28.9 +00.3	163 04.6 +02.0	S	15 41.1 -00.2	172 34.5 +02.2	S	18 18.8 -00.1	21			
22	77 30.2 +00.9	N	22 29.2 +00.3	178 06.6 +01.9	S	15 40.9 -00.2	187 36.7 +02.2	S	18 18.7 -00.1	22			
23	92 31.1 +00.9	N	22 29.5 +00.2	193 08.5 +01.9	S	15 40.7 -00.1	202 38.9 +02.3	S	18 18.6 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'0 00'0 00'0 00'0 00'0 00'0			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 298° 298° 298° 298° 298° 298°			SHA 039° 038° 038° 038° 038° 038°			SHA 048° 048° 048° 048° 048° 048°						
	Greenwich Culmination Time: 16:50			Greenwich Culmination Time: 10:09			Greenwich Culmination Time: 09:31						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	177 32.8 +00.2	S	03 19.1 -00.9	180 17.4 -00.4	S	06 02.9 -01.2	191 12.6 -28.2	S	14 16.5 -11.4	00										
01	192 33.0 +00.2	S	03 18.2 -01.0	195 17.0 -00.4	S	06 01.7 -01.3	205 44.4 -28.1	S	14 05.1 -11.5	01										
02	207 33.2 +00.1	S	03 17.2 -01.0	210 16.6 -00.4	S	06 00.4 -01.2	220 16.3 -28.1	S	13 53.6 -11.6	02										
03	222 33.3 +00.2	S	03 16.2 -01.0	225 16.2 -00.4	S	05 59.2 -01.2	234 48.2 -28.0	S	13 42.0 -11.6	03										
04	237 33.5 +00.2	S	03 15.2 -01.0	240 15.8 -00.5	S	05 58.0 -01.2	249 20.2 -27.9	S	13 30.4 -11.6	04										
05	252 33.7 +00.1	S	03 14.2 -01.0	255 15.3 -00.4	S	05 56.8 -01.2	263 52.3 -27.8	S	13 18.8 -11.7	05										
06	267 33.8 +00.2	S	03 13.2 -01.0	270 14.9 -00.4	S	05 55.6 -01.2	278 24.5 -27.8	S	13 07.1 -11.8	06										
07	282 34.0 +00.2	S	03 12.2 -00.9	285 14.5 -00.4	S	05 54.4 -01.3	292 56.7 -27.7	S	12 55.3 -11.8	07										
08	297 34.2 +00.1	S	03 11.3 -01.0	300 14.1 -00.4	S	05 53.1 -01.2	307 29.0 -27.7	S	12 43.5 -11.9	08										
09	312 34.3 +00.2	S	03 10.3 -01.0	315 13.7 -00.5	S	05 51.9 -01.2	322 01.3 -27.6	S	12 31.6 -11.9	09										
10	327 34.5 +00.2	S	03 09.3 -01.0	330 13.2 -00.4	S	05 50.7 -01.2	336 33.7 -27.5	S	12 19.7 -11.9	10										
11	342 34.7 +00.1	S	03 08.3 -01.0	345 12.8 -00.4	S	05 49.5 -01.2	351 06.2 -27.4	S	12 07.8 -12.0	11										
12	357 34.8 +00.2	S	03 07.3 -01.0	0 12.4 -00.4	S	05 48.3 -01.3	5 38.8 -27.4	S	11 55.8 -12.1	12										
13	12 35.0 +00.2	S	03 06.3 -00.9	15 12.0 -00.4	S	05 47.0 -01.2	20 11.4 -27.3	S	11 43.7 -12.1	13										
14	27 35.2 +00.1	S	03 05.4 -01.0	30 11.6 -00.5	S	05 45.8 -01.2	34 44.1 -27.3	S	11 31.6 -12.1	14										
15	42 35.3 +00.2	S	03 04.4 -01.0	45 11.1 -00.4	S	05 44.6 -01.2	49 16.8 -27.2	S	11 19.5 -12.2	15										
16	57 35.5 +00.2	S	03 03.4 -01.0	60 10.7 -00.4	S	05 43.4 -01.2	63 49.6 -27.1	S	11 07.3 -12.2	16										
17	72 35.7 +00.1	S	03 02.4 -01.0	75 10.3 -00.4	S	05 42.2 -01.3	78 22.5 -27.1	S	10 55.1 -12.3	17										
18	87 35.8 +00.2	S	03 01.4 -01.0	90 09.9 -00.4	S	05 40.9 -01.2	92 55.4 -27.0	S	10 42.8 -12.3	18										
19	102 36.0 +00.2	S	03 00.4 -01.0	105 09.5 -00.5	S	05 39.7 -01.2	107 28.4 -27.0	S	10 30.5 -12.3	19										
20	117 36.2 +00.2	S	02 59.4 -00.9	120 09.0 -00.4	S	05 38.5 -01.2	122 01.4 -26.9	S	10 18.2 -12.4	20										
21	132 36.4 +00.1	S	02 58.5 -01.0	135 08.6 -00.4	S	05 37.3 -01.2	136 34.5 -26.8	S	10 05.8 -12.4	21										
22	147 36.5 +00.2	S	02 57.5 -01.0	150 08.2 -00.4	S	05 36.1 -01.3	151 07.7 -26.8	S	09 53.4 -12.4	22										
23	162 36.7 +00.2	S	02 56.5 -01.0	165 07.8 -00.4	S	05 34.8 -01.2	165 40.9 -26.7	S	09 41.0 -12.5	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16'1	16'1	16'1	16'1	16'1	16'1	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD						
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP						
SHA	008°	007°	007°	007°	007°	007°	SHA	010°	010°	010°	010°	010°	009°	SHA						
Greenwich Culmination Time: 12:09							Greenwich Culmination Time: 11:59							Greenwich Culmination Time: 11:36						

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	107 32.0 +00.9	N	22 29.7 +00.3	208 10.4 +01.9	S	15 40.6 -00.2	217 41.2 +02.2	S	18 18.6 -00.1	00										
01	122 32.9 +00.9	N	22 30.0 +00.3	223 12.3 +01.9	S	15 40.4 -00.2	232 43.4 +02.2	S	18 18.5 +00.0	01										
02	137 33.8 +00.9	N	22 30.3 +00.3	238 14.2 +02.0	S	15 40.2 -00.1	247 45.6 +02.2	S	18 18.5 -00.1	02										
03	152 34.7 +00.9	N	22 30.6 +00.2	253 16.2 +01.9	S	15 40.1 -00.2	262 47.8 +02.2	S	18 18.4 -00.1	03										
04	167 35.6 +00.9	N	22 30.8 +00.3	268 18.1 +01.9	S	15 39.9 -00.2	277 50.0 +02.2	S	18 18.3 +00.0	04										
05	182 36.5 +00.9	N	22 31.1 +00.3	283 20.0 +01.9	S	15 39.7 -00.1	292 52.2 +02.2	S	18 18.3 -00.1	05										
06	197 37.4 +00.9	N	22 31.4 +00.3	298 21.9 +02.0	S	15 39.6 -00.2	307 54.4 +02.2	S	18 18.2 -00.1	06										
07	212 38.3 +00.9	N	22 31.7 +00.2	313 23.9 +01.9	S	15 39.4 -00.2	322 56.6 +02.3	S	18 18.1 +00.0	07										
08	227 39.2 +00.9	N	22 31.9 +00.3	328 25.8 +01.9	S	15 39.2 -00.1	337 58.9 +02.2	S	18 18.1 -00.1	08										
09	242 40.1 +00.9	N	22 32.2 +00.3	343 27.7 +01.9	S	15 39.1 -00.2	353 01.1 +02.2	S	18 18.0 +00.0	09										
10	257 41.0 +00.9	N	22 32.5 +00.2	358 29.6 +01.9	S	15 38.9 -00.2	8 03.3 +02.2	S	18 18.0 -00.1	10										
11	272 41.9 +01.0	N	22 32.7 +00.3	13 31.5 +02.0	S	15 38.7 -00.1	23 05.5 +02.2	S	18 17.9 -00.1	11										
12	287 42.9 +00.9	N	22 33.0 +00.3	28 33.5 +01.9	S	15 38.6 -00.2	38 07.7 +02.2	S	18 17.8 +00.0	12										
13	302 43.8 +00.9	N	22 33.3 +00.3	43 35.4 +01.9	S	15 38.4 -00.2	53 09.9 +02.2	S	18 17.8 -00.1	13										
14	317 44.7 +00.9	N	22 33.6 +00.2	58 37.3 +01.9	S	15 38.2 -00.1	68 12.1 +02.3	S	18 17.7 +00.0	14										
15	332 45.6 +00.9	N	22 33.8 +00.3	73 39.2 +02.0	S	15 38.1 -00.2	83 14.4 +02.2	S	18 17.7 -00.1	15										
16	347 46.5 +00.9	N	22 34.1 +00.3	88 41.2 +01.9	S	15 37.9 -00.2	98 16.6 +02.2	S	18 17.6 -00.1	16										
17	2 47.4 +00.9	N	22 34.4 +00.3	103 43.1 +01.9	S	15 37.7 -00.1	113 18.8 +02.2	S	18 17.5 +00.0	17										
18	17 48.3 +00.9	N	22 34.7 +00.2	118 45.0 +01.9	S	15 37.6 -00.2	128 21.0 +02.2	S	18 17.5 -00.1	18										
19	32 49.2 +00.9	N	22 34.9 +00.3	133 46.9 +02.0	S	15 37.4 -00.1	143 23.2 +02.2	S	18 17.4 -00.1	19										
20	47 50.1 +00.9	N	22 35.2 +00.3	148 48.9 +01.9	S	15 37.3 -00.2	158 25.4 +02.2	S	18 17.3 +00.0	20										
21	62 51.0 +00.9	N	22 35.5 +00.2	163 50.8 +01.9	S	15 37.1 -00.2	173 27.6 +02.3	S	18 17.3 -00.1	21										
22	77 51.9 +00.9	N	22 35.7 +00.3	178 52.7 +01.9	S	15 36.9 -00.1	188 29.9 +02.2	S	18 17.2 +00.0	22										
23	92 52.8 +00.9	N	22 36.0 +00.3	193 54.6 +02.0	S	15 36.8 -00.2	203 32.1 +02.2	S	18 17.2 -00.1	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	00'0	00'0	00'0	00'0	00'0	00'0	SD	00'3	00'3	00'3	00'3	00'3	00'3	SD						
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP						
SHA	298°	298°	297°	297°	297°	297°	SHA	038°	038°	038°	038°	038°	038°	SHA						
Greenwich Culmination Time: 16:48							Greenwich Culmination Time: 10:06							Greenwich Culmination Time: 09:27						

UT	Sun				Venus				Moon				UT				
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec					
00	177 36.9 +00.1	S	02 55.5 -01.0	180 07.4 -00.4	S	05 33.6 -01.2	180 14.2 -26.7	S	09 28.5 -12.5	00							
01	192 37.0 +00.2	S	02 54.5 -01.0	195 07.0 -00.5	S	05 32.4 -01.2	194 47.5 -26.6	S	09 16.0 -12.5	01							
02	207 37.2 +00.2	S	02 53.5 -01.0	210 06.5 -00.4	S	05 31.2 -01.3	209 20.9 -26.6	S	09 03.5 -12.6	02							
03	222 37.4 +00.1	S	02 52.5 -00.9	225 06.1 -00.4	S	05 29.9 -01.2	223 54.3 -26.5	S	08 50.9 -12.6	03							
04	237 37.5 +00.2	S	02 51.6 -01.0	240 05.7 -00.4	S	05 28.7 -01.2	238 27.8 -26.5	S	08 38.3 -12.6	04							
05	252 37.7 +00.2	S	02 50.6 -01.0	255 05.3 -00.4	S	05 27.5 -01.2	253 01.3 -26.4	S	08 25.7 -12.7	05							
06	267 37.9 +00.1	S	02 49.6 -01.0	270 04.9 -00.4	S	05 26.3 -01.2	267 34.9 -26.4	S	08 13.0 -12.7	06							
07	282 38.0 +00.2	S	02 48.6 -01.0	285 04.5 -00.4	S	05 25.1 -01.3	282 08.5 -26.3	S	08 00.3 -12.7	07							
08	297 38.2 +00.2	S	02 47.6 -01.0	300 04.1 -00.5	S	05 23.8 -01.2	296 42.2 -26.2	S	07 47.6 -12.7	08							
09	312 38.4 +00.2	S	02 46.6 -01.0	315 03.6 -00.4	S	05 22.6 -01.2	311 16.0 -26.3	S	07 34.9 -12.7	09							
10	327 38.6 +00.1	S	02 45.6 -00.9	330 03.2 -00.4	S	05 21.4 -01.2	325 49.7 -26.1	S	07 22.2 -12.8	10							
11	342 38.7 +00.2	S	02 44.7 -01.0	345 02.8 -00.4	S	05 20.2 -01.3	340 23.6 -26.2	S	07 09.4 -12.8	11							
12	357 38.9 +00.2	S	02 43.7 -01.0	0 02.4 -00.4	S	05 18.9 -01.2	354 57.4 -26.0	S	06 56.6 -12.8	12							
13	12 39.1 +00.1	S	02 42.7 -01.0	15 02.0 -00.4	S	05 17.7 -01.2	9 31.4 -26.1	S	06 43.8 -12.9	13							
14	27 39.2 +00.2	S	02 41.7 -01.0	30 01.6 -00.4	S	05 16.5 -01.2	24 05.3 -26.0	S	06 30.9 -12.8	14							
15	42 39.4 +00.2	S	02 40.7 -01.0	45 01.2 -00.5	S	05 15.3 -01.3	38 39.3 -25.9	S	06 18.1 -12.9	15							
16	57 39.6 +00.1	S	02 39.7 -01.0	60 00.7 -00.4	S	05 14.0 -01.2	53 13.4 -25.9	S	06 05.2 -12.9	16							
17	72 39.7 +00.2	S	02 38.7 -00.9	75 00.3 -00.4	S	05 12.8 -01.2	67 47.5 -25.9	S	05 52.3 -12.9	17							
18	87 39.9 +00.2	S	02 37.8 -01.0	89 59.9 -00.4	S	05 11.6 -01.3	82 21.6 -25.9	S	05 39.4 -12.9	18							
19	102 40.1 +00.2	S	02 36.8 -01.0	104 59.5 -00.4	S	05 10.3 -01.2	96 55.7 -25.7	S	05 26.5 -12.9	19							
20	117 40.3 +00.1	S	02 35.8 -01.0	119 59.1 -00.4	S	05 09.1 -01.2	111 30.0 -25.8	S	05 13.6 -13.0	20							
21	132 40.4 +00.2	S	02 34.8 -01.0	134 58.7 -00.4	S	05 07.9 -01.2	126 04.2 -25.7	S	05 00.6 -12.9	21							
22	147 40.6 +00.2	S	02 33.8 -01.0	149 58.3 -00.4	S	05 06.7 -01.3	140 38.5 -25.7	S	04 47.7 -13.0	22							
23	162 40.8 +00.1	S	02 32.8 -01.0	164 57.9 -00.5	S	05 05.4 -01.2	155 12.8 -25.7	S	04 34.7 -13.0	23							
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT			
SD	16'1	16'1	16'1	16'1	16'1	16'1	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD			
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP			
SHA	007°	007°	006°	006°	006°	006°	SHA	009°	009°	009°	009°	008°	008°	SHA			
Greenwich Culmination Time: 12:09						Greenwich Culmination Time: 11:59						Greenwich Culmination Time: 12:20					

UT	Mars				Jupiter				Saturn				UT				
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec					
00	107 53.7 +00.9	N	22 36.3 +00.2	208 56.6 +01.9	S	15 36.6 -00.2	218 34.3 +02.2	S	18 17.1 -00.1	00							
01	122 54.6 +00.9	N	22 36.5 +00.3	223 58.5 +01.9	S	15 36.4 -00.1	233 36.5 +02.2	S	18 17.0 +00.0	01							
02	137 55.5 +00.9	N	22 36.8 +00.3	239 00.4 +01.9	S	15 36.3 -00.2	248 38.7 +02.2	S	18 17.0 -00.1	02							
03	152 56.4 +00.9	N	22 37.1 +00.2	254 02.3 +02.0	S	15 36.1 -00.2	263 40.9 +02.3	S	18 16.9 +00.0	03							
04	167 57.3 +00.9	N	22 37.3 +00.3	269 04.3 +01.9	S	15 35.9 -00.1	278 43.2 +02.2	S	18 16.9 -00.1	04							
05	182 58.2 +00.9	N	22 37.6 +00.3	284 06.2 +01.9	S	15 35.8 -00.2	293 45.4 +02.2	S	18 16.8 -00.1	05							
06	197 59.1 +00.9	N	22 37.9 +00.3	299 08.1 +01.9	S	15 35.6 -00.2	308 47.6 +02.2	S	18 16.7 +00.0	06							
07	212 60.0 +00.9	N	22 38.2 +00.2	314 10.0 +02.0	S	15 35.4 -00.1	323 49.8 +02.2	S	18 16.7 -00.1	07							
08	228 00.9 +00.9	N	22 38.4 +00.3	329 12.0 +01.9	S	15 35.3 -00.2	338 52.0 +02.2	S	18 16.6 +00.0	08							
09	243 01.8 +00.9	N	22 38.7 +00.3	344 13.9 +01.9	S	15 35.1 -00.2	353 54.2 +02.2	S	18 16.6 -00.1	09							
10	258 02.7 +00.9	N	22 39.0 +00.2	359 15.8 +01.9	S	15 34.9 -00.1	8 56.4 +02.3	S	18 16.5 -00.1	10							
11	273 03.6 +00.9	N	22 39.2 +00.3	14 17.7 +02.0	S	15 34.8 -00.2	23 58.7 +02.2	S	18 16.4 +00.0	11							
12	288 04.5 +00.9	N	22 39.5 +00.3	29 19.7 +01.9	S	15 34.6 -00.2	39 00.9 +02.2	S	18 16.4 -00.1	12							
13	303 05.4 +00.9	N	22 39.8 +00.2	44 21.6 +01.9	S	15 34.4 -00.1	54 03.1 +02.2	S	18 16.3 -00.1	13							
14	318 06.3 +00.9	N	22 40.0 +00.3	59 23.5 +01.9	S	15 34.3 -00.2	69 05.3 +02.2	S	18 16.2 +00.0	14							
15	333 07.2 +00.9	N	22 40.3 +00.3	74 25.4 +02.0	S	15 34.1 -00.1	84 07.5 +02.2	S	18 16.2 -00.1	15							
16	348 08.1 +00.9	N	22 40.6 +00.2	89 27.4 +01.9	S	15 34.0 -00.2	99 09.7 +02.3	S	18 16.1 +00.0	16							
17	3 09.0 +00.9	N	22 40.8 +00.3	104 29.3 +01.9	S	15 33.8 -00.2	114 12.0 +02.2	S	18 16.1 -00.1	17							
18	18 09.9 +00.9	N	22 41.1 +00.3	119 31.2 +02.0	S	15 33.6 -00.1	129 14.2 +02.2	S	18 16.0 -00.1	18							
19	33 10.8 +00.9	N	22 41.4 +00.2	134 33.2 +01.9	S	15 33.5 -00.2	144 16.4 +02.2	S	18 15.9 +00.0	19							
20	48 11.7 +00.9	N	22 41.6 +00.3	149 35.1 +01.9	S	15 33.3 -00.2	159 18.6 +02.2	S	18 15.9 -00.1	20							
21	63 12.6 +00.8	N	22 41.9 +00.2	164 37.0 +01.9	S	15 33.1 -00.1	174 20.8 +02.2	S	18 15.8 +00.0	21							
22	78 13.4 +00.9	N	22 42.1 +00.3	179 38.9 +02.0	S	15 33.0 -00.2	189 23.0 +02.3	S	18 15.8 -00.1	22							
23	93 14.3 +00.9	N	22 42.4 +00.3	194 40.9 +01.9	S	15 32.8 -00.2	204 25.3 +02.2	S	18 15.7 -00.1	23							
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT			
SD	00'0	00'0	00'0	00'0	00'0	00'0	SD	00'3	00'3	00'3	00'3	00'3	00'3	SD			
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP			
SHA	297°	297°	297°	297°	297°	296°	SHA	038°	038°	038°	038°	038°	038°	SHA			
Greenwich Culmination Time: 16:47						Greenwich Culmination Time: 10:02						Greenwich Culmination Time: 09:24					

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 40.9 +00.2	S	02 31.8 -01.0	179 57.4 -00.4	S	05 04.2 -01.2	169 47.1 -25.6	S	04 21.7 -13.0	00			
01	192 41.1 +00.2	S	02 30.8 -00.9	194 57.0 -00.4	S	05 03.0 -01.3	184 21.5 -25.5	S	04 08.7 -13.0	01			
02	207 41.3 +00.2	S	02 29.9 -01.0	209 56.6 -00.4	S	05 01.7 -01.2	198 56.0 -25.6	S	03 55.7 -13.0	02			
03	222 41.5 +00.1	S	02 28.9 -01.0	224 56.2 -00.4	S	05 00.5 -01.2	213 30.4 -25.5	S	03 42.7 -13.0	03			
04	237 41.6 +00.2	S	02 27.9 -01.0	239 55.8 -00.4	S	04 59.3 -01.2	228 04.9 -25.5	S	03 29.7 -13.0	04			
05	252 41.8 +00.2	S	02 26.9 -01.0	254 55.4 -00.4	S	04 58.1 -01.3	242 39.4 -25.5	S	03 16.7 -13.1	05			
06	267 42.0 +00.1	S	02 25.9 -01.0	269 55.0 -00.4	S	04 56.8 -01.2	257 13.9 -25.4	S	03 03.6 -13.0	06			
07	282 42.1 +00.2	S	02 24.9 -01.0	284 54.6 -00.4	S	04 55.6 -01.2	271 48.5 -25.4	S	02 50.6 -13.0	07			
08	297 42.3 +00.2	S	02 23.9 -00.9	299 54.2 -00.4	S	04 54.4 -01.3	286 23.1 -25.4	S	02 37.6 -13.1	08			
09	312 42.5 +00.2	S	02 23.0 -01.0	314 53.8 -00.5	S	04 53.1 -01.2	300 57.7 -25.3	S	02 24.5 -13.0	09			
10	327 42.7 +00.1	S	02 22.0 -01.0	329 53.3 -00.4	S	04 51.9 -01.2	315 32.4 -25.3	S	02 11.5 -13.0	10			
11	342 42.8 +00.2	S	02 21.0 -01.0	344 52.9 -00.4	S	04 50.7 -01.2	330 07.1 -25.3	S	01 58.5 -13.1	11			
12	357 43.0 +00.2	S	02 20.0 -01.0	359 52.5 -00.4	S	04 49.5 -01.3	344 41.8 -25.3	S	01 45.4 -13.0	12			
13	12 43.2 +00.2	S	02 19.0 -01.0	14 52.1 -00.4	S	04 48.2 -01.2	359 16.5 -25.2	S	01 32.4 -13.0	13			
14	27 43.4 +00.1	S	02 18.0 -01.0	29 51.7 -00.4	S	04 47.0 -01.2	13 51.3 -25.3	S	01 19.4 -13.1	14			
15	42 43.5 +00.2	S	02 17.0 -01.0	44 51.3 -00.4	S	04 45.8 -01.3	28 26.0 -25.2	S	01 06.3 -13.0	15			
16	57 43.7 +00.2	S	02 16.0 -00.9	59 50.9 -00.4	S	04 44.5 -01.2	43 00.8 -25.1	S	00 53.3 -13.0	16			
17	72 43.9 +00.1	S	02 15.1 -01.0	74 50.5 -00.4	S	04 43.3 -01.2	57 35.7 -25.2	S	00 40.3 -13.1	17			
18	87 44.0 +00.2	S	02 14.1 -01.0	89 50.1 -00.4	S	04 42.1 -01.3	72 10.5 -25.2	S	00 27.2 -13.0	18			
19	102 44.2 +00.2	S	02 13.1 -01.0	104 49.7 -00.4	S	04 40.8 -01.2	86 45.3 -25.1	S	00 14.2 -13.0	19			
20	117 44.4 +00.2	S	02 12.1 -01.0	119 49.3 -00.4	S	04 39.6 -01.2	101 20.2 -25.1	S	00 01.2 -13.0	20			
21	132 44.6 +00.1	S	02 11.1 -01.0	134 48.9 -00.4	S	04 38.4 -01.3	115 55.1 -25.1	N	00 11.8 +13.0	21			
22	147 44.7 +00.2	S	02 10.1 -01.0	149 48.5 -00.5	S	04 37.1 -01.2	130 30.0 -25.1	N	00 24.8 +13.0	22			
23	162 44.9 +00.2	S	02 09.1 -01.0	164 48.0 -00.4	S	04 35.9 -01.2	145 04.9 -25.0	N	00 37.8 +12.9	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'1 16'1 16'1 16'1 16'1 16'1			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'0 15'0 15'0 14'9 14'9 14'9						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 55'1 55'0 54'9 54'9 54'8 54'7						
	SHA 006° 006° 005° 005° 005° 005°			SHA 008° 008° 008° 007° 007° 007°			SHA 357° 355° 353° 351° 350° 348°						
	Greenwich Culmination Time: 12:09			Greenwich Culmination Time: 12:00			Greenwich Culmination Time: 13:02						
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	108 15.2 +00.9	N	22 42.7 +00.2	209 42.8 +01.9	S	15 32.6 -00.1	219 27.5 +02.2	S	18 15.6 +00.0	00			
01	123 16.1 +00.9	N	22 42.9 +00.3	224 44.7 +01.9	S	15 32.5 -00.2	234 29.7 +02.2	S	18 15.6 -00.1	01			
02	138 17.0 +00.9	N	22 43.2 +00.3	239 46.6 +02.0	S	15 32.3 -00.2	249 31.9 +02.2	S	18 15.5 +00.0	02			
03	153 17.9 +00.9	N	22 43.5 +00.2	254 48.6 +01.9	S	15 32.1 -00.1	264 34.1 +02.3	S	18 15.5 -00.1	03			
04	168 18.8 +00.9	N	22 43.7 +00.3	269 50.5 +01.9	S	15 32.0 -00.2	279 36.4 +02.2	S	18 15.4 -00.1	04			
05	183 19.7 +00.9	N	22 44.0 +00.3	284 52.4 +02.0	S	15 31.8 -00.2	294 38.6 +02.2	S	18 15.3 +00.0	05			
06	198 20.6 +00.9	N	22 44.3 +00.2	299 54.4 +01.9	S	15 31.6 -00.1	309 40.8 +02.2	S	18 15.3 -00.1	06			
07	213 21.5 +00.9	N	22 44.5 +00.3	314 56.3 +01.9	S	15 31.5 -00.2	324 43.0 +02.2	S	18 15.2 +00.0	07			
08	228 22.4 +00.9	N	22 44.8 +00.2	329 58.2 +01.9	S	15 31.3 -00.1	339 45.2 +02.2	S	18 15.2 -00.1	08			
09	243 23.3 +00.9	N	22 45.0 +00.3	345 00.1 +02.0	S	15 31.2 -00.2	354 47.4 +02.3	S	18 15.1 -00.1	09			
10	258 24.2 +00.9	N	22 45.3 +00.3	0 02.1 +01.9	S	15 31.0 -00.2	9 49.7 +02.2	S	18 15.0 +00.0	10			
11	273 25.1 +00.9	N	22 45.6 +00.2	15 04.0 +01.9	S	15 30.8 -00.1	24 51.9 +02.2	S	18 15.0 -00.1	11			
12	288 26.0 +00.9	N	22 45.8 +00.3	30 05.9 +02.0	S	15 30.7 -00.2	39 54.1 +02.2	S	18 14.9 +00.0	12			
13	303 26.9 +00.9	N	22 46.1 +00.3	45 07.9 +01.9	S	15 30.5 -00.2	54 56.3 +02.2	S	18 14.9 -00.1	13			
14	318 27.8 +00.9	N	22 46.4 +00.2	60 09.8 +01.9	S	15 30.3 -00.1	69 58.5 +02.3	S	18 14.8 -00.1	14			
15	333 28.7 +00.9	N	22 46.6 +00.3	75 11.7 +02.0	S	15 30.2 -00.2	85 00.8 +02.2	S	18 14.7 +00.0	15			
16	348 29.6 +00.9	N	22 46.9 +00.2	90 13.7 +01.9	S	15 30.0 -00.2	100 03.0 +02.2	S	18 14.7 -00.1	16			
17	3 30.5 +00.8	N	22 47.1 +00.3	105 15.6 +01.9	S	15 29.8 -00.1	115 05.2 +02.2	S	18 14.6 +00.0	17			
18	18 31.3 +00.9	N	22 47.4 +00.3	120 17.5 +01.9	S	15 29.7 -00.2	130 07.4 +02.2	S	18 14.6 -00.1	18			
19	33 32.2 +00.9	N	22 47.7 +00.2	135 19.4 +02.0	S	15 29.5 -00.2	145 09.6 +02.3	S	18 14.5 -00.1	19			
20	48 33.1 +00.9	N	22 47.9 +00.3	150 21.4 +01.9	S	15 29.3 -00.1	160 11.9 +02.2	S	18 14.4 +00.0	20			
21	63 34.0 +00.9	N	22 48.2 +00.2	165 23.3 +01.9	S	15 29.2 -00.2	175 14.1 +02.2	S	18 14.4 -00.1	21			
22	78 34.9 +00.9	N	22 48.4 +00.3	180 25.2 +02.0	S	15 29.0 -00.2	190 16.3 +02.2	S	18 14.3 +00.0	22			
23	93 35.8 +00.9	N	22 48.7 +00.2	195 27.2 +01.9	S	15 28.8 -00.1	205 18.5 +02.2	S	18 14.3 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'0 00'0 00'0 00'0 00'0 00'0			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 296° 296° 296° 296° 296° 296°			SHA 038° 038° 038° 038° 038° 038°			SHA 048° 048° 048° 048° 048° 048°						
	Greenwich Culmination Time: 16:45			Greenwich Culmination Time: 09:59			Greenwich Culmination Time: 09:20						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 45.1 +00.2	S	02 08.1 -00.9	179 47.6 -00.4	S	04 34.7 -01.3	159 39.9 -25.1	N	00 50.7 +13.0	00			
01	192 45.3 +00.1	S	02 07.2 -01.0	194 47.2 -00.4	S	04 33.4 -01.2	174 14.8 -25.0	N	01 03.7 +13.0	01			
02	207 45.4 +00.2	S	02 06.2 -01.0	209 46.8 -00.4	S	04 32.2 -01.2	188 49.8 -25.1	N	01 16.7 +12.9	02			
03	222 45.6 +00.2	S	02 05.2 -01.0	224 46.4 -00.4	S	04 31.0 -01.3	203 24.7 -25.0	N	01 29.6 +12.9	03			
04	237 45.8 +00.2	S	02 04.2 -01.0	239 46.0 -00.4	S	04 29.7 -01.2	217 59.7 -25.0	N	01 42.5 +12.9	04			
05	252 46.0 +00.1	S	02 03.2 -01.0	254 45.6 -00.4	S	04 28.5 -01.2	232 34.7 -25.0	N	01 55.4 +12.9	05			
06	267 46.1 +00.2	S	02 02.2 -01.0	269 45.2 -00.4	S	04 27.3 -01.3	247 09.7 -25.0	N	02 08.3 +12.9	06			
07	282 46.3 +00.2	S	02 01.2 -01.0	284 44.8 -00.4	S	04 26.0 -01.2	261 44.7 -25.0	N	02 21.2 +12.9	07			
08	297 46.5 +00.2	S	02 00.2 -00.9	299 44.4 -00.4	S	04 24.8 -01.3	276 19.7 -25.0	N	02 34.1 +12.9	08			
09	312 46.7 +00.1	S	01 59.3 -01.0	314 44.0 -00.4	S	04 23.5 -01.2	290 54.7 -24.9	N	02 47.0 +12.8	09			
10	327 46.8 +00.2	S	01 58.3 -01.0	329 43.6 -00.4	S	04 22.3 -01.2	305 29.8 -25.0	N	02 59.8 +12.8	10			
11	342 47.0 +00.2	S	01 57.3 -01.0	344 43.2 -00.4	S	04 21.1 -01.3	320 04.8 -25.0	N	03 12.6 +12.8	11			
12	357 47.2 +00.2	S	01 56.3 -01.0	359 42.8 -00.4	S	04 19.8 -01.2	334 39.8 -24.9	N	03 25.4 +12.8	12			
13	12 47.4 +00.1	S	01 55.3 -01.0	14 42.4 -00.4	S	04 18.6 -01.2	349 14.9 -25.0	N	03 38.2 +12.8	13			
14	27 47.5 +00.2	S	01 54.3 -01.0	29 42.0 -00.4	S	04 17.4 -01.3	3 49.9 -25.0	N	03 51.0 +12.7	14			
15	42 47.7 +00.2	S	01 53.3 -01.0	44 41.6 -00.4	S	04 16.1 -01.2	18 24.9 -24.9	N	04 03.7 +12.7	15			
16	57 47.9 +00.2	S	01 52.3 -01.0	59 41.2 -00.4	S	04 14.9 -01.2	32 60.0 -25.0	N	04 16.4 +12.7	16			
17	72 48.1 +00.1	S	01 51.3 -00.9	74 40.8 -00.4	S	04 13.7 -01.3	47 35.0 -25.0	N	04 29.1 +12.7	17			
18	87 48.2 +00.2	S	01 50.4 -01.0	89 40.4 -00.4	S	04 12.4 -01.2	62 10.0 -24.9	N	04 41.8 +12.6	18			
19	102 48.4 +00.2	S	01 49.4 -01.0	104 40.0 -00.4	S	04 11.2 -01.3	76 45.1 -25.0	N	04 54.4 +12.6	19			
20	117 48.6 +00.2	S	01 48.4 -01.0	119 39.6 -00.4	S	04 09.9 -01.2	91 20.1 -25.0	N	05 07.0 +12.6	20			
21	132 48.8 +00.1	S	01 47.4 -01.0	134 39.2 -00.4	S	04 08.7 -01.2	105 55.1 -24.9	N	05 19.6 +12.6	21			
22	147 48.9 +00.2	S	01 46.4 -01.0	149 38.8 -00.4	S	04 07.5 -01.3	120 30.2 -25.0	N	05 32.2 +12.6	22			
23	162 49.1 +00.2	S	01 45.4 -01.0	164 38.4 -00.4	S	04 06.2 -01.2	135 05.2 -25.0	N	05 44.8 +12.5	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22				UT 02 06 10 14 18 22					
	SD 16'1 16'1 16'1 16'1 16'1 16'1			SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 14'9 14'9 14'9 14'9 14'8 14'8					
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 54'7 54'6 54'6 54'5 54'5 54'4					
	SHA 005° 005° 005° 004° 004° 004°			SHA 007° 007° 006° 006° 006° 006°				SHA 346° 344° 342° 340° 339° 337°					
	Greenwich Culmination Time: 12:08			Greenwich Culmination Time: 12:01				Greenwich Culmination Time: 13:44					

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	108 36.7 +00.9	N	22 48.9 +00.3	210 29.1 +01.9	S	15 28.7 -00.2	220 20.7 +02.3	S	18 14.2 -00.1	00			
01	123 37.6 +00.9	N	22 49.2 +00.3	225 31.0 +02.0	S	15 28.5 -00.1	235 23.0 +02.2	S	18 14.1 +00.0	01			
02	138 38.5 +00.9	N	22 49.5 +00.2	240 33.0 +01.9	S	15 28.4 -00.2	250 25.2 +02.2	S	18 14.1 -00.1	02			
03	153 39.4 +00.9	N	22 49.7 +00.3	255 34.9 +01.9	S	15 28.2 -00.2	265 27.4 +02.2	S	18 14.0 +00.0	03			
04	168 40.3 +00.9	N	22 50.0 +00.2	270 36.8 +01.9	S	15 28.0 -00.1	280 29.6 +02.2	S	18 14.0 -00.1	04			
05	183 41.2 +00.9	N	22 50.2 +00.3	285 38.7 +02.0	S	15 27.9 -00.2	295 31.8 +02.3	S	18 13.9 -00.1	05			
06	198 42.1 +00.8	N	22 50.5 +00.2	300 40.7 +01.9	S	15 27.7 -00.2	310 34.1 +02.2	S	18 13.8 +00.0	06			
07	213 42.9 +00.9	N	22 50.7 +00.3	315 42.6 +01.9	S	15 27.5 -00.1	325 36.3 +02.2	S	18 13.8 -00.1	07			
08	228 43.8 +00.9	N	22 51.0 +00.3	330 44.5 +02.0	S	15 27.4 -00.2	340 38.5 +02.2	S	18 13.7 +00.0	08			
09	243 44.7 +00.9	N	22 51.3 +00.2	345 46.5 +01.9	S	15 27.2 -00.2	355 40.7 +02.2	S	18 13.7 -00.1	09			
10	258 45.6 +00.9	N	22 51.5 +00.3	0 48.4 +01.9	S	15 27.0 -00.1	10 42.9 +02.3	S	18 13.6 -00.1	10			
11	273 46.5 +00.9	N	22 51.8 +00.2	15 50.3 +02.0	S	15 26.9 -00.2	25 45.2 +02.2	S	18 13.5 +00.0	11			
12	288 47.4 +00.9	N	22 52.0 +00.3	30 52.3 +01.9	S	15 26.7 -00.2	40 47.4 +02.2	S	18 13.5 -00.1	12			
13	303 48.3 +00.9	N	22 52.3 +00.2	45 54.2 +01.9	S	15 26.5 -00.1	55 49.6 +02.2	S	18 13.4 +00.0	13			
14	318 49.2 +00.9	N	22 52.5 +00.3	60 56.1 +02.0	S	15 26.4 -00.2	70 51.8 +02.2	S	18 13.4 -00.1	14			
15	333 50.1 +00.9	N	22 52.8 +00.2	75 58.1 +01.9	S	15 26.2 -00.1	85 54.0 +02.3	S	18 13.3 -00.1	15			
16	348 51.0 +00.8	N	22 53.0 +00.3	90 60.0 +01.9	S	15 26.1 -00.2	100 56.3 +02.2	S	18 13.2 +00.0	16			
17	3 51.8 +00.9	N	22 53.3 +00.3	106 01.9 +02.0	S	15 25.9 -00.2	115 58.5 +02.2	S	18 13.2 -00.1	17			
18	18 52.7 +00.9	N	22 53.6 +00.2	121 03.9 +01.9	S	15 25.7 -00.1	131 00.7 +02.2	S	18 13.1 +00.0	18			
19	33 53.6 +00.9	N	22 53.8 +00.3	136 05.8 +01.9	S	15 25.6 -00.2	146 02.9 +02.2	S	18 13.1 -00.1	19			
20	48 54.5 +00.9	N	22 54.1 +00.2	151 07.7 +02.0	S	15 25.4 -00.2	161 05.1 +02.3	S	18 13.0 -00.1	20			
21	63 55.4 +00.9	N	22 54.3 +00.3	166 09.7 +01.9	S	15 25.2 -00.1	176 07.4 +02.2	S	18 12.9 +00.0	21			
22	78 56.3 +00.9	N	22 54.6 +00.2	181 11.6 +01.9	S	15 25.1 -00.2	191 09.6 +02.2	S	18 12.9 -00.1	22			
23	93 57.2 +00.9	N	22 54.8 +00.3	196 13.5 +02.0	S	15 24.9 -00.2	206 11.8 +02.2	S	18 12.8 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22				UT 02 06 10 14 18 22					
	SD 00'0 00'0 00'0 00'0 00'0 00'0			SD 00'3 00'3 00'3 00'3 00'3 00'3				SD 00'1 00'1 00'1 00'1 00'1 00'1					
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0					
	SHA 296° 296° 296° 295° 295° 295°			SHA 038° 038° 038° 038° 038° 037°				SHA 048° 048° 047° 047° 047° 047°					
	Greenwich Culmination Time: 16:44			Greenwich Culmination Time: 09:56				Greenwich Culmination Time: 09:17					

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 49.3 +00.2	S 01	44.4 -01.0	179 38.0 -00.4	S 04	05.0 -01.2	149 40.2 -25.0	N 05	57.3 +12.5	00			
01	192 49.5 +00.2	S 01	43.4 -00.9	194 37.6 -00.4	S 04	03.8 -01.3	164 15.2 -25.0	N 06	09.8 +12.4	01			
02	207 49.7 +00.1	S 01	42.5 -01.0	209 37.2 -00.4	S 04	02.5 -01.2	178 50.2 -25.0	N 06	22.2 +12.5	02			
03	222 49.8 +00.2	S 01	41.5 -01.0	224 36.8 -00.4	S 04	01.3 -01.3	193 25.2 -25.1	N 06	34.7 +12.4	03			
04	237 50.0 +00.2	S 01	40.5 -01.0	239 36.4 -00.4	S 04	00.0 -01.2	208 00.1 -25.0	N 06	47.1 +12.3	04			
05	252 50.2 +00.2	S 01	39.5 -01.0	254 36.0 -00.4	S 03	58.8 -01.2	222 35.1 -25.0	N 06	59.4 +12.4	05			
06	267 50.4 +00.1	S 01	38.5 -01.0	269 35.6 -00.4	S 03	57.6 -01.3	237 10.1 -25.1	N 07	11.8 +12.3	06			
07	282 50.5 +00.2	S 01	37.5 -01.0	284 35.2 -00.4	S 03	56.3 -01.2	251 45.0 -25.1	N 07	24.1 +12.2	07			
08	297 50.7 +00.2	S 01	36.5 -01.0	299 34.8 -00.4	S 03	55.1 -01.3	266 19.9 -25.1	N 07	36.3 +12.3	08			
09	312 50.9 +00.2	S 01	35.5 -01.0	314 34.4 -00.4	S 03	53.8 -01.2	280 54.8 -25.1	N 07	48.6 +12.2	09			
10	327 51.1 +00.1	S 01	34.5 -00.9	329 34.0 -00.4	S 03	52.6 -01.2	295 29.7 -25.1	N 08	00.8 +12.1	10			
11	342 51.2 +00.2	S 01	33.6 -01.0	344 33.6 -00.4	S 03	51.4 -01.3	310 04.6 -25.1	N 08	12.9 +12.2	11			
12	357 51.4 +00.2	S 01	32.6 -01.0	359 33.2 -00.4	S 03	50.1 -01.2	324 39.5 -25.2	N 08	25.1 +12.1	12			
13	12 51.6 +00.2	S 01	31.6 -01.0	14 32.8 -00.4	S 03	48.9 -01.3	339 14.3 -25.1	N 08	37.2 +12.0	13			
14	27 51.8 +00.2	S 01	30.6 -01.0	29 32.4 -00.4	S 03	47.6 -01.2	353 49.2 -25.2	N 08	49.2 +12.0	14			
15	42 52.0 +00.1	S 01	29.6 -01.0	44 32.0 -00.4	S 03	46.4 -01.3	8 24.0 -25.2	N 09	01.2 +12.0	15			
16	57 52.1 +00.2	S 01	28.6 -01.0	59 31.6 -00.4	S 03	45.1 -01.2	22 58.8 -25.2	N 09	13.2 +11.9	16			
17	72 52.3 +00.2	S 01	27.6 -01.0	74 31.2 -00.4	S 03	43.9 -01.2	37 33.6 -25.3	N 09	25.1 +11.9	17			
18	87 52.5 +00.2	S 01	26.6 -01.0	89 30.8 -00.4	S 03	42.7 -01.3	52 08.3 -25.3	N 09	37.0 +11.9	18			
19	102 52.7 +00.2	S 01	25.6 -00.9	104 30.4 -00.4	S 03	41.4 -01.2	66 43.0 -25.3	N 09	48.9 +11.8	19			
20	117 52.9 +00.1	S 01	24.7 -01.0	119 30.0 -00.4	S 03	40.2 -01.3	81 17.7 -25.3	N 10	00.7 +11.8	20			
21	132 53.0 +00.2	S 01	23.7 -01.0	134 29.6 -00.4	S 03	38.9 -01.2	95 52.4 -25.3	N 10	12.5 +11.7	21			
22	147 53.2 +00.2	S 01	22.7 -01.0	149 29.2 -00.4	S 03	37.7 -01.3	110 27.1 -25.4	N 10	24.2 +11.7	22			
23	162 53.4 +00.2	S 01	21.7 -01.0	164 28.8 -00.4	S 03	36.4 -01.2	125 01.7 -25.4	N 10	35.9 +11.7	23			
UT	02 06 10 14 18 22			UT	02 06 10 14 18 22			UT	02 06 10 14 18 22				
SD	16'1 16'1 16'1 16'1 16'1 16'1			SD	00'1 00'1 00'1 00'1 00'1 00'1			SD	14'8 14'8 14'8 14'8 14'8 14'8				
HP	00'1 00'1 00'1 00'1 00'1 00'1			HP	00'1 00'1 00'1 00'1 00'1 00'1			HP	54'4 54'3 54'3 54'3 54'2 54'2				
SHA	004° 004° 004° 003° 003° 003°			SHA	006° 006° 005° 005° 005° 005°			SHA	335° 333° 331° 329° 328° 326°				
Greenwich Culmination Time: 12:08				Greenwich Culmination Time: 12:01				Greenwich Culmination Time: 14:25					

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	108 58.1 +00.8	N 22	55.1 +00.2	211 15.5 +01.9	S 15	24.7 -00.1	221 14.0 +02.3	S 18	12.8 -00.1	00			
01	123 58.9 +00.9	N 22	55.3 +00.3	226 17.4 +01.9	S 15	24.6 -00.2	236 16.3 +02.2	S 18	12.7 -00.1	01			
02	138 59.8 +00.9	N 22	55.6 +00.2	241 19.3 +02.0	S 15	24.4 -00.1	251 18.5 +02.2	S 18	12.6 +00.0	02			
03	154 00.7 +00.9	N 22	55.8 +00.3	256 21.3 +01.9	S 15	24.3 -00.2	266 20.7 +02.2	S 18	12.6 -00.1	03			
04	169 01.6 +00.9	N 22	56.1 +00.2	271 23.2 +01.9	S 15	24.1 -00.2	281 22.9 +02.2	S 18	12.5 +00.0	04			
05	184 02.5 +00.9	N 22	56.3 +00.3	286 25.1 +02.0	S 15	23.9 -00.1	296 25.1 +02.3	S 18	12.5 -00.1	05			
06	199 03.4 +00.9	N 22	56.6 +00.2	301 27.1 +01.9	S 15	23.8 -00.2	311 27.4 +02.2	S 18	12.4 -00.1	06			
07	214 04.3 +00.9	N 22	56.8 +00.3	316 29.0 +01.9	S 15	23.6 -00.2	326 29.6 +02.2	S 18	12.3 +00.0	07			
08	229 05.2 +00.8	N 22	57.1 +00.2	331 30.9 +02.0	S 15	23.4 -00.1	341 31.8 +02.2	S 18	12.3 -00.1	08			
09	244 06.0 +00.9	N 22	57.3 +00.3	346 32.9 +01.9	S 15	23.3 -00.2	356 34.0 +02.3	S 18	12.2 +00.0	09			
10	259 06.9 +00.9	N 22	57.6 +00.2	1 34.8 +01.9	S 15	23.1 -00.2	11 36.3 +02.2	S 18	12.2 -00.1	10			
11	274 07.8 +00.9	N 22	57.8 +00.3	16 36.7 +02.0	S 15	22.9 -00.1	26 38.5 +02.2	S 18	12.1 -00.1	11			
12	289 08.7 +00.9	N 22	58.1 +00.2	31 38.7 +01.9	S 15	22.8 -00.2	41 40.7 +02.2	S 18	12.0 +00.0	12			
13	304 09.6 +00.9	N 22	58.3 +00.3	46 40.6 +01.9	S 15	22.6 -00.2	56 42.9 +02.3	S 18	12.0 -00.1	13			
14	319 10.5 +00.9	N 22	58.6 +00.2	61 42.5 +02.0	S 15	22.4 -00.1	71 45.2 +02.2	S 18	11.9 +00.0	14			
15	334 11.4 +00.8	N 22	58.8 +00.3	76 44.5 +01.9	S 15	22.3 -00.2	86 47.4 +02.2	S 18	11.9 -00.1	15			
16	349 12.2 +00.9	N 22	59.1 +00.2	91 46.4 +01.9	S 15	22.1 -00.1	101 49.6 +02.2	S 18	11.8 -00.1	16			
17	4 13.1 +00.9	N 22	59.3 +00.3	106 48.3 +02.0	S 15	22.0 -00.2	116 51.8 +02.3	S 18	11.7 +00.0	17			
18	19 14.0 +00.9	N 22	59.6 +00.2	121 50.3 +01.9	S 15	21.8 -00.2	131 54.1 +02.2	S 18	11.7 -00.1	18			
19	34 14.9 +00.9	N 22	59.8 +00.3	136 52.2 +01.9	S 15	21.6 -00.1	146 56.3 +02.2	S 18	11.6 +00.0	19			
20	49 15.8 +00.9	N 23	00.1 +00.2	151 54.1 +02.0	S 15	21.5 -00.2	161 58.5 +02.2	S 18	11.6 -00.1	20			
21	64 16.7 +00.8	N 23	00.3 +00.3	166 56.1 +01.9	S 15	21.3 -00.2	177 00.7 +02.3	S 18	11.5 -00.1	21			
22	79 17.5 +00.9	N 23	00.6 +00.2	181 58.0 +01.9	S 15	21.1 -00.1	192 03.0 +02.2	S 18	11.4 +00.0	22			
23	94 18.4 +00.9	N 23	00.8 +00.3	196 59.9 +02.0	S 15	21.0 -00.2	207 05.2 +02.2	S 18	11.4 -00.1	23			
UT	02 06 10 14 18 22			UT	02 06 10 14 18 22			UT	02 06 10 14 18 22				
SD	00'0 00'0 00'0 00'0 00'0 00'0			SD	00'3 00'3 00'3 00'3 00'3 00'3			SD	00'1 00'1 00'1 00'1 00'1 00'1				
HP	00'1 00'1 00'1 00'1 00'1 00'1			HP	00'0 00'0 00'0 00'0 00'0 00'0			HP	00'0 00'0 00'0 00'0 00'0 00'0				
SHA	295° 295° 295° 295° 295° 295°			SHA	037° 037° 037° 037° 037° 037°			SHA	047° 047° 047° 047° 047° 047°				
Greenwich Culmination Time: 16:43				Greenwich Culmination Time: 09:53				Greenwich Culmination Time: 09:13					

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 53.6 +00.1	S	01 20.7 -01.0	179 28.4 -00.4	S	03 35.2 -01.2	139 36.3 -25.4	N	10 47.6 +11.6	00			
01	192 53.7 +00.2	S	01 19.7 -01.0	194 28.0 -00.4	S	03 34.0 -01.3	154 10.9 -25.4	N	10 59.2 +11.5	01			
02	207 53.9 +00.2	S	01 18.7 -01.0	209 27.6 -00.4	S	03 32.7 -01.2	168 45.5 -25.5	N	11 10.7 +11.5	02			
03	222 54.1 +00.2	S	01 17.7 -01.0	224 27.2 -00.4	S	03 31.5 -01.3	183 20.0 -25.5	N	11 22.2 +11.5	03			
04	237 54.3 +00.2	S	01 16.7 -00.9	239 26.8 -00.4	S	03 30.2 -01.2	197 54.5 -25.5	N	11 33.7 +11.4	04			
05	252 54.5 +00.1	S	01 15.8 -01.0	254 26.4 -00.4	S	03 29.0 -01.3	212 29.0 -25.6	N	11 45.1 +11.3	05			
06	267 54.6 +00.2	S	01 14.8 -01.0	269 26.0 -00.4	S	03 27.7 -01.2	227 03.4 -25.6	N	11 56.4 +11.4	06			
07	282 54.8 +00.2	S	01 13.8 -01.0	284 25.6 -00.4	S	03 26.5 -01.2	241 37.8 -25.6	N	12 07.8 +11.2	07			
08	297 55.0 +00.2	S	01 12.8 -01.0	299 25.2 -00.4	S	03 25.3 -01.3	256 12.2 -25.7	N	12 19.0 +11.2	08			
09	312 55.2 +00.2	S	01 11.8 -01.0	314 24.8 -00.4	S	03 24.0 -01.2	270 46.5 -25.6	N	12 30.2 +11.2	09			
10	327 55.4 +00.1	S	01 10.8 -01.0	329 24.4 -00.4	S	03 22.8 -01.3	285 20.9 -25.8	N	12 41.4 +11.1	10			
11	342 55.5 +00.2	S	01 09.8 -01.0	344 24.0 -00.4	S	03 21.5 -01.2	299 55.1 -25.7	N	12 52.5 +11.1	11			
12	357 55.7 +00.2	S	01 08.8 -01.0	359 23.6 -00.4	S	03 20.3 -01.3	314 29.4 -25.8	N	13 03.6 +11.0	12			
13	12 55.9 +00.2	S	01 07.8 -00.9	14 23.2 -00.4	S	03 19.0 -01.2	329 03.6 -25.8	N	13 14.6 +10.9	13			
14	27 56.1 +00.2	S	01 06.9 -01.0	29 22.8 -00.4	S	03 17.8 -01.3	343 37.8 -25.9	N	13 25.5 +10.9	14			
15	42 56.3 +00.1	S	01 05.9 -01.0	44 22.4 -00.3	S	03 16.5 -01.2	358 11.9 -25.9	N	13 36.4 +10.8	15			
16	57 56.4 +00.2	S	01 04.9 -01.0	59 22.1 -00.4	S	03 15.3 -01.3	12 46.0 -25.9	N	13 47.2 +10.8	16			
17	72 56.6 +00.2	S	01 03.9 -01.0	74 21.7 -00.4	S	03 14.0 -01.2	27 20.1 -26.0	N	13 58.0 +10.7	17			
18	87 56.8 +00.2	S	01 02.9 -01.0	89 21.3 -00.4	S	03 12.8 -01.2	41 54.1 -26.0	N	14 08.7 +10.7	18			
19	102 57.0 +00.2	S	01 01.9 -01.0	104 20.9 -00.4	S	03 11.6 -01.3	56 28.1 -26.1	N	14 19.4 +10.6	19			
20	117 57.2 +00.1	S	01 00.9 -01.0	119 20.5 -00.4	S	03 10.3 -01.2	71 02.0 -26.1	N	14 30.0 +10.6	20			
21	132 57.3 +00.2	S	00 59.9 -01.0	134 20.1 -00.4	S	03 09.1 -01.3	85 35.9 -26.1	N	14 40.6 +10.5	21			
22	147 57.5 +00.2	S	00 58.9 -00.9	149 19.7 -00.4	S	03 07.8 -01.2	100 09.8 -26.2	N	14 51.1 +10.4	22			
23	162 57.7 +00.2	S	00 58.0 -01.0	164 19.3 -00.4	S	03 06.6 -01.3	114 43.6 -26.2	N	15 01.5 +10.4	23			
UT	02 06 10 14 18 22			UT	02 06 10 14 18 22			UT	02 06 10 14 18 22				
SD	16'1 16'1 16'1 16'1 16'1 16'1			SD	00'1 00'1 00'1 00'1 00'1 00'1			SD	14'8 14'8 14'7 14'7 14'7 14'7				
HP	00'1 00'1 00'1 00'1 00'1 00'1			HP	00'1 00'1 00'1 00'1 00'1 00'1			HP	54'2 54'1 54'1 54'1 54'1 54'1				
SHA	003° 003° 003° 003° 002° 002°			SHA	005° 004° 004° 004° 004° 004°			SHA	324° 322° 320° 318° 316° 314°				
Greenwich Culmination Time: 12:08				Greenwich Culmination Time: 12:02				Greenwich Culmination Time: 15:07					

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	109 19.3 +00.9	N	23 01.1 +00.2	212 01.9 +01.9	S	15 20.8 -00.2	222 07.4 +02.2	S	18 11.3 +00.0	00			
01	124 20.2 +00.9	N	23 01.3 +00.3	227 03.8 +02.0	S	15 20.6 -00.1	237 09.6 +02.3	S	18 11.3 -00.1	01			
02	139 21.1 +00.9	N	23 01.6 +00.2	242 05.8 +01.9	S	15 20.5 -00.2	252 11.9 +02.2	S	18 11.2 +00.0	02			
03	154 22.0 +00.8	N	23 01.8 +00.3	257 07.7 +01.9	S	15 20.3 -00.1	267 14.1 +02.2	S	18 11.2 -00.1	03			
04	169 22.8 +00.9	N	23 02.1 +00.2	272 09.6 +02.0	S	15 20.2 -00.2	282 16.3 +02.2	S	18 11.1 -00.1	04			
05	184 23.7 +00.9	N	23 02.3 +00.2	287 11.6 +01.9	S	15 20.0 -00.2	297 18.5 +02.3	S	18 11.0 +00.0	05			
06	199 24.6 +00.9	N	23 02.5 +00.3	302 13.5 +01.9	S	15 19.8 -00.1	312 20.8 +02.2	S	18 11.0 -00.1	06			
07	214 25.5 +00.9	N	23 02.8 +00.2	317 15.4 +02.0	S	15 19.7 -00.2	327 23.0 +02.2	S	18 10.9 +00.0	07			
08	229 26.4 +00.9	N	23 03.0 +00.3	332 17.4 +01.9	S	15 19.5 -00.2	342 25.2 +02.2	S	18 10.9 -00.1	08			
09	244 27.3 +00.8	N	23 03.3 +00.2	347 19.3 +02.0	S	15 19.3 -00.1	357 27.4 +02.3	S	18 10.8 -00.1	09			
10	259 28.1 +00.9	N	23 03.5 +00.3	2 21.3 +01.9	S	15 19.2 -00.2	12 29.7 +02.2	S	18 10.7 +00.0	10			
11	274 29.0 +00.9	N	23 03.8 +00.2	17 23.2 +01.9	S	15 19.0 -00.2	27 31.9 +02.2	S	18 10.7 -00.1	11			
12	289 29.9 +00.9	N	23 04.0 +00.3	32 25.1 +02.0	S	15 18.8 -00.1	42 34.1 +02.2	S	18 10.6 +00.0	12			
13	304 30.8 +00.9	N	23 04.3 +00.2	47 27.1 +01.9	S	15 18.7 -00.2	57 36.3 +02.3	S	18 10.6 -00.1	13			
14	319 31.7 +00.8	N	23 04.5 +00.2	62 29.0 +01.9	S	15 18.5 -00.1	72 38.6 +02.2	S	18 10.5 -00.1	14			
15	334 32.5 +00.9	N	23 04.7 +00.3	77 30.9 +02.0	S	15 18.4 -00.2	87 40.8 +02.2	S	18 10.4 +00.0	15			
16	349 33.4 +00.9	N	23 05.0 +00.2	92 32.9 +01.9	S	15 18.2 -00.2	102 43.0 +02.2	S	18 10.4 -00.1	16			
17	4 34.3 +00.9	N	23 05.2 +00.3	107 34.8 +02.0	S	15 18.0 -00.1	117 45.2 +02.3	S	18 10.3 +00.0	17			
18	19 35.2 +00.9	N	23 05.5 +00.2	122 36.8 +01.9	S	15 17.9 -00.2	132 47.5 +02.2	S	18 10.3 -00.1	18			
19	34 36.1 +00.9	N	23 05.7 +00.3	137 38.7 +01.9	S	15 17.7 -00.2	147 49.7 +02.2	S	18 10.2 +00.0	19			
20	49 37.0 +00.8	N	23 06.0 +00.2	152 40.6 +02.0	S	15 17.5 -00.1	162 51.9 +02.2	S	18 10.2 -00.1	20			
21	64 37.8 +00.9	N	23 06.2 +00.2	167 42.6 +01.9	S	15 17.4 -00.2	177 54.1 +02.3	S	18 10.1 -00.1	21			
22	79 38.7 +00.9	N	23 06.4 +00.3	182 44.5 +01.9	S	15 17.2 -00.1	192 56.4 +02.2	S	18 10.0 +00.0	22			
23	94 39.6 +00.9	N	23 06.7 +00.2	197 46.4 +02.0	S	15 17.1 -00.2	207 58.6 +02.2	S	18 10.0 -00.1	23			
UT	02 06 10 14 18 22			UT	02 06 10 14 18 22			UT	02 06 10 14 18 22				
SD	00'0 00'0 00'0 00'0 00'0 00'0			SD	00'3 00'3 00'3 00'3 00'3 00'3			SD	00'1 00'1 00'1 00'1 00'1 00'1				
HP	00'1 00'1 00'1 00'1 00'1 00'1			HP	00'0 00'0 00'0 00'0 00'0 00'0			HP	00'0 00'0 00'0 00'0 00'0 00'0				
SHA	294° 294° 294° 294° 294° 294°			SHA	037° 037° 037° 037° 037° 037°			SHA	047° 047° 047° 047° 047° 047°				
Greenwich Culmination Time: 16:41				Greenwich Culmination Time: 09:50				Greenwich Culmination Time: 09:10					

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	177 57.9 +00.2	S 00	57.0 -01.0	179 18.9 -00.4	S 03	05.3 -01.2	129 17.4 -26.3	N 15	11.9 +10.3	00			
01	192 58.1 +00.1	S 00	56.0 -01.0	194 18.5 -00.4	S 03	04.1 -01.3	143 51.1 -26.3	N 15	22.2 +10.2	01			
02	207 58.2 +00.2	S 00	55.0 -01.0	209 18.1 -00.4	S 03	02.8 -01.2	158 24.8 -26.4	N 15	32.4 +10.2	02			
03	222 58.4 +00.2	S 00	54.0 -01.0	224 17.7 -00.4	S 03	01.6 -01.3	172 58.4 -26.4	N 15	42.6 +10.1	03			
04	237 58.6 +00.2	S 00	53.0 -01.0	239 17.3 -00.4	S 03	00.3 -01.2	187 32.0 -26.4	N 15	52.7 +10.1	04			
05	252 58.8 +00.2	S 00	52.0 -01.0	254 16.9 -00.4	S 02	59.1 -01.3	202 05.6 -26.5	N 16	02.8 +10.0	05			
06	267 59.0 +00.1	S 00	51.0 -01.0	269 16.5 -00.3	S 02	57.8 -01.2	216 39.1 -26.5	N 16	12.8 +09.9	06			
07	282 59.1 +00.2	S 00	50.0 -00.9	284 16.2 -00.4	S 02	56.6 -01.3	231 12.6 -26.6	N 16	22.7 +09.8	07			
08	297 59.3 +00.2	S 00	49.1 -01.0	299 15.8 -00.4	S 02	55.3 -01.2	245 46.0 -26.6	N 16	32.5 +09.8	08			
09	312 59.5 +00.2	S 00	48.1 -01.0	314 15.4 -00.4	S 02	54.1 -01.3	260 19.4 -26.7	N 16	42.3 +09.7	09			
10	327 59.7 +00.2	S 00	47.1 -01.0	329 15.0 -00.4	S 02	52.8 -01.2	274 52.7 -26.7	N 16	52.0 +09.7	10			
11	342 59.9 +00.2	S 00	46.1 -01.0	344 14.6 -00.4	S 02	51.6 -01.3	289 26.0 -26.8	N 17	01.7 +09.6	11			
12	358 00.1 +00.1	S 00	45.1 -01.0	359 14.2 -00.4	S 02	50.3 -01.2	303 59.2 -26.8	N 17	11.3 +09.5	12			
13	13 00.2 +00.2	S 00	44.1 -01.0	14 13.8 -00.4	S 02	49.1 -01.3	318 32.4 -26.9	N 17	20.8 +09.4	13			
14	28 00.4 +00.2	S 00	43.1 -01.0	29 13.4 -00.4	S 02	47.8 -01.2	333 05.5 -26.9	N 17	30.2 +09.4	14			
15	43 00.6 +00.2	S 00	42.1 -01.0	44 13.0 -00.4	S 02	46.6 -01.2	347 38.6 -27.0	N 17	39.6 +09.3	15			
16	58 00.8 +00.2	S 00	41.1 -00.9	59 12.6 -00.4	S 02	45.4 -01.3	2 11.6 -27.0	N 17	48.9 +09.2	16			
17	73 01.0 +00.1	S 00	40.2 -01.0	74 12.2 -00.3	S 02	44.1 -01.2	16 44.6 -27.1	N 17	58.1 +09.2	17			
18	88 01.1 +00.2	S 00	39.2 -01.0	89 11.9 -00.4	S 02	42.9 -01.3	31 17.5 -27.1	N 18	07.3 +09.0	18			
19	103 01.3 +00.2	S 00	38.2 -01.0	104 11.5 -00.4	S 02	41.6 -01.2	45 50.4 -27.2	N 18	16.3 +09.0	19			
20	118 01.5 +00.2	S 00	37.2 -01.0	119 11.1 -00.4	S 02	40.4 -01.3	60 23.2 -27.3	N 18	25.3 +09.0	20			
21	133 01.7 +00.2	S 00	36.2 -01.0	134 10.7 -00.4	S 02	39.1 -01.2	74 55.9 -27.3	N 18	34.3 +08.8	21			
22	148 01.9 +00.2	S 00	35.2 -01.0	149 10.3 -00.4	S 02	37.9 -01.3	89 28.6 -27.3	N 18	43.1 +08.8	22			
23	163 02.1 +00.1	S 00	34.2 -01.0	164 09.9 -00.4	S 02	36.6 -01.2	104 01.3 -27.4	N 18	51.9 +08.7	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'1 16'1 16'1 16'1 16'1 16'1			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 14'7 14'7 14'7 14'7 14'7 14'7						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 54'1 54'1 54'1 54'1 54'1 54'1						
	SHA 002° 002° 002° 002° 002° 001°			SHA 003° 003° 003° 003° 003° 002°			SHA 313° 311° 309° 307° 305° 303°						
	Greenwich Culmination Time: 12:07			Greenwich Culmination Time: 12:03			Greenwich Culmination Time: 15:50						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	109 40.5 +00.8	N 23	06.9 +00.3	212 48.4 +01.9	S 15	16.9 -00.2	223 00.8 +02.3	S 18	09.9 +00.0	00			
01	124 41.3 +00.9	N 23	07.2 +00.2	227 50.3 +02.0	S 15	16.7 -00.1	238 03.1 +02.2	S 18	09.9 -00.1	01			
02	139 42.2 +00.9	N 23	07.4 +00.2	242 52.3 +01.9	S 15	16.6 -00.2	253 05.3 +02.2	S 18	09.8 -00.1	02			
03	154 43.1 +00.9	N 23	07.6 +00.3	257 54.2 +01.9	S 15	16.4 -00.2	268 07.5 +02.2	S 18	09.7 +00.0	03			
04	169 44.0 +00.9	N 23	07.9 +00.2	272 56.1 +02.0	S 15	16.2 -00.1	283 09.7 +02.3	S 18	09.7 -00.1	04			
05	184 44.9 +00.8	N 23	08.1 +00.3	287 58.1 +01.9	S 15	16.1 -00.2	298 12.0 +02.2	S 18	09.6 +00.0	05			
06	199 45.7 +00.9	N 23	08.4 +00.2	303 00.0 +02.0	S 15	15.9 -00.2	313 14.2 +02.2	S 18	09.6 -00.1	06			
07	214 46.6 +00.9	N 23	08.6 +00.2	318 02.0 +01.9	S 15	15.7 -00.1	328 16.4 +02.2	S 18	09.5 +00.0	07			
08	229 47.5 +00.9	N 23	08.8 +00.3	333 03.9 +01.9	S 15	15.6 -00.2	343 18.6 +02.3	S 18	09.5 -00.1	08			
09	244 48.4 +00.9	N 23	09.1 +00.2	348 05.8 +02.0	S 15	15.4 -00.1	358 20.9 +02.2	S 18	09.4 -00.1	09			
10	259 49.3 +00.8	N 23	09.3 +00.3	3 07.8 +01.9	S 15	15.3 -00.2	13 23.1 +02.2	S 18	09.3 +00.0	10			
11	274 50.1 +00.9	N 23	09.6 +00.2	18 09.7 +02.0	S 15	15.1 -00.2	28 25.3 +02.3	S 18	09.3 -00.1	11			
12	289 51.0 +00.9	N 23	09.8 +00.2	33 11.7 +01.9	S 15	14.9 -00.1	43 27.6 +02.2	S 18	09.2 +00.0	12			
13	304 51.9 +00.9	N 23	10.0 +00.3	48 13.6 +01.9	S 15	14.8 -00.2	58 29.8 +02.2	S 18	09.2 -00.1	13			
14	319 52.8 +00.8	N 23	10.3 +00.2	63 15.5 +02.0	S 15	14.6 -00.2	73 32.0 +02.2	S 18	09.1 -00.1	14			
15	334 53.6 +00.9	N 23	10.5 +00.2	78 17.5 +01.9	S 15	14.4 -00.1	88 34.2 +02.3	S 18	09.0 +00.0	15			
16	349 54.5 +00.9	N 23	10.7 +00.3	93 19.4 +02.0	S 15	14.3 -00.2	103 36.5 +02.2	S 18	09.0 -00.1	16			
17	4 55.4 +00.9	N 23	11.0 +00.2	108 21.4 +01.9	S 15	14.1 -00.1	118 38.7 +02.2	S 18	08.9 +00.0	17			
18	19 56.3 +00.8	N 23	11.2 +00.3	123 23.3 +01.9	S 15	14.0 -00.2	133 40.9 +02.3	S 18	08.9 -00.1	18			
19	34 57.1 +00.9	N 23	11.5 +00.2	138 25.2 +02.0	S 15	13.8 -00.2	148 43.2 +02.2	S 18	08.8 +00.0	19			
20	49 58.0 +00.9	N 23	11.7 +00.2	153 27.2 +01.9	S 15	13.6 -00.1	163 45.4 +02.2	S 18	08.8 -00.1	20			
21	64 58.9 +00.9	N 23	11.9 +00.3	168 29.1 +02.0	S 15	13.5 -00.2	178 47.6 +02.3	S 18	08.7 -00.1	21			
22	79 59.8 +00.9	N 23	12.2 +00.2	183 31.1 +01.9	S 15	13.3 -00.2	193 49.9 +02.2	S 18	08.6 +00.0	22			
23	95 00.7 +00.8	N 23	12.4 +00.2	198 33.0 +02.0	S 15	13.1 -00.1	208 52.1 +02.2	S 18	08.6 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'0 00'0 00'0 00'0 00'0 00'0			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 294° 294° 294° 294° 293° 293°			SHA 037° 037° 037° 037° 037° 037°			SHA 047° 047° 047° 047° 047° 047°						
	Greenwich Culmination Time: 16:40			Greenwich Culmination Time: 09:47			Greenwich Culmination Time: 09:06						

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	178 02.2 +00.2	S 00	33.2 -01.0	179 09.5 -00.4	S 02	35.4 -01.3	118 33.9 -27.5	N 19	00.6 +08.6	00										
01	193 02.4 +00.2	S 00	32.2 -00.9	194 09.1 -00.4	S 02	34.1 -01.3	133 06.4 -27.5	N 19	09.2 +08.5	01										
02	208 02.6 +00.2	S 00	31.3 -01.0	209 08.7 -00.4	S 02	32.8 -01.2	147 38.9 -27.5	N 19	17.7 +08.5	02										
03	223 02.8 +00.2	S 00	30.3 -01.0	224 08.3 -00.3	S 02	31.6 -01.3	162 11.4 -27.7	N 19	26.2 +08.3	03										
04	238 03.0 +00.2	S 00	29.3 -01.0	239 08.0 -00.4	S 02	30.3 -01.2	176 43.7 -27.6	N 19	34.5 +08.3	04										
05	253 03.2 +00.1	S 00	28.3 -01.0	254 07.6 -00.4	S 02	29.1 -01.3	191 16.1 -27.8	N 19	42.8 +08.2	05										
06	268 03.3 +00.2	S 00	27.3 -01.0	269 07.2 -00.4	S 02	27.8 -01.2	205 48.3 -27.8	N 19	51.0 +08.2	06										
07	283 03.5 +00.2	S 00	26.3 -01.0	284 06.8 -00.4	S 02	26.6 -01.3	220 20.5 -27.8	N 19	59.2 +08.0	07										
08	298 03.7 +00.2	S 00	25.3 -01.0	299 06.4 -00.4	S 02	25.3 -01.2	234 52.7 -27.9	N 20	07.2 +07.9	08										
09	313 03.9 +00.2	S 00	24.3 -01.0	314 06.0 -00.4	S 02	24.1 -01.3	249 24.8 -28.0	N 20	15.1 +07.9	09										
10	328 04.1 +00.2	S 00	23.3 -00.9	329 05.6 -00.4	S 02	22.8 -01.2	263 56.8 -28.0	N 20	23.0 +07.8	10										
11	343 04.3 +00.1	S 00	22.4 -01.0	344 05.2 -00.3	S 02	21.6 -01.3	278 28.8 -28.1	N 20	30.8 +07.7	11										
12	358 04.4 +00.2	S 00	21.4 -01.0	359 04.9 -00.4	S 02	20.3 -01.2	293 00.7 -28.2	N 20	38.5 +07.6	12										
13	13 04.6 +00.2	S 00	20.4 -01.0	14 04.5 -00.4	S 02	19.1 -01.3	307 32.5 -28.2	N 20	46.1 +07.5	13										
14	28 04.8 +00.2	S 00	19.4 -01.0	29 04.1 -00.4	S 02	17.8 -01.2	322 04.3 -28.2	N 20	53.6 +07.5	14										
15	43 05.0 +00.2	S 00	18.4 -01.0	44 03.7 -00.4	S 02	16.6 -01.3	336 36.1 -28.3	N 21	01.1 +07.3	15										
16	58 05.2 +00.2	S 00	17.4 -01.0	59 03.3 -00.4	S 02	15.3 -01.2	351 07.8 -28.4	N 21	08.4 +07.2	16										
17	73 05.4 +00.1	S 00	16.4 -01.0	74 02.9 -00.4	S 02	14.1 -01.3	5 39.4 -28.4	N 21	15.6 +07.2	17										
18	88 05.5 +00.2	S 00	15.4 -01.0	89 02.5 -00.4	S 02	12.8 -01.2	20 11.0 -28.5	N 21	22.8 +07.1	18										
19	103 05.7 +00.2	S 00	14.4 -00.9	104 02.1 -00.3	S 02	11.6 -01.3	34 42.5 -28.6	N 21	29.9 +06.9	19										
20	118 05.9 +00.2	S 00	13.5 -01.0	119 01.8 -00.4	S 02	10.3 -01.2	49 13.9 -28.6	N 21	36.8 +06.9	20										
21	133 06.1 +00.2	S 00	12.5 -01.0	134 01.4 -00.4	S 02	09.1 -01.3	63 45.3 -28.7	N 21	43.7 +06.8	21										
22	148 06.3 +00.2	S 00	11.5 -01.0	149 01.0 -00.4	S 02	07.8 -01.2	78 16.6 -28.7	N 21	50.5 +06.7	22										
23	163 06.5 +00.1	S 00	10.5 -01.0	164 00.6 -00.4	S 02	06.6 -01.3	92 47.9 -28.8	N 21	57.2 +06.6	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16'1	16'1	16'1	16'1	16'1	16'1	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	14'8	14'8	14'8	14'8	14'8	14'8
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	54'1	54'2	54'2	54'2	54'3	54'3
SHA	001°	001°	001°	001°	001°	000°	SHA	002°	002°	002°	002°	002°	001°	SHA	301°	299°	297°	295°	293°	291°
Greenwich Culmination Time: 12:07							Greenwich Culmination Time: 12:03							Greenwich Culmination Time: 16:36						

UT	Mars				Jupiter				Saturn				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	110 01.5 +00.9	N 23	12.6 +00.3	213 35.0 +01.9	S 15	13.0 -00.2	223 54.3 +02.2	S 18	08.5 +00.0	00										
01	125 02.4 +00.9	N 23	12.9 +00.2	228 36.9 +01.9	S 15	12.8 -00.1	238 56.5 +02.3	S 18	08.5 -00.1	01										
02	140 03.3 +00.9	N 23	13.1 +00.2	243 38.8 +02.0	S 15	12.7 -00.2	253 58.8 +02.2	S 18	08.4 -00.1	02										
03	155 04.2 +00.8	N 23	13.3 +00.3	258 40.8 +01.9	S 15	12.5 -00.2	269 01.0 +02.2	S 18	08.3 +00.0	03										
04	170 05.0 +00.9	N 23	13.6 +00.2	273 42.7 +02.0	S 15	12.3 -00.1	284 03.2 +02.3	S 18	08.3 -00.1	04										
05	185 05.9 +00.9	N 23	13.8 +00.2	288 44.7 +01.9	S 15	12.2 -00.2	299 05.5 +02.2	S 18	08.2 +00.0	05										
06	200 06.8 +00.9	N 23	14.0 +00.3	303 46.6 +02.0	S 15	12.0 -00.2	314 07.7 +02.2	S 18	08.2 -00.1	06										
07	215 07.7 +00.8	N 23	14.3 +00.2	318 48.6 +01.9	S 15	11.8 -00.1	329 09.9 +02.3	S 18	08.1 +00.0	07										
08	230 08.5 +00.9	N 23	14.5 +00.2	333 50.5 +01.9	S 15	11.7 -00.2	344 12.2 +02.2	S 18	08.1 -00.1	08										
09	245 09.4 +00.9	N 23	14.7 +00.3	348 52.4 +02.0	S 15	11.5 -00.2	359 14.4 +02.2	S 18	08.0 -00.1	09										
10	260 10.3 +00.8	N 23	15.0 +00.2	3 54.4 +01.9	S 15	11.3 -00.1	14 16.6 +02.2	S 18	07.9 +00.0	10										
11	275 11.1 +00.9	N 23	15.2 +00.2	18 56.3 +02.0	S 15	11.2 -00.2	29 18.8 +02.3	S 18	07.9 -00.1	11										
12	290 12.0 +00.9	N 23	15.4 +00.3	33 58.3 +01.9	S 15	11.0 -00.1	44 21.1 +02.2	S 18	07.8 +00.0	12										
13	305 12.9 +00.9	N 23	15.7 +00.2	49 00.2 +02.0	S 15	10.9 -00.2	59 23.3 +02.2	S 18	07.8 -00.1	13										
14	320 13.8 +00.8	N 23	15.9 +00.2	64 02.2 +01.9	S 15	10.7 -00.2	74 25.5 +02.3	S 18	07.7 +00.0	14										
15	335 14.6 +00.9	N 23	16.1 +00.3	79 04.1 +01.9	S 15	10.5 -00.1	89 27.8 +02.2	S 18	07.7 -00.1	15										
16	350 15.5 +00.9	N 23	16.4 +00.2	94 06.0 +02.0	S 15	10.4 -00.2	104 30.0 +02.2	S 18	07.6 -00.1	16										
17	5 16.4 +00.9	N 23	16.6 +00.2	109 08.0 +01.9	S 15	10.2 -00.2	119 32.2 +02.3	S 18	07.5 +00.0	17										
18	20 17.3 +00.8	N 23	16.8 +00.3	124 09.9 +02.0	S 15	10.0 -00.1	134 34.5 +02.2	S 18	07.5 -00.1	18										
19	35 18.1 +00.9	N 23	17.1 +00.2	139 11.9 +01.9	S 15	09.9 -00.2	149 36.7 +02.2	S 18	07.4 +00.0	19										
20	50 19.0 +00.9	N 23	17.3 +00.2	154 13.8 +02.0	S 15	09.7 -00.1	164 38.9 +02.3	S 18	07.4 -00.1	20										
21	65 19.9 +00.8	N 23	17.5 +00.2	169 15.8 +01.9	S 15	09.6 -00.2	179 41.2 +02.2	S 18	07.3 +00.0	21										
22	80 20.7 +00.9	N 23	17.7 +00.3	184 17.7 +02.0	S 15	09.4 -00.2	194 43.4 +02.2	S 18	07.3 -00.1	22										
23	95 21.6 +00.9	N 23	18.0 +00.2	199 19.7 +01.9	S 15	09.2 -00.1	209 45.6 +02.3	S 18	07.2 -00.1	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	00'0	00'0	00'0	00'0	00'0	00'0	SD	00'3	00'3	00'3	00'3	00'3	00'3	SD	00'1	00'1	00'1	00'1	00'1	00'1
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP	00'0	00'0	00'0	00'0	00'0	00'0
SHA	293°	293°	293°	293°	293°	293°	SHA	037°	037°	037°	037°	037°	037°	SHA	047°	047°	047°	047°	047°	047°
Greenwich Culmination Time: 16:38							Greenwich Culmination Time: 09:44							Greenwich Culmination Time: 09:03						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 06.6 +00.2	S	00 09.5 -01.0	179 00.2 -00.4	S	02 05.3 -01.3	107 19.1 -28.9	N	22 03.8 +06.5	00			
01	193 06.8 +00.2	S	00 08.5 -01.0	193 59.8 -00.4	S	02 04.0 -01.2	121 50.2 -28.9	N	22 10.3 +06.4	01			
02	208 07.0 +00.2	S	00 07.5 -01.0	208 59.4 -00.3	S	02 02.8 -01.3	136 21.3 -29.0	N	22 16.7 +06.3	02			
03	223 07.2 +00.2	S	00 06.5 -00.9	223 59.1 -00.4	S	02 01.5 -01.2	150 52.3 -29.0	N	22 23.0 +06.2	03			
04	238 07.4 +00.2	S	00 05.6 -01.0	238 58.7 -00.4	S	02 00.3 -01.3	165 23.3 -29.1	N	22 29.2 +06.1	04			
05	253 07.6 +00.2	S	00 04.6 -01.0	253 58.3 -00.4	S	01 59.0 -01.2	179 54.2 -29.2	N	22 35.3 +06.0	05			
06	268 07.8 +00.1	S	00 03.6 -01.0	268 57.9 -00.4	S	01 57.8 -01.3	194 25.0 -29.2	N	22 41.3 +05.9	06			
07	283 07.9 +00.2	S	00 02.6 -01.0	283 57.5 -00.4	S	01 56.5 -01.2	208 55.8 -29.3	N	22 47.2 +05.8	07			
08	298 08.1 +00.2	S	00 01.6 -01.0	298 57.1 -00.4	S	01 55.3 -01.3	223 26.5 -29.3	N	22 53.0 +05.7	08			
09	313 08.3 +00.2	S	00 00.6 -01.0	313 56.7 -00.3	S	01 54.0 -01.2	237 57.2 -29.4	N	22 58.7 +05.6	09			
10	328 08.5 +00.2	N	00 00.4 +01.0	328 56.4 -00.4	S	01 52.8 -01.3	252 27.8 -29.5	N	23 04.3 +05.5	10			
11	343 08.7 +00.2	N	00 01.4 +01.0	343 56.0 -00.4	S	01 51.5 -01.2	266 58.3 -29.5	N	23 09.8 +05.4	11			
12	358 08.9 +00.1	N	00 02.4 +00.9	358 55.6 -00.4	S	01 50.3 -01.3	281 28.8 -29.6	N	23 15.2 +05.3	12			
13	13 09.0 +00.2	N	00 03.3 +01.0	13 55.2 -00.4	S	01 49.0 -01.3	295 59.2 -29.6	N	23 20.5 +05.2	13			
14	28 09.2 +00.2	N	00 04.3 +01.0	28 54.8 -00.4	S	01 47.7 -01.2	310 29.6 -29.7	N	23 25.7 +05.0	14			
15	43 09.4 +00.2	N	00 05.3 +01.0	43 54.4 -00.4	S	01 46.5 -01.3	324 59.9 -29.8	N	23 30.7 +05.0	15			
16	58 09.6 +00.2	N	00 06.3 +01.0	58 54.0 -00.3	S	01 45.2 -01.2	339 30.1 -29.8	N	23 35.7 +04.8	16			
17	73 09.8 +00.2	N	00 07.3 +01.0	73 53.7 -00.4	S	01 44.0 -01.3	354 00.3 -29.8	N	23 40.5 +04.8	17			
18	88 10.0 +00.2	N	00 08.3 +01.0	88 53.3 -00.4	S	01 42.7 -01.2	8 30.5 -30.0	N	23 45.3 +04.6	18			
19	103 10.2 +00.1	N	00 09.3 +01.0	103 52.9 -00.4	S	01 41.5 -01.3	23 00.5 -29.9	N	23 49.9 +04.6	19			
20	118 10.3 +00.2	N	00 10.3 +00.9	118 52.5 -00.4	S	01 40.2 -01.2	37 30.6 -30.1	N	23 54.5 +04.4	20			
21	133 10.5 +00.2	N	00 11.2 +01.0	133 52.1 -00.4	S	01 39.0 -01.3	52 00.5 -30.1	N	23 58.9 +04.3	21			
22	148 10.7 +00.2	N	00 12.2 +01.0	148 51.7 -00.3	S	01 37.7 -01.3	66 30.4 -30.2	N	24 03.2 +04.2	22			
23	163 10.9 +00.2	N	00 13.2 +01.0	163 51.4 -00.4	S	01 36.4 -01.2	81 00.2 -30.2	N	24 07.4 +04.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'1 16'1 16'1 16'1 16'1 16'1			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 14'8 14'8 14'8 14'9 14'9 14'9						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 54'4 54'4 54'5 54'5 54'6 54'7						
	SHA 000° 000° 360° 360° 360° 360°			SHA 001° 001° 001° 001° 000° 000°			SHA 289° 286° 284° 282° 280° 278°						
	Greenwich Culmination Time: 12:07			Greenwich Culmination Time: 12:04			Greenwich Culmination Time: 17:24						
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	110 22.5 +00.9	N	23 18.2 +00.2	214 21.6 +01.9	S	15 09.1 -00.2	224 47.9 +02.2	S	18 07.1 +00.0	00			
01	125 23.4 +00.8	N	23 18.4 +00.3	229 23.5 +02.0	S	15 08.9 -00.1	239 50.1 +02.2	S	18 07.1 -00.1	01			
02	140 24.2 +00.9	N	23 18.7 +00.2	244 25.5 +01.9	S	15 08.8 -00.2	254 52.3 +02.3	S	18 07.0 +00.0	02			
03	155 25.1 +00.9	N	23 18.9 +00.2	259 27.4 +02.0	S	15 08.6 -00.2	269 54.6 +02.2	S	18 07.0 -00.1	03			
04	170 26.0 +00.8	N	23 19.1 +00.2	274 29.4 +01.9	S	15 08.4 -00.1	284 56.8 +02.2	S	18 06.9 +00.0	04			
05	185 26.8 +00.9	N	23 19.3 +00.3	289 31.3 +02.0	S	15 08.3 -00.2	299 59.0 +02.3	S	18 06.9 -00.1	05			
06	200 27.7 +00.9	N	23 19.6 +00.2	304 33.3 +01.9	S	15 08.1 -00.2	315 01.3 +02.2	S	18 06.8 -00.1	06			
07	215 28.6 +00.9	N	23 19.8 +00.2	319 35.2 +02.0	S	15 07.9 -00.1	330 03.5 +02.2	S	18 06.7 +00.0	07			
08	230 29.5 +00.8	N	23 20.0 +00.2	334 37.2 +01.9	S	15 07.8 -00.2	345 05.7 +02.3	S	18 06.7 -00.1	08			
09	245 30.3 +00.9	N	23 20.2 +00.3	349 39.1 +02.0	S	15 07.6 -00.1	0 08.0 +02.2	S	18 06.6 +00.0	09			
10	260 31.2 +00.9	N	23 20.5 +00.2	4 41.1 +01.9	S	15 07.5 -00.2	15 10.2 +02.2	S	18 06.6 -00.1	10			
11	275 32.1 +00.8	N	23 20.7 +00.2	19 43.0 +01.9	S	15 07.3 -00.2	30 12.4 +02.3	S	18 06.5 +00.0	11			
12	290 32.9 +00.9	N	23 20.9 +00.3	34 44.9 +02.0	S	15 07.1 -00.1	45 14.7 +02.2	S	18 06.5 -00.1	12			
13	305 33.8 +00.9	N	23 21.2 +00.2	49 46.9 +01.9	S	15 07.0 -00.2	60 16.9 +02.2	S	18 06.4 -00.1	13			
14	320 34.7 +00.8	N	23 21.4 +00.2	64 48.8 +02.0	S	15 06.8 -00.2	75 19.1 +02.3	S	18 06.3 +00.0	14			
15	335 35.5 +00.9	N	23 21.6 +00.2	79 50.8 +01.9	S	15 06.6 -00.1	90 21.4 +02.2	S	18 06.3 -00.1	15			
16	350 36.4 +00.9	N	23 21.8 +00.3	94 52.7 +02.0	S	15 06.5 -00.2	105 23.6 +02.2	S	18 06.2 +00.0	16			
17	5 37.3 +00.9	N	23 22.1 +00.2	109 54.7 +01.9	S	15 06.3 -00.1	120 25.8 +02.3	S	18 06.2 -00.1	17			
18	20 38.2 +00.8	N	23 22.3 +00.2	124 56.6 +02.0	S	15 06.2 -00.2	135 28.1 +02.2	S	18 06.1 +00.0	18			
19	35 39.0 +00.9	N	23 22.5 +00.2	139 58.6 +01.9	S	15 06.0 -00.2	150 30.3 +02.2	S	18 06.1 -00.1	19			
20	50 39.9 +00.9	N	23 22.7 +00.2	155 00.5 +02.0	S	15 05.8 -00.1	165 32.5 +02.3	S	18 06.0 -00.1	20			
21	65 40.8 +00.8	N	23 22.9 +00.3	170 02.5 +01.9	S	15 05.7 -00.2	180 34.8 +02.2	S	18 05.9 +00.0	21			
22	80 41.6 +00.9	N	23 23.2 +00.2	185 04.4 +02.0	S	15 05.5 -00.2	195 37.0 +02.2	S	18 05.9 -00.1	22			
23	95 42.5 +00.9	N	23 23.4 +00.2	200 06.4 +01.9	S	15 05.3 -00.1	210 39.2 +02.3	S	18 05.8 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'0 00'0 00'0 00'0 00'0 00'0			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 293° 292° 292° 292° 292° 292°			SHA 037° 037° 037° 036° 036° 036°			SHA 047° 047° 047° 047° 047° 047°						
	Greenwich Culmination Time: 16:37			Greenwich Culmination Time: 09:41			Greenwich Culmination Time: 08:59						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 11.1 +00.2	N 00	14.2 +01.0	178 51.0 -00.4	S 01	35.2 -01.3	95 30.0 -30.2	N 24	11.4 +04.0	00			
01	193 11.3 +00.2	N 00	15.2 +01.0	193 50.6 -00.4	S 01	33.9 -01.2	109 59.8 -30.4	N 24	15.4 +03.9	01			
02	208 11.5 +00.1	N 00	16.2 +01.0	208 50.2 -00.4	S 01	32.7 -01.3	124 29.4 -30.3	N 24	19.3 +03.7	02			
03	223 11.6 +00.2	N 00	17.2 +01.0	223 49.8 -00.4	S 01	31.4 -01.2	138 59.1 -30.5	N 24	23.0 +03.6	03			
04	238 11.8 +00.2	N 00	18.2 +00.9	238 49.4 -00.3	S 01	30.2 -01.3	153 28.6 -30.5	N 24	26.6 +03.5	04			
05	253 12.0 +00.2	N 00	19.1 +01.0	253 49.1 -00.4	S 01	28.9 -01.2	167 58.1 -30.5	N 24	30.1 +03.4	05			
06	268 12.2 +00.2	N 00	20.1 +01.0	268 48.7 -00.4	S 01	27.7 -01.3	182 27.6 -30.6	N 24	33.5 +03.3	06			
07	283 12.4 +00.2	N 00	21.1 +01.0	283 48.3 -00.4	S 01	26.4 -01.3	196 57.0 -30.7	N 24	36.8 +03.1	07			
08	298 12.6 +00.2	N 00	22.1 +01.0	298 47.9 -00.4	S 01	25.1 -01.2	211 26.3 -30.7	N 24	39.9 +03.1	08			
09	313 12.8 +00.1	N 00	23.1 +01.0	313 47.5 -00.4	S 01	23.9 -01.3	225 55.6 -30.7	N 24	43.0 +02.9	09			
10	328 12.9 +00.2	N 00	24.1 +01.0	328 47.1 -00.3	S 01	22.6 -01.2	240 24.9 -30.8	N 24	45.9 +02.8	10			
11	343 13.1 +00.2	N 00	25.1 +01.0	343 46.8 -00.4	S 01	21.4 -01.3	254 54.1 -30.9	N 24	48.7 +02.6	11			
12	358 13.3 +00.2	N 00	26.1 +00.9	358 46.4 -00.4	S 01	20.1 -01.2	269 23.2 -30.9	N 24	51.3 +02.6	12			
13	13 13.5 +00.2	N 00	27.0 +01.0	13 46.0 -00.4	S 01	18.9 -01.3	283 52.3 -31.0	N 24	53.9 +02.4	13			
14	28 13.7 +00.2	N 00	28.0 +01.0	28 45.6 -00.4	S 01	17.6 -01.3	298 21.3 -31.0	N 24	56.3 +02.3	14			
15	43 13.9 +00.2	N 00	29.0 +01.0	43 45.2 -00.4	S 01	16.3 -01.2	312 50.3 -31.0	N 24	58.6 +02.2	15			
16	58 14.1 +00.1	N 00	30.0 +01.0	58 44.8 -00.3	S 01	15.1 -01.3	327 19.3 -31.1	N 25	00.8 +02.1	16			
17	73 14.2 +00.2	N 00	31.0 +01.0	73 44.5 -00.4	S 01	13.8 -01.2	341 48.2 -31.2	N 25	02.9 +01.9	17			
18	88 14.4 +00.2	N 00	32.0 +01.0	88 44.1 -00.4	S 01	12.6 -01.3	356 17.0 -31.2	N 25	04.8 +01.8	18			
19	103 14.6 +00.2	N 00	33.0 +01.0	103 43.7 -00.4	S 01	11.3 -01.2	10 45.8 -31.2	N 25	06.6 +01.7	19			
20	118 14.8 +00.2	N 00	34.0 +00.9	118 43.3 -00.4	S 01	10.1 -01.3	25 14.6 -31.3	N 25	08.3 +01.6	20			
21	133 15.0 +00.2	N 00	34.9 +01.0	133 42.9 -00.3	S 01	08.8 -01.3	39 43.3 -31.4	N 25	09.9 +01.4	21			
22	148 15.2 +00.2	N 00	35.9 +01.0	148 42.6 -00.4	S 01	07.5 -01.2	54 11.9 -31.3	N 25	11.3 +01.3	22			
23	163 15.4 +00.2	N 00	36.9 +01.0	163 42.2 -00.4	S 01	06.3 -01.3	68 40.6 -31.4	N 25	12.6 +01.2	23			
UT 02 06 10 14 18 22 SD 16'1 16'1 16'1 16'1 16'1 16'1 HP 00'1 00'1 00'1 00'1 00'1 00'1 SHA 359° 359° 359° 359° 359° 359° Greenwich Culmination Time: 12:07				UT 02 06 10 14 18 22 SD 00'1 00'1 00'1 00'1 00'1 00'1 HP 00'1 00'1 00'1 00'1 00'1 00'1 SHA 000° 360° 360° 359° 359° 359° Greenwich Culmination Time: 12:04				UT 02 06 10 14 18 22 SD 14'9 14'9 15'0 15'0 15'0 15'0 HP 54'7 54'8 54'9 55'0 55'1 55'2 SHA 276° 273° 271° 269° 267° 265° Greenwich Culmination Time: 18:15					
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	110 43.4 +00.8	N 23	23.6 +00.2	215 08.3 +02.0	S 15	05.2 -00.2	225 41.5 +02.2	S 18	05.8 -00.1	00			
01	125 44.2 +00.9	N 23	23.8 +00.3	230 10.3 +01.9	S 15	05.0 -00.1	240 43.7 +02.2	S 18	05.7 +00.0	01			
02	140 45.1 +00.9	N 23	24.1 +00.2	245 12.2 +02.0	S 15	04.9 -00.2	255 45.9 +02.3	S 18	05.7 -00.1	02			
03	155 46.0 +00.8	N 23	24.3 +00.2	260 14.2 +01.9	S 15	04.7 -00.2	270 48.2 +02.2	S 18	05.6 -00.1	03			
04	170 46.8 +00.9	N 23	24.5 +00.2	275 16.1 +02.0	S 15	04.5 -00.1	285 50.4 +02.2	S 18	05.5 +00.0	04			
05	185 47.7 +00.9	N 23	24.7 +00.3	290 18.1 +01.9	S 15	04.4 -00.2	300 52.6 +02.3	S 18	05.5 -00.1	05			
06	200 48.6 +00.8	N 23	25.0 +00.2	305 20.0 +02.0	S 15	04.2 -00.1	315 54.9 +02.2	S 18	05.4 +00.0	06			
07	215 49.4 +00.9	N 23	25.2 +00.2	320 22.0 +01.9	S 15	04.1 -00.2	330 57.1 +02.3	S 18	05.4 -00.1	07			
08	230 50.3 +00.9	N 23	25.4 +00.2	335 23.9 +02.0	S 15	03.9 -00.2	345 59.4 +02.2	S 18	05.3 +00.0	08			
09	245 51.2 +00.8	N 23	25.6 +00.2	350 25.9 +01.9	S 15	03.7 -00.1	1 01.6 +02.2	S 18	05.3 -00.1	09			
10	260 52.0 +00.9	N 23	25.8 +00.3	5 27.8 +02.0	S 15	03.6 -00.2	16 03.8 +02.3	S 18	05.2 -00.1	10			
11	275 52.9 +00.9	N 23	26.1 +00.2	20 29.8 +01.9	S 15	03.4 -00.2	31 06.1 +02.2	S 18	05.1 +00.0	11			
12	290 53.8 +00.8	N 23	26.3 +00.2	35 31.7 +01.9	S 15	03.2 -00.1	46 08.3 +02.2	S 18	05.1 -00.1	12			
13	305 54.6 +00.9	N 23	26.5 +00.2	50 33.6 +02.0	S 15	03.1 -00.2	61 10.5 +02.3	S 18	05.0 +00.0	13			
14	320 55.5 +00.9	N 23	26.7 +00.2	65 35.6 +01.9	S 15	02.9 -00.1	76 12.8 +02.2	S 18	05.0 -00.1	14			
15	335 56.4 +00.8	N 23	26.9 +00.3	80 37.5 +02.0	S 15	02.8 -00.2	91 15.0 +02.2	S 18	04.9 +00.0	15			
16	350 57.2 +00.9	N 23	27.2 +00.2	95 39.5 +01.9	S 15	02.6 -00.2	106 17.2 +02.3	S 18	04.9 -00.1	16			
17	5 58.1 +00.9	N 23	27.4 +00.2	110 41.4 +02.0	S 15	02.4 -00.1	121 19.5 +02.2	S 18	04.8 +00.0	17			
18	20 59.0 +00.8	N 23	27.6 +00.2	125 43.4 +01.9	S 15	02.3 -00.2	136 21.7 +02.3	S 18	04.8 -00.1	18			
19	35 59.8 +00.9	N 23	27.8 +00.2	140 45.3 +02.0	S 15	02.1 -00.1	151 24.0 +02.2	S 18	04.7 -00.1	19			
20	51 00.7 +00.9	N 23	28.0 +00.2	155 47.3 +02.0	S 15	02.0 -00.2	166 26.2 +02.2	S 18	04.6 +00.0	20			
21	66 01.6 +00.8	N 23	28.2 +00.3	170 49.3 +01.9	S 15	01.8 -00.2	181 28.4 +02.3	S 18	04.6 -00.1	21			
22	81 02.4 +00.9	N 23	28.5 +00.2	185 51.2 +02.0	S 15	01.6 -00.1	196 30.7 +02.2	S 18	04.5 +00.0	22			
23	96 03.3 +00.9	N 23	28.7 +00.2	200 53.2 +01.9	S 15	01.5 -00.2	211 32.9 +02.2	S 18	04.5 -00.1	23			
UT 02 06 10 14 18 22 SD 00'0 00'0 00'0 00'0 00'0 00'0 HP 00'1 00'1 00'1 00'1 00'1 00'1 SHA 292° 292° 292° 292° 292° 291° Greenwich Culmination Time: 16:36				UT 02 06 10 14 18 22 SD 00'3 00'3 00'3 00'3 00'3 00'3 HP 00'0 00'0 00'0 00'0 00'0 00'0 SHA 036° 036° 036° 036° 036° 036° Greenwich Culmination Time: 09:38				UT 02 06 10 14 18 22 SD 00'1 00'1 00'1 00'1 00'1 00'1 HP 00'0 00'0 00'0 00'0 00'0 00'0 SHA 047° 047° 047° 047° 047° 047° Greenwich Culmination Time: 08:55					

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 15.6 +00.1	N 00	37.9 +01.0	178 41.8 -00.4	S 01	05.0 -01.2	83 09.2 -31.5	N 25	13.8 +01.0	00			
01	193 15.7 +00.2	N 00	38.9 +01.0	193 41.4 -00.4	S 01	03.8 -01.3	97 37.7 -31.5	N 25	14.8 +01.0	01			
02	208 15.9 +00.2	N 00	39.9 +01.0	208 41.0 -00.4	S 01	02.5 -01.2	112 06.2 -31.6	N 25	15.8 +00.8	02			
03	223 16.1 +00.2	N 00	40.9 +01.0	223 40.6 -00.3	S 01	01.3 -01.3	126 34.6 -31.5	N 25	16.6 +00.6	03			
04	238 16.3 +00.2	N 00	41.9 +00.9	238 40.3 -00.4	S 00	60.0 -01.3	141 03.1 -31.7	N 25	17.2 +00.6	04			
05	253 16.5 +00.2	N 00	42.8 +01.0	253 39.9 -00.4	S 00	58.7 -01.2	155 31.4 -31.6	N 25	17.8 +00.4	05			
06	268 16.7 +00.2	N 00	43.8 +01.0	268 39.5 -00.4	S 00	57.5 -01.3	169 59.8 -31.7	N 25	18.2 +00.2	06			
07	283 16.9 +00.2	N 00	44.8 +01.0	283 39.1 -00.4	S 00	56.2 -01.2	184 28.1 -31.8	N 25	18.4 +00.2	07			
08	298 17.1 +00.1	N 00	45.8 +01.0	298 38.7 -00.3	S 00	55.0 -01.3	198 56.3 -31.7	N 25	18.6 +00.0	08			
09	313 17.2 +00.2	N 00	46.8 +01.0	313 38.4 -00.4	S 00	53.7 -01.3	213 24.6 -31.8	N 25	18.6 -00.1	09			
10	328 17.4 +00.2	N 00	47.8 +01.0	328 38.0 -00.4	S 00	52.4 -01.2	227 52.8 -31.9	N 25	18.5 -00.3	10			
11	343 17.6 +00.2	N 00	48.8 +00.9	343 37.6 -00.4	S 00	51.2 -01.3	242 20.9 -31.8	N 25	18.2 -00.4	11			
12	358 17.8 +00.2	N 00	49.7 +01.0	358 37.2 -00.4	S 00	49.9 -01.2	256 49.1 -32.0	N 25	17.8 -00.5	12			
13	13 18.0 +00.2	N 00	50.7 +01.0	13 36.8 -00.3	S 00	48.7 -01.3	271 17.1 -31.9	N 25	17.3 -00.6	13			
14	28 18.2 +00.2	N 00	51.7 +01.0	28 36.5 -00.4	S 00	47.4 -01.2	285 45.2 -32.0	N 25	16.7 -00.8	14			
15	43 18.4 +00.1	N 00	52.7 +01.0	43 36.1 -00.4	S 00	46.2 -01.3	300 13.2 -32.0	N 25	15.9 -00.9	15			
16	58 18.5 +00.2	N 00	53.7 +01.0	58 35.7 -00.4	S 00	44.9 -01.3	314 41.2 -32.0	N 25	15.0 -01.1	16			
17	73 18.7 +00.2	N 00	54.7 +01.0	73 35.3 -00.4	S 00	43.6 -01.2	329 09.2 -32.0	N 25	13.9 -01.2	17			
18	88 18.9 +00.2	N 00	55.7 +00.9	88 34.9 -00.3	S 00	42.4 -01.3	343 37.2 -32.1	N 25	12.7 -01.3	18			
19	103 19.1 +00.2	N 00	56.6 +01.0	103 34.6 -00.4	S 00	41.1 -01.2	358 05.1 -32.1	N 25	11.4 -01.5	19			
20	118 19.3 +00.2	N 00	57.6 +01.0	118 34.2 -00.4	S 00	39.9 -01.3	12 33.0 -32.1	N 25	09.9 -01.6	20			
21	133 19.5 +00.2	N 00	58.6 +01.0	133 33.8 -00.4	S 00	38.6 -01.3	27 00.9 -32.2	N 25	08.3 -01.7	21			
22	148 19.7 +00.2	N 00	59.6 +01.0	148 33.4 -00.4	S 00	37.3 -01.2	41 28.7 -32.2	N 25	06.6 -01.9	22			
23	163 19.9 +00.2	N 01	00.6 +01.0	163 33.0 -00.3	S 00	36.1 -01.3	55 56.5 -32.2	N 25	04.7 -02.0	23			
UT 02 06 10 14 18 22 SD 16'1 16'1 16'1 16'1 16'0 16'0 HP 00'1 00'1 00'1 00'1 00'1 00'1 SHA 358° 358° 358° 358° 358° 358° Greenwich Culmination Time: 12:06				UT 02 06 10 14 18 22 SD 00'1 00'1 00'1 00'1 00'1 00'1 HP 00'1 00'1 00'1 00'1 00'1 00'1 SHA 359° 359° 359° 358° 358° 358° Greenwich Culmination Time: 12:05				UT 02 06 10 14 18 22 SD 15'1 15'1 15'1 15'2 15'2 15'2 HP 55'3 55'4 55'5 55'6 55'7 55'8 SHA 262° 260° 258° 255° 253° 251° Greenwich Culmination Time: 19:07					
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	111 04.2 +00.8	N 23	28.9 +00.2	215 55.1 +02.0	S 15	01.3 -00.2	226 35.1 +02.3	S 18	04.4 +00.0	00			
01	126 05.0 +00.9	N 23	29.1 +00.2	230 57.1 +01.9	S 15	01.1 -00.1	241 37.4 +02.2	S 18	04.4 -00.1	01			
02	141 05.9 +00.8	N 23	29.3 +00.2	245 59.0 +02.0	S 15	01.0 -00.2	256 39.6 +02.3	S 18	04.3 -00.1	02			
03	156 06.7 +00.9	N 23	29.5 +00.3	261 01.0 +01.9	S 15	00.8 -00.1	271 41.9 +02.2	S 18	04.2 +00.0	03			
04	171 07.6 +00.9	N 23	29.8 +00.2	276 02.9 +02.0	S 15	00.7 -00.2	286 44.1 +02.2	S 18	04.2 -00.1	04			
05	186 08.5 +00.8	N 23	30.0 +00.2	291 04.9 +01.9	S 15	00.5 -00.2	301 46.3 +02.3	S 18	04.1 +00.0	05			
06	201 09.3 +00.9	N 23	30.2 +00.2	306 06.8 +02.0	S 15	00.3 -00.1	316 48.6 +02.2	S 18	04.1 -00.1	06			
07	216 10.2 +00.9	N 23	30.4 +00.2	321 08.8 +01.9	S 15	00.2 -00.2	331 50.8 +02.2	S 18	04.0 +00.0	07			
08	231 11.1 +00.8	N 23	30.6 +00.2	336 10.7 +02.0	S 15	00.0 -00.1	346 53.0 +02.3	S 18	04.0 -00.1	08			
09	246 11.9 +00.9	N 23	30.8 +00.2	351 12.7 +01.9	S 14	59.9 -00.2	1 55.3 +02.2	S 18	03.9 +00.0	09			
10	261 12.8 +00.8	N 23	31.0 +00.3	6 14.6 +02.0	S 14	59.7 -00.2	16 57.5 +02.3	S 18	03.9 -00.1	10			
11	276 13.6 +00.9	N 23	31.3 +00.2	21 16.6 +01.9	S 14	59.5 -00.1	31 59.8 +02.2	S 18	03.8 -00.1	11			
12	291 14.5 +00.9	N 23	31.5 +00.2	36 18.5 +02.0	S 14	59.4 -00.2	47 02.0 +02.2	S 18	03.7 +00.0	12			
13	306 15.4 +00.8	N 23	31.7 +00.2	51 20.5 +01.9	S 14	59.2 -00.1	62 04.2 +02.3	S 18	03.7 -00.1	13			
14	321 16.2 +00.9	N 23	31.9 +00.2	66 22.4 +02.0	S 14	59.1 -00.2	77 06.5 +02.2	S 18	03.6 +00.0	14			
15	336 17.1 +00.9	N 23	32.1 +00.2	81 24.4 +01.9	S 14	58.9 -00.2	92 08.7 +02.3	S 18	03.6 -00.1	15			
16	351 18.0 +00.8	N 23	32.3 +00.2	96 26.3 +02.0	S 14	58.7 -00.1	107 11.0 +02.2	S 18	03.5 +00.0	16			
17	6 18.8 +00.9	N 23	32.5 +00.3	111 28.3 +01.9	S 14	58.6 -00.2	122 13.2 +02.2	S 18	03.5 -00.1	17			
18	21 19.7 +00.8	N 23	32.8 +00.2	126 30.2 +02.0	S 14	58.4 -00.2	137 15.4 +02.3	S 18	03.4 +00.0	18			
19	36 20.5 +00.9	N 23	33.0 +00.2	141 32.2 +02.0	S 14	58.2 -00.1	152 17.7 +02.2	S 18	03.4 -00.1	19			
20	51 21.4 +00.9	N 23	33.2 +00.2	156 34.2 +01.9	S 14	58.1 -00.2	167 19.9 +02.3	S 18	03.3 -00.1	20			
21	66 22.3 +00.8	N 23	33.4 +00.2	171 36.1 +02.0	S 14	57.9 -00.1	182 22.2 +02.2	S 18	03.2 +00.0	21			
22	81 23.1 +00.9	N 23	33.6 +00.2	186 38.1 +01.9	S 14	57.8 -00.2	197 24.4 +02.2	S 18	03.2 -00.1	22			
23	96 24.0 +00.9	N 23	33.8 +00.2	201 40.0 +02.0	S 14	57.6 -00.2	212 26.6 +02.3	S 18	03.1 +00.0	23			
UT 02 06 10 14 18 22 SD 00'0 00'0 00'0 00'0 00'0 00'0 HP 00'1 00'1 00'1 00'1 00'1 00'1 SHA 291° 291° 291° 291° 291° 291° Greenwich Culmination Time: 16:34				UT 02 06 10 14 18 22 SD 00'3 00'3 00'3 00'3 00'3 00'3 HP 00'0 00'0 00'0 00'0 00'0 00'0 SHA 036° 036° 036° 036° 036° 036° Greenwich Culmination Time: 09:35				UT 02 06 10 14 18 22 SD 00'1 00'1 00'1 00'1 00'1 00'1 HP 00'0 00'0 00'0 00'0 00'0 00'0 SHA 047° 047° 047° 047° 047° 047° Greenwich Culmination Time: 08:52					

Sun					Venus					Moon					A: 31%					
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT							
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "								
00	178 20.1 +00.1		N 01 01.6 +01.0		178 32.7 -00.4	S 00 34.8 -01.2			70 24.3 -32.2	N 25 02.7 -02.1			00							
01	193 20.2 +00.2		N 01 02.6 +00.9		193 32.3 -00.4	S 00 33.6 -01.3			84 52.1 -32.2	N 25 00.6 -02.3			01							
02	208 20.4 +00.2		N 01 03.5 +01.0		208 31.9 -00.4	S 00 32.3 -01.3			99 19.9 -32.3	N 24 58.3 -02.4			02							
03	223 20.6 +00.2		N 01 04.5 +01.0		223 31.5 -00.4	S 00 31.0 -01.2			113 47.6 -32.3	N 24 55.9 -02.6			03							
04	238 20.8 +00.2		N 01 05.5 +01.0		238 31.1 -00.3	S 00 29.8 -01.3			128 15.3 -32.3	N 24 53.3 -02.7			04							
05	253 21.0 +00.2		N 01 06.5 +01.0		253 30.8 -00.4	S 00 28.5 -01.2			142 43.0 -32.3	N 24 50.6 -02.8			05							
06	268 21.2 +00.2		N 01 07.5 +01.0		268 30.4 -00.4	S 00 27.3 -01.3			157 10.7 -32.3	N 24 47.8 -02.9			06							
07	283 21.4 +00.2		N 01 08.5 +01.0		283 30.0 -00.4	S 00 26.0 -01.2			171 38.4 -32.3	N 24 44.9 -03.1			07							
08	298 21.6 +00.1		N 01 09.5 +00.9		298 29.6 -00.4	S 00 24.8 -01.3			186 06.1 -32.4	N 24 41.8 -03.3			08							
09	313 21.7 +00.2		N 01 10.4 +01.0		313 29.2 -00.3	S 00 23.5 -01.3			200 33.7 -32.4	N 24 38.5 -03.4			09							
10	328 21.9 +00.2		N 01 11.4 +01.0		328 28.9 -00.4	S 00 22.2 -01.2			215 01.3 -32.3	N 24 35.1 -03.5			10							
11	343 22.1 +00.2		N 01 12.4 +01.0		343 28.5 -00.4	S 00 21.0 -01.3			229 29.0 -32.4	N 24 31.6 -03.6			11							
12	358 22.3 +00.2		N 01 13.4 +01.0		358 28.1 -00.4	S 00 19.7 -01.2			243 56.6 -32.4	N 24 28.0 -03.8			12							
13	13 22.5 +00.2		N 01 14.4 +01.0		13 27.7 -00.3	S 00 18.5 -01.3			258 24.2 -32.4	N 24 24.2 -04.0			13							
14	28 22.7 +00.2		N 01 15.4 +01.0		28 27.4 -00.4	S 00 17.2 -01.3			272 51.8 -32.5	N 24 20.2 -04.0			14							
15	43 22.9 +00.2		N 01 16.4 +00.9		43 27.0 -00.4	S 00 15.9 -01.2			287 19.3 -32.4	N 24 16.2 -04.2			15							
16	58 23.1 +00.2		N 01 17.3 +01.0		58 26.6 -00.4	S 00 14.7 -01.3			301 46.9 -32.4	N 24 12.0 -04.4			16							
17	73 23.3 +00.1		N 01 18.3 +01.0		73 26.2 -00.4	S 00 13.4 -01.2			316 14.5 -32.4	N 24 07.6 -04.5			17							
18	88 23.4 +00.2		N 01 19.3 +01.0		88 25.8 -00.3	S 00 12.2 -01.3			330 42.1 -32.5	N 24 03.1 -04.6			18							
19	103 23.6 +00.2		N 01 20.3 +01.0		103 25.5 -00.4	S 00 10.9 -01.3			345 09.6 -32.4	N 23 58.5 -04.8			19							
20	118 23.8 +00.2		N 01 21.3 +01.0		118 25.1 -00.4	S 00 09.6 -01.2			359 37.2 -32.5	N 23 53.7 -04.9			20							
21	133 24.0 +00.2		N 01 22.3 +00.9		133 24.7 -00.4	S 00 08.4 -01.3			14 04.7 -32.4	N 23 48.8 -05.0			21							
22	148 24.2 +00.2		N 01 23.2 +01.0		148 24.3 -00.4	S 00 07.1 -01.2			28 32.3 -32.4	N 23 43.8 -05.2			22							
23	163 24.4 +00.2		N 01 24.2 +01.0		163 23.9 -00.3	S 00 05.9 -01.3			42 59.9 -32.5	N 23 38.6 -05.3			23							
UT	02	06	10	14	18	22								UT						
SD	16'0	16'0	16'0	16'0	16'0	16'0	00'1	00'1	00'1	00'1	00'1	00'1	SD	15'3	15'3	15'3	15'4	15'4	15'4	
HP	00'1	00'1	00'1	00'1	00'1	00'1	00'1	00'1	00'1	00'1	00'1	00'1	HP	56'0	56'1	56'2	56'4	56'5	56'7	
SHA	358°	357°	357°	357°	357°	357°	358°	358°	357°	357°	357°	357°	SHA	249°	246°	244°	242°	239°	237°	
Greenwich Culmination Time: 12:06							Greenwich Culmination Time: 12:06							Greenwich Culmination Time: 20:01						

Mars					Jupiter					Saturn										
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT							
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "								
00	111 24.9 +00.8		N 23 34.0 +00.2		216 42.0 +01.9	S 14 57.4 -00.1			227 28.9 +02.2	S 18 03.1 -00.1			00							
01	126 25.7 +00.9		N 23 34.2 +00.2		231 43.9 +02.0	S 14 57.3 -00.2			242 31.1 +02.3	S 18 03.0 +00.0			01							
02	141 26.6 +00.8		N 23 34.4 +00.3		246 45.9 +01.9	S 14 57.1 -00.1			257 33.4 +02.2	S 18 03.0 -00.1			02							
03	156 27.4 +00.9		N 23 34.7 +00.2		261 47.8 +02.0	S 14 57.0 -00.2			272 35.6 +02.2	S 18 02.9 +00.0			03							
04	171 28.3 +00.9		N 23 34.9 +00.2		276 49.8 +01.9	S 14 56.8 -00.2			287 37.8 +02.3	S 18 02.9 -00.1			04							
05	186 29.2 +00.8		N 23 35.1 +00.2		291 51.7 +02.0	S 14 56.6 -00.1			302 40.1 +02.2	S 18 02.8 -00.1			05							
06	201 30.0 +00.9		N 23 35.3 +00.2		306 53.7 +02.0	S 14 56.5 -00.2			317 42.3 +02.3	S 18 02.7 +00.0			06							
07	216 30.9 +00.8		N 23 35.5 +00.2		321 55.7 +01.9	S 14 56.3 -00.1			332 44.6 +02.2	S 18 02.7 -00.1			07							
08	231 31.7 +00.9		N 23 35.7 +00.2		336 57.6 +02.0	S 14 56.2 -00.2			347 46.8 +02.2	S 18 02.6 +00.0			08							
09	246 32.6 +00.8		N 23 35.9 +00.2		351 59.6 +01.9	S 14 56.0 -00.2			2 49.0 +02.3	S 18 02.6 -00.1			09							
10	261 33.4 +00.9		N 23 36.1 +00.2		7 01.5 +02.0	S 14 55.8 -00.1			17 51.3 +02.2	S 18 02.5 +00.0			10							
11	276 34.3 +00.9		N 23 36.3 +00.2		22 03.5 +01.9	S 14 55.7 -00.2			32 53.5 +02.3	S 18 02.5 -00.1			11							
12	291 35.2 +00.8		N 23 36.5 +00.2		37 05.4 +02.0	S 14 55.5 -00.1			47 55.8 +02.2	S 18 02.4 +00.0			12							
13	306 36.0 +00.9		N 23 36.7 +00.2		52 07.4 +01.9	S 14 55.4 -00.2			62 58.0 +02.3	S 18 02.4 -00.1			13							
14	321 36.9 +00.8		N 23 36.9 +00.3		67 09.3 +02.0	S 14 55.2 -00.2			78 00.3 +02.2	S 18 02.3 -00.1			14							
15	336 37.7 +00.9		N 23 37.2 +00.2		82 11.3 +02.0	S 14 55.0 -00.1			93 02.5 +02.2	S 18 02.2 +00.0			15							
16	351 38.6 +00.9		N 23 37.4 +00.2		97 13.3 +01.9	S 14 54.9 -00.2			108 04.7 +02.3	S 18 02.2 -00.1			16							
17	6 39.5 +00.8		N 23 37.6 +00.2		112 15.2 +02.0	S 14 54.7 -00.1			123 07.0 +02.2	S 18 02.1 +00.0			17							
18	21 40.3 +00.9		N 23 37.8 +00.2		127 17.2 +01.9	S 14 54.6 -00.2			138 09.2 +02.3	S 18 02.1 -00.1			18							
19	36 41.2 +00.8		N 23 38.0 +00.2		142 19.1 +02.0	S 14 54.4 -00.2			153 11.5 +02.2	S 18 02.0 +00.0			19							
20	51 42.0 +00.9		N 23 38.2 +00.2		157 21.1 +01.9	S 14 54.2 -00.1			168 13.7 +02.3	S 18 02.0 -00.1			20							
21	66 42.9 +00.9		N 23 38.4 +00.2		172 23.0 +02.0	S 14 54.1 -00.2			183 16.0 +02.2	S 18 01.9 +00.0			21							
22	81 43.8 +00.8		N 23 38.6 +00.2		187 25.0 +02.0	S 14 53.9 -00.1			198 18.2 +02.2	S 18 01.9 -00.1			22							
23	96 44.6 +00.9		N 23 38.8 +00.2		202 27.0 +01.9	S 14 53.8 -00.2			213 20.4 +02.3	S 18 01.8 +00.0			23							
UT	02	06	10	14	18	22								UT						
SD	00'0	00'0	00'0	00'0	00'0	00'0	00'3	00'3	00'3	00'3	00'3	00'3	SD	00'1	00'1	00'1	00'1	00'1	00'1	
HP	00'1	00'1	00'1	00'1	00'1	00'1	00'0	00'0	00'0	00'0	00'0	00'0	HP	00'0	00'0	00'0	00'0	00'0	00'0	
SHA	291°	291°	290°	290°	290°	290°	036°	036°	036°	036°	036°	036°	SHA	047°	047°	047°	047°	047°	047°	
Greenwich Culmination Time: 16:33							Greenwich Culmination Time: 09:31							Greenwich Culmination Time: 08:48						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 24.6 +00.2	N 01 25.2 +01.0	178 23.6 -00.4	S 00 04.6 -01.3	57 27.4 -32.4	N 23 33.3 -05.4	00						00
01	193 24.8 +00.1	N 01 26.2 +01.0	193 23.2 -00.4	S 00 03.3 -01.2	71 55.0 -32.5	N 23 27.9 -05.6	01						01
02	208 24.9 +00.2	N 01 27.2 +01.0	208 22.8 -00.4	S 00 02.1 -01.3	86 22.5 -32.4	N 23 22.3 -05.7	02						02
03	223 25.1 +00.2	N 01 28.2 +01.0	223 22.4 -00.3	S 00 00.8 -01.2	100 50.1 -32.5	N 23 16.6 -05.9	03						03
04	238 25.3 +00.2	N 01 29.2 +00.9	238 22.1 -00.4	N 00 00.4 +01.3	115 17.6 -32.4	N 23 10.7 -06.0	04						04
05	253 25.5 +00.2	N 01 30.1 +01.0	253 21.7 -00.4	N 00 01.7 +01.3	129 45.2 -32.4	N 23 04.7 -06.1	05						05
06	268 25.7 +00.2	N 01 31.1 +01.0	268 21.3 -00.4	N 00 03.0 +01.2	144 12.8 -32.4	N 22 58.6 -06.3	06						06
07	283 25.9 +00.2	N 01 32.1 +01.0	283 20.9 -00.4	N 00 04.2 +01.3	158 40.4 -32.5	N 22 52.3 -06.4	07						07
08	298 26.1 +00.2	N 01 33.1 +01.0	298 20.5 -00.3	N 00 05.5 +01.2	173 07.9 -32.4	N 22 45.9 -06.5	08						08
09	313 26.3 +00.2	N 01 34.1 +01.0	313 20.2 -00.4	N 00 06.7 +01.3	187 35.5 -32.4	N 22 39.4 -06.7	09						09
10	328 26.5 +00.1	N 01 35.1 +00.9	328 19.8 -00.4	N 00 08.0 +01.3	202 03.1 -32.4	N 22 32.7 -06.8	10						10
11	343 26.6 +00.2	N 01 36.0 +01.0	343 19.4 -00.4	N 00 09.3 +01.2	216 30.7 -32.3	N 22 25.9 -06.9	11						11
12	358 26.8 +00.2	N 01 37.0 +01.0	358 19.0 -00.3	N 00 10.5 +01.3	230 58.4 -32.4	N 22 19.0 -07.1	12						12
13	13 27.0 +00.2	N 01 38.0 +01.0	13 18.7 -00.4	N 00 11.8 +01.2	245 26.0 -32.4	N 22 11.9 -07.2	13						13
14	28 27.2 +00.2	N 01 39.0 +01.0	28 18.3 -00.4	N 00 13.0 +01.3	259 53.6 -32.3	N 22 04.7 -07.4	14						14
15	43 27.4 +00.2	N 01 40.0 +01.0	43 17.9 -00.4	N 00 14.3 +01.3	274 21.3 -32.4	N 21 57.3 -07.4	15						15
16	58 27.6 +00.2	N 01 41.0 +00.9	58 17.5 -00.4	N 00 15.6 +01.2	288 48.9 -32.3	N 21 49.9 -07.6	16						16
17	73 27.8 +00.2	N 01 41.9 +01.0	73 17.1 -00.3	N 00 16.8 +01.3	303 16.6 -32.3	N 21 42.3 -07.8	17						17
18	88 28.0 +00.2	N 01 42.9 +01.0	88 16.8 -00.4	N 00 18.1 +01.2	317 44.3 -32.3	N 21 34.5 -07.9	18						18
19	103 28.2 +00.1	N 01 43.9 +01.0	103 16.4 -00.4	N 00 19.3 +01.3	332 12.0 -32.3	N 21 26.6 -08.0	19						19
20	118 28.3 +00.2	N 01 44.9 +01.0	118 16.0 -00.4	N 00 20.6 +01.3	346 39.7 -32.2	N 21 18.6 -08.1	20						20
21	133 28.5 +00.2	N 01 45.9 +01.0	133 15.6 -00.3	N 00 21.9 +01.2	1 07.5 -32.3	N 21 10.5 -08.3	21						21
22	148 28.7 +00.2	N 01 46.9 +00.9	148 15.3 -00.4	N 00 23.1 +01.3	15 35.2 -32.2	N 21 02.2 -08.3	22						22
23	163 28.9 +00.2	N 01 47.8 +01.0	163 14.9 -00.4	N 00 24.4 +01.2	30 03.0 -32.3	N 20 53.9 -08.6	23						23
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'0 16'0 16'0 16'0 16'0 16'0		SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 15'5 15'5 15'6 15'6 15'6 15'7								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 56'8 56'9 57'1 57'2 57'4 57'5								
	SHA 357° 356° 356° 356° 356° 356°		SHA 357° 356° 356° 356° 356° 356°		SHA 235° 232° 230° 228° 225° 223°								
	Greenwich Culmination Time: 12:06		Greenwich Culmination Time: 12:06		Greenwich Culmination Time: 20:55								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	111 45.5 +00.8	N 23 39.0 +00.2	217 28.9 +02.0	S 14 53.6 -00.2	228 22.7 +02.2	S 18 01.8 -00.1	00						00
01	126 46.3 +00.9	N 23 39.2 +00.2	232 30.9 +01.9	S 14 53.4 -00.1	243 24.9 +02.3	S 18 01.7 -00.1	01						01
02	141 47.2 +00.8	N 23 39.4 +00.2	247 32.8 +02.0	S 14 53.3 -00.2	258 27.2 +02.2	S 18 01.6 +00.0	02						02
03	156 48.0 +00.9	N 23 39.6 +00.2	262 34.8 +01.9	S 14 53.1 -00.1	273 29.4 +02.3	S 18 01.6 -00.1	03						03
04	171 48.9 +00.8	N 23 39.8 +00.2	277 36.7 +02.0	S 14 53.0 -00.2	288 31.7 +02.2	S 18 01.5 +00.0	04						04
05	186 49.7 +00.9	N 23 40.0 +00.2	292 38.7 +02.0	S 14 52.8 -00.2	303 33.9 +02.2	S 18 01.5 -00.1	05						05
06	201 50.6 +00.9	N 23 40.2 +00.2	307 40.7 +01.9	S 14 52.6 -00.1	318 36.1 +02.3	S 18 01.4 +00.0	06						06
07	216 51.5 +00.8	N 23 40.4 +00.2	322 42.6 +02.0	S 14 52.5 -00.2	333 38.4 +02.2	S 18 01.4 -00.1	07						07
08	231 52.3 +00.9	N 23 40.6 +00.2	337 44.6 +01.9	S 14 52.3 -00.1	348 40.6 +02.3	S 18 01.3 +00.0	08						08
09	246 53.2 +00.8	N 23 40.8 +00.2	352 46.5 +02.0	S 14 52.2 -00.2	3 42.9 +02.2	S 18 01.3 -00.1	09						09
10	261 54.0 +00.9	N 23 41.0 +00.2	7 48.5 +02.0	S 14 52.0 -00.2	18 45.1 +02.3	S 18 01.2 +00.0	10						10
11	276 54.9 +00.8	N 23 41.2 +00.2	22 50.5 +01.9	S 14 51.8 -00.1	33 47.4 +02.2	S 18 01.2 -00.1	11						11
12	291 55.7 +00.9	N 23 41.4 +00.2	37 52.4 +02.0	S 14 51.7 -00.2	48 49.6 +02.2	S 18 01.1 -00.1	12						12
13	306 56.6 +00.9	N 23 41.6 +00.2	52 54.4 +01.9	S 14 51.5 -00.1	63 51.8 +02.3	S 18 01.0 +00.0	13						13
14	321 57.5 +00.8	N 23 41.8 +00.2	67 56.3 +02.0	S 14 51.4 -00.2	78 54.1 +02.2	S 18 01.0 -00.1	14						14
15	336 58.3 +00.9	N 23 42.0 +00.2	82 58.3 +01.9	S 14 51.2 -00.2	93 56.3 +02.3	S 18 00.9 +00.0	15						15
16	351 59.2 +00.8	N 23 42.2 +00.2	98 00.2 +02.0	S 14 51.0 -00.1	108 58.6 +02.2	S 18 00.9 -00.1	16						16
17	7 00.0 +00.9	N 23 42.4 +00.2	113 02.2 +02.0	S 14 50.9 -00.2	124 00.8 +02.3	S 18 00.8 +00.0	17						17
18	22 00.9 +00.8	N 23 42.6 +00.2	128 04.2 +01.9	S 14 50.7 -00.1	139 03.1 +02.2	S 18 00.8 -00.1	18						18
19	37 01.7 +00.9	N 23 42.8 +00.2	143 06.1 +02.0	S 14 50.6 -00.2	154 05.3 +02.3	S 18 00.7 +00.0	19						19
20	52 02.6 +00.8	N 23 43.0 +00.2	158 08.1 +01.9	S 14 50.4 -00.2	169 07.6 +02.2	S 18 00.7 -00.1	20						20
21	67 03.4 +00.9	N 23 43.2 +00.2	173 10.0 +02.0	S 14 50.2 -00.1	184 09.8 +02.3	S 18 00.6 +00.0	21						21
22	82 04.3 +00.8	N 23 43.4 +00.2	188 12.0 +02.0	S 14 50.1 -00.2	199 12.1 +02.2	S 18 00.6 -00.1	22						22
23	97 05.1 +00.9	N 23 43.6 +00.2	203 14.0 +01.9	S 14 49.9 -00.1	214 14.3 +02.2	S 18 00.5 -00.1	23						23
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 00'0 00'0 00'0 00'0 00'0 00'0		SD 00'3 00'3 00'3 00'3 00'3 00'3		SD 00'1 00'1 00'1 00'1 00'1 00'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0								
	SHA 290° 290° 290° 290° 290° 289°		SHA 036° 036° 036° 036° 036° 036°		SHA 047° 047° 047° 047° 047° 047°								
	Greenwich Culmination Time: 16:32		Greenwich Culmination Time: 09:28		Greenwich Culmination Time: 08:45								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 29.1 +00.2	N 01 48.8 +01.0	178 14.5 -00.4	N 00 25.6 +01.3	44 30.7 -32.2	N 20 45.3 -08.6	00						00
01	193 29.3 +00.2	N 01 49.8 +01.0	193 14.1 -00.4	N 00 26.9 +01.3	58 58.5 -32.1	N 20 36.7 -08.8	01						01
02	208 29.5 +00.2	N 01 50.8 +01.0	208 13.7 -00.3	N 00 28.2 +01.2	73 26.4 -32.2	N 20 27.9 -08.9	02						02
03	223 29.7 +00.2	N 01 51.8 +00.9	223 13.4 -00.4	N 00 29.4 +01.3	87 54.2 -32.2	N 20 19.0 -09.0	03						03
04	238 29.9 +00.2	N 01 52.7 +01.0	238 13.0 -00.4	N 00 30.7 +01.3	102 22.0 -32.1	N 20 10.0 -09.2	04						04
05	253 30.1 +00.1	N 01 53.7 +01.0	253 12.6 -00.4	N 00 32.0 +01.2	116 49.9 -32.1	N 20 00.8 -09.3	05						05
06	268 30.2 +00.2	N 01 54.7 +01.0	268 12.2 -00.3	N 00 33.2 +01.3	131 17.8 -32.1	N 19 51.5 -09.4	06						06
07	283 30.4 +00.2	N 01 55.7 +01.0	283 11.9 -00.4	N 00 34.5 +01.2	145 45.7 -32.1	N 19 42.1 -09.5	07						07
08	298 30.6 +00.2	N 01 56.7 +01.0	298 11.5 -00.4	N 00 35.7 +01.3	160 13.6 -32.0	N 19 32.6 -09.6	08						08
09	313 30.8 +00.2	N 01 57.7 +00.9	313 11.1 -00.4	N 00 37.0 +01.3	174 41.6 -32.1	N 19 23.0 -09.8	09						09
10	328 31.0 +00.2	N 01 58.6 +01.0	328 10.7 -00.3	N 00 38.3 +01.2	189 09.5 -32.0	N 19 13.2 -09.9	10						10
11	343 31.2 +00.2	N 01 59.6 +01.0	343 10.4 -00.4	N 00 39.5 +01.3	203 37.5 -32.0	N 19 03.3 -10.0	11						11
12	358 31.4 +00.2	N 02 00.6 +01.0	358 10.0 -00.4	N 00 40.8 +01.2	218 05.5 -31.9	N 18 53.3 -10.2	12						12
13	13 31.6 +00.2	N 02 01.6 +01.0	13 09.6 -00.4	N 00 42.0 +01.3	232 33.6 -32.0	N 18 43.1 -10.2	13						13
14	28 31.8 +00.1	N 02 02.6 +00.9	28 09.2 -00.4	N 00 43.3 +01.3	247 01.6 -31.9	N 18 32.9 -10.4	14						14
15	43 31.9 +00.2	N 02 03.5 +01.0	43 08.8 -00.3	N 00 44.6 +01.2	261 29.7 -31.9	N 18 22.5 -10.5	15						15
16	58 32.1 +00.2	N 02 04.5 +01.0	58 08.5 -00.4	N 00 45.8 +01.3	275 57.8 -31.9	N 18 12.0 -10.6	16						16
17	73 32.3 +00.2	N 02 05.5 +01.0	73 08.1 -00.4	N 00 47.1 +01.2	290 25.9 -31.9	N 18 01.4 -10.7	17						17
18	88 32.5 +00.2	N 02 06.5 +01.0	88 07.7 -00.4	N 00 48.3 +01.3	304 54.0 -31.8	N 17 50.7 -10.9	18						18
19	103 32.7 +00.2	N 02 07.5 +01.0	103 07.3 -00.3	N 00 49.6 +01.3	319 22.2 -31.8	N 17 39.8 -10.9	19						19
20	118 32.9 +00.2	N 02 08.5 +00.9	118 07.0 -00.4	N 00 50.9 +01.2	333 50.4 -31.8	N 17 28.9 -11.1	20						20
21	133 33.1 +00.2	N 02 09.4 +01.0	133 06.6 -00.4	N 00 52.1 +01.3	348 18.6 -31.8	N 17 17.8 -11.2	21						21
22	148 33.3 +00.2	N 02 10.4 +01.0	148 06.2 -00.4	N 00 53.4 +01.2	2 46.8 -31.7	N 17 06.6 -11.3	22						22
23	163 33.5 +00.2	N 02 11.4 +01.0	163 05.8 -00.3	N 00 54.6 +01.3	17 15.1 -31.8	N 16 55.3 -11.4	23						23
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'0 16'0 16'0 16'0 16'0 16'0		SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 15'7 15'8 15'8 15'8 15'9 15'9								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 57'7 57'9 58'0 58'2 58'3 58'5								
	SHA 356° 356° 355° 355° 355° 355°		SHA 355° 355° 355° 355° 355° 355°		SHA 221° 218° 216° 214° 211° 209°								
	Greenwich Culmination Time: 12:05		Greenwich Culmination Time: 12:07		Greenwich Culmination Time: 21:48								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	112 06.0 +00.9	N 23 43.8 +00.2	218 15.9 +02.0	S 14 49.8 -00.2	229 16.5 +02.3	S 18 00.4 +00.0	00						00
01	127 06.9 +00.8	N 23 44.0 +00.2	233 17.9 +02.0	S 14 49.6 -00.2	244 18.8 +02.2	S 18 00.4 -00.1	01						01
02	142 07.7 +00.9	N 23 44.2 +00.2	248 19.9 +01.9	S 14 49.4 -00.1	259 21.0 +02.3	S 18 00.3 +00.0	02						02
03	157 08.6 +00.8	N 23 44.4 +00.2	263 21.8 +02.0	S 14 49.3 -00.2	274 23.3 +02.2	S 18 00.3 -00.1	03						03
04	172 09.4 +00.9	N 23 44.6 +00.2	278 23.8 +01.9	S 14 49.1 -00.1	289 25.5 +02.3	S 18 00.2 +00.0	04						04
05	187 10.3 +00.8	N 23 44.8 +00.2	293 25.7 +02.0	S 14 49.0 -00.2	304 27.8 +02.2	S 18 00.2 -00.1	05						05
06	202 11.1 +00.9	N 23 45.0 +00.2	308 27.7 +02.0	S 14 48.8 -00.2	319 30.0 +02.3	S 18 00.1 +00.0	06						06
07	217 12.0 +00.8	N 23 45.2 +00.2	323 29.7 +01.9	S 14 48.6 -00.1	334 32.3 +02.2	S 18 00.1 -00.1	07						07
08	232 12.8 +00.9	N 23 45.4 +00.2	338 31.6 +02.0	S 14 48.5 -00.2	349 34.5 +02.3	S 18 00.0 +00.0	08						08
09	247 13.7 +00.8	N 23 45.6 +00.2	353 33.6 +01.9	S 14 48.3 -00.1	4 36.8 +02.2	S 17 60.0 -00.1	09						09
10	262 14.5 +00.9	N 23 45.8 +00.2	8 35.5 +02.0	S 14 48.2 -00.2	19 39.0 +02.3	S 17 59.9 +00.0	10						10
11	277 15.4 +00.8	N 23 46.0 +00.2	23 37.5 +02.0	S 14 48.0 -00.1	34 41.3 +02.2	S 17 59.9 -00.1	11						11
12	292 16.2 +00.9	N 23 46.2 +00.2	38 39.5 +01.9	S 14 47.9 -00.2	49 43.5 +02.3	S 17 59.8 -00.1	12						12
13	307 17.1 +00.8	N 23 46.4 +00.2	53 41.4 +02.0	S 14 47.7 -00.2	64 45.8 +02.2	S 17 59.7 +00.0	13						13
14	322 17.9 +00.9	N 23 46.6 +00.2	68 43.4 +02.0	S 14 47.5 -00.1	79 48.0 +02.2	S 17 59.7 -00.1	14						14
15	337 18.8 +00.8	N 23 46.8 +00.2	83 45.4 +01.9	S 14 47.4 -00.2	94 50.2 +02.3	S 17 59.6 +00.0	15						15
16	352 19.6 +00.9	N 23 47.0 +00.2	98 47.3 +02.0	S 14 47.2 -00.1	109 52.5 +02.2	S 17 59.6 -00.1	16						16
17	7 20.5 +00.8	N 23 47.2 +00.1	113 49.3 +01.9	S 14 47.1 -00.2	124 54.7 +02.3	S 17 59.5 +00.0	17						17
18	22 21.3 +00.9	N 23 47.3 +00.2	128 51.2 +02.0	S 14 46.9 -00.2	139 57.0 +02.2	S 17 59.5 -00.1	18						18
19	37 22.2 +00.9	N 23 47.5 +00.2	143 53.2 +02.0	S 14 46.7 -00.1	154 59.2 +02.3	S 17 59.4 +00.0	19						19
20	52 23.1 +00.8	N 23 47.7 +00.2	158 55.2 +01.9	S 14 46.6 -00.2	170 01.5 +02.2	S 17 59.4 -00.1	20						20
21	67 23.9 +00.9	N 23 47.9 +00.2	173 57.1 +02.0	S 14 46.4 -00.1	185 03.7 +02.3	S 17 59.3 +00.0	21						21
22	82 24.8 +00.8	N 23 48.1 +00.2	188 59.1 +02.0	S 14 46.3 -00.2	200 06.0 +02.2	S 17 59.3 -00.1	22						22
23	97 25.6 +00.9	N 23 48.3 +00.2	204 01.1 +01.9	S 14 46.1 -00.2	215 08.2 +02.3	S 17 59.2 +00.0	23						23
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 00'0 00'0 00'0 00'0 00'0 00'0		SD 00'3 00'3 00'3 00'3 00'3 00'3		SD 00'1 00'1 00'1 00'1 00'1 00'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0								
	SHA 289° 289° 289° 289° 289° 289°		SHA 036° 036° 036° 035° 035° 035°		SHA 047° 047° 047° 047° 047° 047°								
	Greenwich Culmination Time: 16:30		Greenwich Culmination Time: 09:25		Greenwich Culmination Time: 08:41								

Sun					Venus					Moon					A: 42%					
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT							
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "								
00	178 33.7 +00.1		N 02 12.4 +01.0		178 05.5 -00.4		N 00 55.9 +01.3		31 43.3 -31.7		N 16 43.9 -11.5		00							
01	193 33.8 +00.2		N 02 13.4 +00.9		193 05.1 -00.4		N 00 57.2 +01.2		46 11.6 -31.7		N 16 32.4 -11.6		01							
02	208 34.0 +00.2		N 02 14.3 +01.0		208 04.7 -00.4		N 00 58.4 +01.3		60 39.9 -31.6		N 16 20.8 -11.7		02							
03	223 34.2 +00.2		N 02 15.3 +01.0		223 04.3 -00.4		N 00 59.7 +01.2		75 08.3 -31.7		N 16 09.1 -11.9		03							
04	238 34.4 +00.2		N 02 16.3 +01.0		238 03.9 -00.3		N 01 00.9 +01.3		89 36.6 -31.6		N 15 57.2 -11.9		04							
05	253 34.6 +00.2		N 02 17.3 +01.0		253 03.6 -00.4		N 01 02.2 +01.3		104 05.0 -31.6		N 15 45.3 -12.0		05							
06	268 34.8 +00.2		N 02 18.3 +00.9		268 03.2 -00.4		N 01 03.5 +01.2		118 33.4 -31.5		N 15 33.3 -12.2		06							
07	283 35.0 +00.2		N 02 19.2 +01.0		283 02.8 -00.4		N 01 04.7 +01.3		133 01.9 -31.6		N 15 21.1 -12.2		07							
08	298 35.2 +00.2		N 02 20.2 +01.0		298 02.4 -00.3		N 01 06.0 +01.2		147 30.3 -31.5		N 15 08.9 -12.4		08							
09	313 35.4 +00.1		N 02 21.2 +01.0		313 02.1 -00.4		N 01 07.2 +01.3		161 58.8 -31.5		N 14 56.5 -12.4		09							
10	328 35.5 +00.2		N 02 22.2 +01.0		328 01.7 -00.4		N 01 08.5 +01.3		176 27.3 -31.5		N 14 44.1 -12.6		10							
11	343 35.7 +00.2		N 02 23.2 +00.9		343 01.3 -00.4		N 01 09.8 +01.2		190 55.8 -31.5		N 14 31.5 -12.6		11							
12	358 35.9 +00.2		N 02 24.1 +01.0		358 00.9 -00.3		N 01 11.0 +01.3		205 24.3 -31.4		N 14 18.9 -12.8		12							
13	13 36.1 +00.2		N 02 25.1 +01.0		13 00.6 -00.4		N 01 12.3 +01.2		219 52.9 -31.5		N 14 06.1 -12.8		13							
14	28 36.3 +00.2		N 02 26.1 +01.0		28 00.2 -00.4		N 01 13.5 +01.3		234 21.4 -31.4		N 13 53.3 -13.0		14							
15	43 36.5 +00.2		N 02 27.1 +01.0		42 59.8 -00.4		N 01 14.8 +01.3		248 50.0 -31.4		N 13 40.3 -13.0		15							
16	58 36.7 +00.2		N 02 28.1 +00.9		57 59.4 -00.4		N 01 16.1 +01.2		263 18.6 -31.3		N 13 27.3 -13.1		16							
17	73 36.9 +00.2		N 02 29.0 +01.0		72 59.0 -00.3		N 01 17.3 +01.3		277 47.3 -31.4		N 13 14.2 -13.2		17							
18	88 37.1 +00.2		N 02 30.0 +01.0		87 58.7 -00.4		N 01 18.6 +01.2		292 15.9 -31.3		N 13 01.0 -13.3		18							
19	103 37.3 +00.1		N 02 31.0 +01.0		102 58.3 -00.4		N 01 19.8 +01.3		306 44.6 -31.3		N 12 47.7 -13.4		19							
20	118 37.4 +00.2		N 02 32.0 +01.0		117 57.9 -00.4		N 01 21.1 +01.3		321 13.3 -31.3		N 12 34.3 -13.5		20							
21	133 37.6 +00.2		N 02 33.0 +00.9		132 57.5 -00.3		N 01 22.4 +01.2		335 42.0 -31.3		N 12 20.8 -13.6		21							
22	148 37.8 +00.2		N 02 33.9 +01.0		147 57.2 -00.4		N 01 23.6 +01.3		350 10.7 -31.2		N 12 07.2 -13.6		22							
23	163 38.0 +00.2		N 02 34.9 +01.0		162 56.8 -00.4		N 01 24.9 +01.2		4 39.5 -31.3		N 11 53.6 -13.7		23							
UT	02	06	10	14	18	22			UT	02	06	10	14	18	22					
SD	16'0	16'0	16'0	16'0	16'0	16'0			SD	16'0	16'0	16'1	16'1	16'1	16'2					
HP	00'1	00'1	00'1	00'1	00'1	00'1			HP	58'6	58'8	58'9	59'1	59'2	59'3					
SHA	355°	355°	355°	354°	354°	354°			SHA	207°	205°	202°	200°	198°	196°					
Greenwich Culmination Time: 12:05							Greenwich Culmination Time: 12:07							Greenwich Culmination Time: 22:40						

Mars					Jupiter					Saturn										
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT							
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "								
00	112 26.5 +00.8		N 23 48.5 +00.2		219 03.0 +02.0		S 14 45.9 -00.1		230 10.5 +02.2		S 17 59.2 -00.1		00							
01	127 27.3 +00.9		N 23 48.7 +00.2		234 05.0 +02.0		S 14 45.8 -00.2		245 12.7 +02.3		S 17 59.1 +00.0		01							
02	142 28.2 +00.8		N 23 48.9 +00.2		249 07.0 +01.9		S 14 45.6 -00.1		260 15.0 +02.2		S 17 59.1 -00.1		02							
03	157 29.0 +00.9		N 23 49.1 +00.2		264 08.9 +02.0		S 14 45.5 -00.2		275 17.2 +02.3		S 17 59.0 -00.1		03							
04	172 29.9 +00.8		N 23 49.3 +00.2		279 10.9 +01.9		S 14 45.3 -00.1		290 19.5 +02.2		S 17 58.9 +00.0		04							
05	187 30.7 +00.9		N 23 49.5 +00.1		294 12.8 +02.0		S 14 45.2 -00.2		305 21.7 +02.3		S 17 58.9 -00.1		05							
06	202 31.6 +00.8		N 23 49.6 +00.2		309 14.8 +02.0		S 14 45.0 -00.2		320 24.0 +02.2		S 17 58.8 +00.0		06							
07	217 32.4 +00.9		N 23 49.8 +00.2		324 16.8 +01.9		S 14 44.8 -00.1		335 26.2 +02.3		S 17 58.8 -00.1		07							
08	232 33.3 +00.8		N 23 50.0 +00.2		339 18.7 +02.0		S 14 44.7 -00.2		350 28.5 +02.2		S 17 58.7 +00.0		08							
09	247 34.1 +00.9		N 23 50.2 +00.2		354 20.7 +02.0		S 14 44.5 -00.1		5 30.7 +02.3		S 17 58.7 -00.1		09							
10	262 35.0 +00.8		N 23 50.4 +00.2		9 22.7 +01.9		S 14 44.4 -00.2		20 33.0 +02.2		S 17 58.6 +00.0		10							
11	277 35.8 +00.9		N 23 50.6 +00.2		24 24.6 +02.0		S 14 44.2 -00.2		35 35.2 +02.3		S 17 58.6 -00.1		11							
12	292 36.7 +00.8		N 23 50.8 +00.2		39 26.6 +02.0		S 14 44.0 -00.1		50 37.5 +02.2		S 17 58.5 +00.0		12							
13	307 37.5 +00.9		N 23 51.0 +00.2		54 28.6 +01.9		S 14 43.9 -00.2		65 39.7 +02.3		S 17 58.5 -00.1		13							
14	322 38.4 +00.8		N 23 51.2 +00.1		69 30.5 +02.0		S 14 43.7 -00.1		80 42.0 +02.2		S 17 58.4 +00.0		14							
15	337 39.2 +00.9		N 23 51.3 +00.2		84 32.5 +02.0		S 14 43.6 -00.2		95 44.2 +02.3		S 17 58.4 -00.1		15							
16	352 40.1 +00.8		N 23 51.5 +00.2		99 34.5 +01.9		S 14 43.4 -00.2		110 46.5 +02.2		S 17 58.3 +00.0		16							
17	7 40.9 +00.8		N 23 51.7 +00.2		114 36.4 +02.0		S 14 43.2 -00.1		125 48.7 +02.3		S 17 58.3 -00.1		17							
18	22 41.7 +00.9		N 23 51.9 +00.2		129 38.4 +02.0		S 14 43.1 -00.2		140 51.0 +02.2		S 17 58.2 -00.1		18							
19	37 42.6 +00.8		N 23 52.1 +00.2		144 40.4 +01.9		S 14 42.9 -00.1		155 53.2 +02.3		S 17 58.1 +00.0		19							
20	52 43.4 +00.9		N 23 52.3 +00.2		159 42.3 +02.0		S 14 42.8 -00.2		170 55.5 +02.2		S 17 58.1 -00.1		20							
21	67 44.3 +00.8		N 23 52.5 +00.2		174 44.3 +02.0		S 14 42.6 -00.1		185 57.7 +02.3		S 17 58.0 +00.0		21							
22	82 45.1 +00.9		N 23 52.7 +00.1		189 46.3 +01.9		S 14 42.5 -00.2		200 60.0 +02.2		S 17 58.0 -00.1		22							
23	97 46.0 +00.8		N 23 52.8 +00.2		204 48.2 +02.0		S 14 42.3 -00.2		216 02.2 +02.3		S 17 57.9 +00.0		23							
UT	02	06	10	14	18	22			UT	02	06	10	14	18	22					
SD	00'0	00'0	00'0	00'0	00'0	00'0			SD	00'1	00'1	00'1	00'1	00'1	00'1					
HP	00'1	00'1	00'1	00'1	00'1	00'1			HP	00'0	00'0	00'0	00'0	00'0	00'0					
SHA	289°	289°	289°	288°	288°	288°			SHA	047°	046°	046°	046°	046°	046°					
Greenwich Culmination Time: 16:29							Greenwich Culmination Time: 09:22							Greenwich Culmination Time: 08:38						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 38.2 +00.2	N 02 35.9 +01.0	177 56.4 -00.4	N 01 26.1 +01.3	19 08.2 -31.2	N 11 39.9 -13.9	00						
01	193 38.4 +00.2	N 02 36.9 +00.9	192 56.0 -00.3	N 01 27.4 +01.3	33 37.0 -31.2	N 11 26.0 -13.8	01						
02	208 38.6 +00.2	N 02 37.8 +01.0	207 55.7 -00.4	N 01 28.7 +01.2	48 05.8 -31.2	N 11 12.2 -14.0	02						
03	223 38.8 +00.2	N 02 38.8 +01.0	222 55.3 -00.4	N 01 29.9 +01.3	62 34.6 -31.2	N 10 58.2 -14.1	03						
04	238 39.0 +00.2	N 02 39.8 +01.0	237 54.9 -00.4	N 01 31.2 +01.2	77 03.4 -31.2	N 10 44.1 -14.1	04						
05	253 39.2 +00.1	N 02 40.8 +01.0	252 54.5 -00.4	N 01 32.4 +01.3	91 32.2 -31.1	N 10 30.0 -14.2	05						
06	268 39.3 +00.2	N 02 41.8 +00.9	267 54.1 -00.3	N 01 33.7 +01.3	106 01.1 -31.2	N 10 15.8 -14.3	06						
07	283 39.5 +00.2	N 02 42.7 +01.0	282 53.8 -00.4	N 01 35.0 +01.2	120 29.9 -31.1	N 10 01.5 -14.3	07						
08	298 39.7 +00.2	N 02 43.7 +01.0	297 53.4 -00.4	N 01 36.2 +01.3	134 58.8 -31.1	N 09 47.2 -14.4	08						
09	313 39.9 +00.2	N 02 44.7 +01.0	312 53.0 -00.4	N 01 37.5 +01.2	149 27.7 -31.1	N 09 32.8 -14.5	09						
10	328 40.1 +00.2	N 02 45.7 +00.9	327 52.6 -00.3	N 01 38.7 +01.3	163 56.6 -31.1	N 09 18.3 -14.6	10						
11	343 40.3 +00.2	N 02 46.6 +01.0	342 52.3 -00.4	N 01 40.0 +01.2	178 25.5 -31.1	N 09 03.7 -14.6	11						
12	358 40.5 +00.2	N 02 47.6 +01.0	357 51.9 -00.4	N 01 41.2 +01.3	192 54.4 -31.0	N 08 49.1 -14.7	12						
13	13 40.7 +00.2	N 02 48.6 +01.0	12 51.5 -00.4	N 01 42.5 +01.3	207 23.4 -31.1	N 08 34.4 -14.8	13						
14	28 40.9 +00.2	N 02 49.6 +01.0	27 51.1 -00.3	N 01 43.8 +01.2	221 52.3 -31.0	N 08 19.6 -14.8	14						
15	43 41.1 +00.1	N 02 50.6 +00.9	42 50.8 -00.4	N 01 45.0 +01.3	236 21.3 -31.1	N 08 04.8 -14.8	15						
16	58 41.2 +00.2	N 02 51.5 +01.0	57 50.4 -00.4	N 01 46.3 +01.2	250 50.2 -31.0	N 07 50.0 -15.0	16						
17	73 41.4 +00.2	N 02 52.5 +01.0	72 50.0 -00.4	N 01 47.5 +01.3	265 19.2 -31.1	N 07 35.0 -15.0	17						
18	88 41.6 +00.2	N 02 53.5 +01.0	87 49.6 -00.4	N 01 48.8 +01.3	279 48.1 -31.0	N 07 20.0 -15.0	18						
19	103 41.8 +00.2	N 02 54.5 +00.9	102 49.2 -00.3	N 01 50.1 +01.2	294 17.1 -31.0	N 07 05.0 -15.1	19						
20	118 42.0 +00.2	N 02 55.4 +01.0	117 48.9 -00.4	N 01 51.3 +01.3	308 46.1 -31.0	N 06 49.9 -15.2	20						
21	133 42.2 +00.2	N 02 56.4 +01.0	132 48.5 -00.4	N 01 52.6 +01.2	323 15.1 -31.0	N 06 34.7 -15.2	21						
22	148 42.4 +00.2	N 02 57.4 +01.0	147 48.1 -00.4	N 01 53.8 +01.3	337 44.1 -31.1	N 06 19.5 -15.2	22						
23	163 42.6 +00.2	N 02 58.4 +00.9	162 47.7 -00.3	N 01 55.1 +01.3	352 13.0 -31.0	N 06 04.3 -15.3	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'0 16'0 16'0 16'0 16'0 16'0		SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 16'2 16'2 16'3 16'3 16'3 16'4								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 59'5 59'6 59'7 59'8 59'9 60'1								
	SHA 354° 354° 354° 353° 353° 353°		SHA 353° 353° 353° 353° 352° 352°		SHA 193° 191° 189° 187° 184° 182°								
	Greenwich Culmination Time: 12:05		Greenwich Culmination Time: 12:08		Greenwich Culmination Time: 23:32								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	112 46.8 +00.9	N 23 53.0 +00.2	219 50.2 +02.0	S 14 42.1 -00.1	231 04.5 +02.2	S 17 57.9 -00.1	00						
01	127 47.7 +00.8	N 23 53.2 +00.2	234 52.2 +01.9	S 14 42.0 -00.2	246 06.7 +02.3	S 17 57.8 +00.0	01						
02	142 48.5 +00.9	N 23 53.4 +00.2	249 54.1 +02.0	S 14 41.8 -00.1	261 09.0 +02.2	S 17 57.8 -00.1	02						
03	157 49.4 +00.8	N 23 53.6 +00.2	264 56.1 +02.0	S 14 41.7 -00.2	276 11.2 +02.3	S 17 57.7 +00.0	03						
04	172 50.2 +00.9	N 23 53.8 +00.1	279 58.1 +01.9	S 14 41.5 -00.1	291 13.5 +02.2	S 17 57.7 -00.1	04						
05	187 51.1 +00.8	N 23 53.9 +00.2	295 00.0 +02.0	S 14 41.4 -00.2	306 15.7 +02.3	S 17 57.6 +00.0	05						
06	202 51.9 +00.9	N 23 54.1 +00.2	310 02.0 +02.0	S 14 41.2 -00.2	321 18.0 +02.2	S 17 57.6 -00.1	06						
07	217 52.8 +00.8	N 23 54.3 +00.2	325 04.0 +01.9	S 14 41.0 -00.1	336 20.2 +02.3	S 17 57.5 +00.0	07						
08	232 53.6 +00.9	N 23 54.5 +00.2	340 05.9 +02.0	S 14 40.9 -00.2	351 22.5 +02.3	S 17 57.5 -00.1	08						
09	247 54.5 +00.8	N 23 54.7 +00.2	355 07.9 +02.0	S 14 40.7 -00.1	6 24.8 +02.2	S 17 57.4 +00.0	09						
10	262 55.3 +00.9	N 23 54.9 +00.1	10 09.9 +02.0	S 14 40.6 -00.2	21 27.0 +02.3	S 17 57.4 -00.1	10						
11	277 56.2 +00.8	N 23 55.0 +00.2	25 11.9 +01.9	S 14 40.4 -00.2	36 29.3 +02.2	S 17 57.3 +00.0	11						
12	292 57.0 +00.8	N 23 55.2 +00.2	40 13.8 +02.0	S 14 40.2 -00.1	51 31.5 +02.3	S 17 57.3 -00.1	12						
13	307 57.8 +00.9	N 23 55.4 +00.2	55 15.8 +02.0	S 14 40.1 -00.2	66 33.8 +02.2	S 17 57.2 +00.0	13						
14	322 58.7 +00.8	N 23 55.6 +00.2	70 17.8 +01.9	S 14 39.9 -00.1	81 36.0 +02.3	S 17 57.2 -00.1	14						
15	337 59.5 +00.9	N 23 55.8 +00.2	85 19.7 +02.0	S 14 39.8 -00.2	96 38.3 +02.2	S 17 57.1 -00.1	15						
16	353 00.4 +00.8	N 23 56.0 +00.1	100 21.7 +02.0	S 14 39.6 -00.1	111 40.5 +02.3	S 17 57.0 +00.0	16						
17	8 01.2 +00.9	N 23 56.1 +00.2	115 23.7 +01.9	S 14 39.5 -00.2	126 42.8 +02.2	S 17 57.0 -00.1	17						
18	23 02.1 +00.8	N 23 56.3 +00.2	130 25.6 +02.0	S 14 39.3 -00.2	141 45.0 +02.3	S 17 56.9 +00.0	18						
19	38 02.9 +00.9	N 23 56.5 +00.2	145 27.6 +02.0	S 14 39.1 -00.1	156 47.3 +02.2	S 17 56.9 -00.1	19						
20	53 03.8 +00.8	N 23 56.7 +00.2	160 29.6 +02.0	S 14 39.0 -00.2	171 49.5 +02.3	S 17 56.8 +00.0	20						
21	68 04.6 +00.9	N 23 56.9 +00.1	175 31.6 +01.9	S 14 38.8 -00.1	186 51.8 +02.2	S 17 56.8 -00.1	21						
22	83 05.5 +00.8	N 23 57.0 +00.2	190 33.5 +02.0	S 14 38.7 -00.2	201 54.0 +02.3	S 17 56.7 +00.0	22						
23	98 06.3 +00.8	N 23 57.2 +00.2	205 35.5 +02.0	S 14 38.5 -00.1	216 56.3 +02.3	S 17 56.7 -00.1	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 00'0 00'0 00'0 00'0 00'0 00'0		SD 00'3 00'3 00'3 00'3 00'3 00'3		SD 00'1 00'1 00'1 00'1 00'1 00'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0								
	SHA 288° 288° 288° 288° 288° 288°		SHA 035° 035° 035° 035° 035° 035°		SHA 046° 046° 046° 046° 046° 046°								
	Greenwich Culmination Time: 16:27		Greenwich Culmination Time: 09:19		Greenwich Culmination Time: 08:34								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 42.8 +00.1	N 02 59.3 +01.0	177 47.4 -00.4	N 01 56.4 +01.2	6 42.0 -31.0	N 05 49.0 -15.4	00						
01	193 42.9 +00.2	N 03 00.3 +01.0	192 47.0 -00.4	N 01 57.6 +01.3	21 11.0 -31.0	N 05 33.6 -15.4	01						
02	208 43.1 +00.2	N 03 01.3 +01.0	207 46.6 -00.4	N 01 58.9 +01.2	35 40.0 -31.0	N 05 18.2 -15.4	02						
03	223 43.3 +00.2	N 03 02.3 +01.0	222 46.2 -00.4	N 02 00.1 +01.3	50 09.0 -31.0	N 05 02.8 -15.5	03						
04	238 43.5 +00.2	N 03 03.3 +00.9	237 45.8 -00.3	N 02 01.4 +01.2	64 38.0 -31.0	N 04 47.3 -15.5	04						
05	253 43.7 +00.2	N 03 04.2 +01.0	252 45.5 -00.4	N 02 02.6 +01.3	79 07.0 -31.0	N 04 31.8 -15.6	05						
06	268 43.9 +00.2	N 03 05.2 +01.0	267 45.1 -00.4	N 02 03.9 +01.3	93 36.0 -31.0	N 04 16.2 -15.6	06						
07	283 44.1 +00.2	N 03 06.2 +01.0	282 44.7 -00.4	N 02 05.2 +01.2	108 05.0 -31.1	N 04 00.6 -15.6	07						
08	298 44.3 +00.2	N 03 07.2 +00.9	297 44.3 -00.3	N 02 06.4 +01.3	122 33.9 -31.0	N 03 45.0 -15.7	08						
09	313 44.5 +00.2	N 03 08.1 +01.0	312 44.0 -00.4	N 02 07.7 +01.2	137 02.9 -31.0	N 03 29.3 -15.7	09						
10	328 44.7 +00.1	N 03 09.1 +01.0	327 43.6 -00.4	N 02 08.9 +01.3	151 31.9 -31.0	N 03 13.6 -15.7	10						
11	343 44.8 +00.2	N 03 10.1 +01.0	342 43.2 -00.4	N 02 10.2 +01.2	166 00.9 -31.1	N 02 57.9 -15.8	11						
12	358 45.0 +00.2	N 03 11.1 +00.9	357 42.8 -00.3	N 02 11.4 +01.3	180 29.8 -31.1	N 02 42.1 -15.8	12						
13	13 45.2 +00.2	N 03 12.0 +01.0	12 42.5 -00.4	N 02 12.7 +01.3	194 58.7 -31.0	N 02 26.3 -15.8	13						
14	28 45.4 +00.2	N 03 13.0 +01.0	27 42.1 -00.4	N 02 14.0 +01.2	209 27.7 -31.1	N 02 10.5 -15.8	14						
15	43 45.6 +00.2	N 03 14.0 +01.0	42 41.7 -00.4	N 02 15.2 +01.3	223 56.6 -31.1	N 01 54.7 -15.9	15						
16	58 45.8 +00.2	N 03 15.0 +00.9	57 41.3 -00.4	N 02 16.5 +01.2	238 25.5 -31.1	N 01 38.8 -15.8	16						
17	73 46.0 +00.2	N 03 15.9 +01.0	72 40.9 -00.3	N 02 17.7 +01.3	252 54.4 -31.1	N 01 23.0 -15.9	17						
18	88 46.2 +00.2	N 03 16.9 +01.0	87 40.6 -00.4	N 02 19.0 +01.3	267 23.3 -31.1	N 01 07.1 -15.9	18						
19	103 46.4 +00.1	N 03 17.9 +00.9	102 40.2 -00.4	N 02 20.3 +01.2	281 52.2 -31.1	N 00 51.2 -15.9	19						
20	118 46.5 +00.2	N 03 18.8 +01.0	117 39.8 -00.4	N 02 21.5 +01.3	296 21.1 -31.2	N 00 35.3 -16.0	20						
21	133 46.7 +00.2	N 03 19.8 +01.0	132 39.4 -00.4	N 02 22.8 +01.2	310 49.9 -31.2	N 00 19.3 -15.9	21						
22	148 46.9 +00.2	N 03 20.8 +01.0	147 39.0 -00.3	N 02 24.0 +01.3	325 18.7 -31.2	N 00 03.4 -16.0	22						
23	163 47.1 +00.2	N 03 21.8 +00.9	162 38.7 -00.4	N 02 25.3 +01.2	339 47.5 -31.2	S 00 12.6 +15.9	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'0 16'0 16'0 16'0 16'0 16'0		SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 16'4 16'4 16'4 16'5 16'5 16'5								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 60'2 60'3 60'3 60'4 60'5 60'6								
	SHA 353° 353° 353° 353° 352° 352°		SHA 352° 352° 352° 351° 351° 351°		SHA 180° 178° 175° 173° 171° 169°								
	Greenwich Culmination Time: 12:04		Greenwich Culmination Time: 12:09		Greenwich Culmination Time: -1:00								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	113 07.1 +00.9	N 23 57.4 +00.2	220 37.5 +01.9	S 14 38.4 -00.2	231 58.6 +02.2	S 17 56.6 +00.0	00						
01	128 08.0 +00.8	N 23 57.6 +00.1	235 39.4 +02.0	S 14 38.2 -00.2	247 00.8 +02.3	S 17 56.6 -00.1	01						
02	143 08.8 +00.9	N 23 57.7 +00.2	250 41.4 +02.0	S 14 38.0 -00.1	262 03.1 +02.2	S 17 56.5 +00.0	02						
03	158 09.7 +00.8	N 23 57.9 +00.2	265 43.4 +01.9	S 14 37.9 -00.2	277 05.3 +02.3	S 17 56.5 -00.1	03						
04	173 10.5 +00.9	N 23 58.1 +00.2	280 45.3 +02.0	S 14 37.7 -00.1	292 07.6 +02.2	S 17 56.4 +00.0	04						
05	188 11.4 +00.8	N 23 58.3 +00.2	295 47.3 +02.0	S 14 37.6 -00.2	307 09.8 +02.3	S 17 56.4 -00.1	05						
06	203 12.2 +00.9	N 23 58.5 +00.1	310 49.3 +02.0	S 14 37.4 -00.1	322 12.1 +02.2	S 17 56.3 +00.0	06						
07	218 13.1 +00.8	N 23 58.6 +00.2	325 51.3 +01.9	S 14 37.3 -00.2	337 14.3 +02.3	S 17 56.3 -00.1	07						
08	233 13.9 +00.8	N 23 58.8 +00.2	340 53.2 +02.0	S 14 37.1 -00.2	352 16.6 +02.3	S 17 56.2 +00.0	08						
09	248 14.7 +00.9	N 23 59.0 +00.2	355 55.2 +02.0	S 14 36.9 -00.1	7 18.9 +02.2	S 17 56.2 -00.1	09						
10	263 15.6 +00.8	N 23 59.2 +00.1	10 57.2 +02.0	S 14 36.8 -00.2	22 21.1 +02.3	S 17 56.1 +00.0	10						
11	278 16.4 +00.9	N 23 59.3 +00.2	25 59.2 +01.9	S 14 36.6 -00.1	37 23.4 +02.2	S 17 56.1 -00.1	11						
12	293 17.3 +00.8	N 23 59.5 +00.2	41 01.1 +02.0	S 14 36.5 -00.2	52 25.6 +02.3	S 17 56.0 +00.0	12						
13	308 18.1 +00.9	N 23 59.7 +00.2	56 03.1 +02.0	S 14 36.3 -00.1	67 27.9 +02.2	S 17 56.0 -00.1	13						
14	323 19.0 +00.8	N 23 59.9 +00.1	71 05.1 +01.9	S 14 36.2 -00.2	82 30.1 +02.3	S 17 55.9 +00.0	14						
15	338 19.8 +00.8	N 24 00.0 +00.2	86 07.0 +02.0	S 14 36.0 -00.2	97 32.4 +02.2	S 17 55.9 -00.1	15						
16	353 20.6 +00.9	N 24 00.2 +00.2	101 09.0 +02.0	S 14 35.8 -00.1	112 34.6 +02.3	S 17 55.8 -00.1	16						
17	8 21.5 +00.8	N 24 00.4 +00.2	116 11.0 +02.0	S 14 35.7 -00.2	127 36.9 +02.3	S 17 55.7 +00.0	17						
18	23 22.3 +00.9	N 24 00.6 +00.1	131 13.0 +01.9	S 14 35.5 -00.1	142 39.2 +02.2	S 17 55.7 -00.1	18						
19	38 23.2 +00.8	N 24 00.7 +00.2	146 14.9 +02.0	S 14 35.4 -00.2	157 41.4 +02.3	S 17 55.6 +00.0	19						
20	53 24.0 +00.9	N 24 00.9 +00.2	161 16.9 +02.0	S 14 35.2 -00.1	172 43.7 +02.2	S 17 55.6 -00.1	20						
21	68 24.9 +00.8	N 24 01.1 +00.2	176 18.9 +02.0	S 14 35.1 -00.2	187 45.9 +02.3	S 17 55.5 +00.0	21						
22	83 25.7 +00.8	N 24 01.3 +00.1	191 20.9 +01.9	S 14 34.9 -00.2	202 48.2 +02.2	S 17 55.5 -00.1	22						
23	98 26.5 +00.9	N 24 01.4 +00.2	206 22.8 +02.0	S 14 34.7 -00.1	217 50.4 +02.3	S 17 55.4 +00.0	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 00'0 00'0 00'0 00'0 00'0 00'0		SD 00'3 00'3 00'3 00'3 00'3 00'3		SD 00'1 00'1 00'1 00'1 00'1 00'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0								
	SHA 287° 287° 287° 287° 287° 287°		SHA 035° 035° 035° 035° 035° 035°		SHA 046° 046° 046° 046° 046° 046°								
	Greenwich Culmination Time: 16:26		Greenwich Culmination Time: 09:16		Greenwich Culmination Time: 08:30								

UT	Sun				Venus				Moon				UT	
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec		
00	178 47.3 +00.2	N 03 22.7 +01.0	177 38.3 -00.4	N 02 26.5 +01.3	354 16.3 -31.2	S 00 28.5 +16.0	00	01	02	03	04	05	06	07
01	193 47.5 +00.2	N 03 23.7 +01.0	192 37.9 -00.4	N 02 27.8 +01.2	8 45.1 -31.2	S 00 44.5 +16.0	01	02	03	04	05	06	07	08
02	208 47.7 +00.2	N 03 24.7 +01.0	207 37.5 -00.3	N 02 29.0 +01.3	23 13.9 -31.3	S 01 00.5 +15.9	02	03	04	05	06	07	08	09
03	223 47.9 +00.2	N 03 25.7 +00.9	222 37.2 -00.4	N 02 30.3 +01.3	37 42.6 -31.3	S 01 16.4 +16.0	03	04	05	06	07	08	09	10
04	238 48.1 +00.1	N 03 26.6 +01.0	237 36.8 -00.4	N 02 31.6 +01.2	52 11.3 -31.3	S 01 32.4 +16.0	04	05	06	07	08	09	10	11
05	253 48.2 +00.2	N 03 27.6 +01.0	252 36.4 -00.4	N 02 32.8 +01.3	66 40.0 -31.3	S 01 48.4 +16.0	05	06	07	08	09	10	11	12
06	268 48.4 +00.2	N 03 28.6 +01.0	267 36.0 -00.4	N 02 34.1 +01.2	81 08.7 -31.4	S 02 04.4 +15.9	06	07	08	09	10	11	12	13
07	283 48.6 +00.2	N 03 29.6 +00.9	282 35.6 -00.3	N 02 35.3 +01.3	95 37.3 -31.3	S 02 20.3 +16.0	07	08	09	10	11	12	13	14
08	298 48.8 +00.2	N 03 30.5 +01.0	297 35.3 -00.4	N 02 36.6 +01.2	110 06.0 -31.5	S 02 36.3 +15.9	08	09	10	11	12	13	14	15
09	313 49.0 +00.2	N 03 31.5 +01.0	312 34.9 -00.4	N 02 37.8 +01.3	124 34.5 -31.4	S 02 52.2 +15.9	09	10	11	12	13	14	15	16
10	328 49.2 +00.2	N 03 32.5 +00.9	327 34.5 -00.4	N 02 39.1 +01.3	139 03.1 -31.4	S 03 08.1 +16.0	10	11	12	13	14	15	16	17
11	343 49.4 +00.2	N 03 33.4 +01.0	342 34.1 -00.3	N 02 40.4 +01.2	153 31.7 -31.5	S 03 24.1 +15.9	11	12	13	14	15	16	17	18
12	358 49.6 +00.2	N 03 34.4 +01.0	357 33.8 -00.4	N 02 41.6 +01.3	168 00.2 -31.6	S 03 40.0 +15.9	12	13	14	15	16	17	18	19
13	13 49.8 +00.1	N 03 35.4 +01.0	12 33.4 -00.4	N 02 42.9 +01.2	182 28.6 -31.5	S 03 55.9 +15.8	13	14	15	16	17	18	19	20
14	28 49.9 +00.2	N 03 36.4 +00.9	27 33.0 -00.4	N 02 44.1 +01.3	196 57.1 -31.6	S 04 11.7 +15.9	14	15	16	17	18	19	20	21
15	43 50.1 +00.2	N 03 37.3 +01.0	42 32.6 -00.4	N 02 45.4 +01.2	211 25.5 -31.6	S 04 27.6 +15.8	15	16	17	18	19	20	21	22
16	58 50.3 +00.2	N 03 38.3 +01.0	57 32.2 -00.3	N 02 46.6 +01.3	225 53.9 -31.6	S 04 43.4 +15.8	16	17	18	19	20	21	22	23
17	73 50.5 +00.2	N 03 39.3 +01.0	72 31.9 -00.4	N 02 47.9 +01.2	240 22.3 -31.7	S 04 59.2 +15.8	17	18	19	20	21	22	23	
18	88 50.7 +00.2	N 03 40.3 +00.9	87 31.5 -00.4	N 02 49.1 +01.3	254 50.6 -31.7	S 05 15.0 +15.7								
19	103 50.9 +00.2	N 03 41.2 +01.0	102 31.1 -00.4	N 02 50.4 +01.3	269 18.9 -31.8	S 05 30.7 +15.8								
20	118 51.1 +00.2	N 03 42.2 +01.0	117 30.7 -00.4	N 02 51.7 +01.2	283 47.1 -31.8	S 05 46.5 +15.6								
21	133 51.3 +00.2	N 03 43.2 +00.9	132 30.3 -00.3	N 02 52.9 +01.3	298 15.3 -31.8	S 06 02.1 +15.7								
22	148 51.5 +00.1	N 03 44.1 +01.0	147 30.0 -00.4	N 02 54.2 +01.2	312 43.5 -31.8	S 06 17.8 +15.6								
23	163 51.6 +00.2	N 03 45.1 +01.0	162 29.6 -00.4	N 02 55.4 +01.3	327 11.7 -31.9	S 06 33.4 +15.6								
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22									
	SD 16'0 16'0 16'0 16'0 16'0 16'0		SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 16'5 16'5 16'5 16'6 16'6 16'6									
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 60'6 60'7 60'7 60'8 60'8 60'8									
	SHA 352° 352° 352° 352° 351° 351°		SHA 351° 351° 351° 350° 350° 350°		SHA 167° 164° 162° 160° 157° 155°									
	Greenwich Culmination Time: 12:04		Greenwich Culmination Time: 12:09		Greenwich Culmination Time: 00:23									

UT	Mars				Jupiter				Saturn				UT	
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec		
00	113 27.4 +00.8	N 24 01.6 +00.2	221 24.8 +02.0	S 14 34.6 -00.2	232 52.7 +02.3	S 17 55.4 -00.1	00	01	02	03	04	05	06	07
01	128 28.2 +00.9	N 24 01.8 +00.1	236 26.8 +02.0	S 14 34.4 -00.1	247 55.0 +02.2	S 17 55.3 +00.0	01	02	03	04	05	06	07	08
02	143 29.1 +00.8	N 24 01.9 +00.2	251 28.8 +01.9	S 14 34.3 -00.2	262 57.2 +02.3	S 17 55.3 -00.1	02	03	04	05	06	07	08	09
03	158 29.9 +00.8	N 24 02.1 +00.2	266 30.7 +02.0	S 14 34.1 -00.1	277 59.5 +02.2	S 17 55.2 +00.0	03	04	05	06	07	08	09	10
04	173 30.7 +00.9	N 24 02.3 +00.2	281 32.7 +02.0	S 14 34.0 -00.2	293 01.7 +02.3	S 17 55.2 -00.1	04	05	06	07	08	09	10	11
05	188 31.6 +00.8	N 24 02.5 +00.1	296 34.7 +02.0	S 14 33.8 -00.2	308 04.0 +02.2	S 17 55.1 +00.0	05	06	07	08	09	10	11	12
06	203 32.4 +00.9	N 24 02.6 +00.2	311 36.7 +01.9	S 14 33.6 -00.1	323 06.2 +02.3	S 17 55.1 -00.1	06	07	08	09	10	11	12	13
07	218 33.3 +00.8	N 24 02.8 +00.2	326 38.6 +02.0	S 14 33.5 -00.2	338 08.5 +02.3	S 17 55.0 +00.0	07	08	09	10	11	12	13	14
08	233 34.1 +00.8	N 24 03.0 +00.1	341 40.6 +02.0	S 14 33.3 -00.1	353 10.8 +02.2	S 17 55.0 -00.1	08	09	10	11	12	13	14	15
09	248 34.9 +00.9	N 24 03.1 +00.2	356 42.6 +02.0	S 14 33.2 -00.2	8 13.0 +02.3	S 17 54.9 +00.0	09	10	11	12	13	14	15	16
10	263 35.8 +00.8	N 24 03.3 +00.2	11 44.6 +01.9	S 14 33.0 -00.1	23 15.3 +02.2	S 17 54.9 -00.1	10	11	12	13	14	15	16	17
11	278 36.6 +00.9	N 24 03.5 +00.1	26 46.5 +02.0	S 14 32.9 -00.2	38 17.5 +02.3	S 17 54.8 +00.0	11	12	13	14	15	16	17	18
12	293 37.5 +00.8	N 24 03.6 +00.2	41 48.5 +02.0	S 14 32.7 -00.1	53 19.8 +02.3	S 17 54.8 -00.1	12	13	14	15	16	17	18	19
13	308 38.3 +00.8	N 24 03.8 +00.2	56 50.5 +02.0	S 14 32.6 -00.2	68 22.1 +02.2	S 17 54.7 +00.0	13	14	15	16	17	18	19	20
14	323 39.1 +00.9	N 24 04.0 +00.2	71 52.5 +01.9	S 14 32.4 -00.2	83 24.3 +02.3	S 17 54.7 -00.1	14	15	16	17	18	19	20	21
15	338 40.0 +00.8	N 24 04.2 +00.1	86 54.4 +02.0	S 14 32.2 -00.1	98 26.6 +02.2	S 17 54.6 +00.0	15	16	17	18	19	20	21	22
16	353 40.8 +00.9	N 24 04.3 +00.2	101 56.4 +02.0	S 14 32.1 -00.2	113 28.8 +02.3	S 17 54.6 -00.1	16	17	18	19	20	21	22	23
17	8 41.7 +00.8	N 24 04.5 +00.2	116 58.4 +02.0	S 14 31.9 -00.1	128 31.1 +02.2	S 17 54.5 +00.0	17	18	19	20	21	22	23	
18	23 42.5 +00.8	N 24 04.7 +00.1	132 00.4 +01.9	S 14 31.8 -00.2	143 33.3 +02.3	S 17 54.5 -00.1								
19	38 43.3 +00.9	N 24 04.8 +00.2	147 02.3 +02.0	S 14 31.6 -00.1	158 35.6 +02.3	S 17 54.4 +00.0								
20	53 44.2 +00.8	N 24 05.0 +00.2	162 04.3 +02.0	S 14 31.5 -00.2	173 37.9 +02.2	S 17 54.4 -00.1								
21	68 45.0 +00.9	N 24 05.2 +00.1	177 06.3 +02.0	S 14 31.3 -00.2	188 40.1 +02.3	S 17 54.3 +00.0								
22	83 45.9 +00.8	N 24 05.3 +00.2	192 08.3 +01.9	S 14 31.1 -00.1	203 42.4 +02.2	S 17 54.3 -00.1								
23	98 46.7 +00.8	N 24 05.5 +00.2	207 10.2 +02.0	S 14 31.0 -00.2	218 44.6 +02.3	S 17 54.2 +00.0								
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22									
	SD 00'0 00'0 00'0 00'0 00'0 00'0		SD 00'3 00'3 00'3 00'3 00'3 00'3		SD 00'1 00'1 00'1 00'1 00'1 00'1									
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0									
	SHA 287° 287° 287° 286° 286° 286°		SHA 035° 035° 035° 035° 035° 035°		SHA 046° 046° 046° 046° 046° 046°									
	Greenwich Culmination Time: 16:25		Greenwich Culmination Time: 09:13		Greenwich Culmination Time: 08:27									

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 51.8 +00.2	N 03 46.1 +00.9	177 29.2 -00.4	N 02 56.7 +01.2	341 39.8 -32.0	S 06 49.0 +15.5	00						
01	193 52.0 +00.2	N 03 47.0 +01.0	192 28.8 -00.4	N 02 57.9 +01.3	356 07.8 -31.9	S 07 04.5 +15.6	01						
02	208 52.2 +00.2	N 03 48.0 +01.0	207 28.4 -00.3	N 02 59.2 +01.2	10 35.9 -32.1	S 07 20.1 +15.4	02						
03	223 52.4 +00.2	N 03 49.0 +01.0	222 28.1 -00.4	N 03 00.4 +01.3	25 03.8 -32.0	S 07 35.5 +15.4	03						
04	238 52.6 +00.2	N 03 50.0 +00.9	237 27.7 -00.4	N 03 01.7 +01.2	39 31.8 -32.1	S 07 50.9 +15.4	04						
05	253 52.8 +00.2	N 03 50.9 +01.0	252 27.3 -00.4	N 03 02.9 +01.3	53 59.7 -32.2	S 08 06.3 +15.3	05						
06	268 53.0 +00.2	N 03 51.9 +01.0	267 26.9 -00.4	N 03 04.2 +01.3	68 27.5 -32.2	S 08 21.6 +15.3	06						
07	283 53.2 +00.1	N 03 52.9 +00.9	282 26.5 -00.3	N 03 05.5 +01.2	82 55.3 -32.2	S 08 36.9 +15.2	07						
08	298 53.3 +00.2	N 03 53.8 +01.0	297 26.2 -00.4	N 03 06.7 +01.3	97 23.1 -32.3	S 08 52.1 +15.2	08						
09	313 53.5 +00.2	N 03 54.8 +01.0	312 25.8 -00.4	N 03 08.0 +01.2	111 50.8 -32.3	S 09 07.3 +15.1	09						
10	328 53.7 +00.2	N 03 55.8 +00.9	327 25.4 -00.4	N 03 09.2 +01.3	126 18.5 -32.4	S 09 22.4 +15.0	10						
11	343 53.9 +00.2	N 03 56.7 +01.0	342 25.0 -00.4	N 03 10.5 +01.2	140 46.1 -32.4	S 09 37.4 +15.0	11						
12	358 54.1 +00.2	N 03 57.7 +01.0	357 24.6 -00.3	N 03 11.7 +01.3	155 13.7 -32.4	S 09 52.4 +14.9	12						
13	13 54.3 +00.2	N 03 58.7 +01.0	12 24.3 -00.4	N 03 13.0 +01.2	169 41.3 -32.5	S 10 07.3 +14.9	13						
14	28 54.5 +00.2	N 03 59.7 +00.9	27 23.9 -00.4	N 03 14.2 +01.3	184 08.8 -32.6	S 10 22.2 +14.8	14						
15	43 54.7 +00.1	N 04 00.6 +01.0	42 23.5 -00.4	N 03 15.5 +01.2	198 36.2 -32.6	S 10 37.0 +14.7	15						
16	58 54.8 +00.2	N 04 01.6 +01.0	57 23.1 -00.4	N 03 16.7 +01.3	213 03.6 -32.7	S 10 51.7 +14.7	16						
17	73 55.0 +00.2	N 04 02.6 +00.9	72 22.7 -00.3	N 03 18.0 +01.2	227 30.9 -32.7	S 11 06.4 +14.6	17						
18	88 55.2 +00.2	N 04 03.5 +01.0	87 22.4 -00.4	N 03 19.2 +01.3	241 58.2 -32.8	S 11 21.0 +14.5	18						
19	103 55.4 +00.2	N 04 04.5 +01.0	102 22.0 -00.4	N 03 20.5 +01.2	256 25.4 -32.8	S 11 35.5 +14.4	19						
20	118 55.6 +00.2	N 04 05.5 +00.9	117 21.6 -00.4	N 03 21.7 +01.3	270 52.6 -32.8	S 11 49.9 +14.4	20						
21	133 55.8 +00.2	N 04 06.4 +01.0	132 21.2 -00.4	N 03 23.0 +01.3	285 19.8 -32.9	S 12 04.3 +14.3	21						
22	148 56.0 +00.2	N 04 07.4 +01.0	147 20.8 -00.3	N 03 24.3 +01.2	299 46.9 -33.0	S 12 18.6 +14.2	22						
23	163 56.2 +00.1	N 04 08.4 +00.9	162 20.5 -00.4	N 03 25.5 +01.3	314 13.9 -33.0	S 12 32.8 +14.1	23						
	UT 02 06 10 14 18 22	SD 16'0 16'0 16'0 16'0 16'0 16'0	UT 02 06 10 14 18 22	SD 00'1 00'1 00'1 00'1 00'1 00'1	UT 02 06 10 14 18 22	SD 16'6 16'6 16'6 16'6 16'6 16'6							
	HP 00'1 00'1 00'1 00'1 00'1 00'1	HP 00'1 00'1 00'1 00'1 00'1 00'1	HP 00'1 00'1 00'1 00'1 00'1 00'1	HP 60'8 60'8 60'8 60'8 60'8 60'8		HP 00'0 00'0 00'0 00'0 00'0 00'0							
	SHA 351° 351° 351° 351° 351° 350°	SHA 350° 350° 349° 349° 349° 349°	SHA 350° 350° 349° 349° 349° 349°	SHA 153° 151° 148° 146° 144° 141°		SHA 153° 151° 148° 146° 144° 141°							
	Greenwich Culmination Time: 12:04	Greenwich Culmination Time: 12:10	Greenwich Culmination Time: 12:10	Greenwich Culmination Time: 01:16		Greenwich Culmination Time: 01:16							

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	113 47.5 +00.9	N 24 05.7 +00.1	222 12.2 +02.0	S 14 30.8 -00.1	233 46.9 +02.3	S 17 54.2 -00.1	00						
01	128 48.4 +00.8	N 24 05.8 +00.2	237 14.2 +02.0	S 14 30.7 -00.2	248 49.2 +02.2	S 17 54.1 +00.0	01						
02	143 49.2 +00.9	N 24 06.0 +00.2	252 16.2 +02.0	S 14 30.5 -00.1	263 51.4 +02.3	S 17 54.1 -00.1	02						
03	158 50.1 +00.8	N 24 06.2 +00.1	267 18.2 +01.9	S 14 30.4 -00.2	278 53.7 +02.3	S 17 54.0 +00.0	03						
04	173 50.9 +00.8	N 24 06.3 +00.2	282 20.1 +02.0	S 14 30.2 -00.1	293 56.0 +02.2	S 17 54.0 -00.1	04						
05	188 51.7 +00.9	N 24 06.5 +00.1	297 22.1 +02.0	S 14 30.1 -00.2	308 58.2 +02.3	S 17 53.9 +00.0	05						
06	203 52.6 +00.8	N 24 06.6 +00.2	312 24.1 +02.0	S 14 29.9 -00.2	324 00.5 +02.2	S 17 53.9 -00.1	06						
07	218 53.4 +00.8	N 24 06.8 +00.2	327 26.1 +02.0	S 14 29.7 -00.1	339 02.7 +02.3	S 17 53.8 +00.0	07						
08	233 54.2 +00.9	N 24 07.0 +00.1	342 28.1 +01.9	S 14 29.6 -00.2	354 05.0 +02.3	S 17 53.8 -00.1	08						
09	248 55.1 +00.8	N 24 07.1 +00.2	357 30.0 +02.0	S 14 29.4 -00.1	9 07.3 +02.2	S 17 53.7 +00.0	09						
10	263 55.9 +00.9	N 24 07.3 +00.2	12 32.0 +02.0	S 14 29.3 -00.2	24 09.5 +02.3	S 17 53.7 -00.1	10						
11	278 56.8 +00.8	N 24 07.5 +00.1	27 34.0 +02.0	S 14 29.1 -00.1	39 11.8 +02.2	S 17 53.6 +00.0	11						
12	293 57.6 +00.8	N 24 07.6 +00.2	42 36.0 +01.9	S 14 29.0 -00.2	54 14.0 +02.3	S 17 53.6 -00.1	12						
13	308 58.4 +00.9	N 24 07.8 +00.1	57 37.9 +02.0	S 14 28.8 -00.1	69 16.3 +02.3	S 17 53.5 +00.0	13						
14	323 59.3 +00.8	N 24 07.9 +00.2	72 39.9 +02.0	S 14 28.7 -00.2	84 18.6 +02.2	S 17 53.5 -00.1	14						
15	339 00.1 +00.8	N 24 08.1 +00.2	87 41.9 +02.0	S 14 28.5 -00.2	99 20.8 +02.3	S 17 53.4 +00.0	15						
16	354 00.9 +00.9	N 24 08.3 +00.1	102 43.9 +02.0	S 14 28.3 -00.1	114 23.1 +02.3	S 17 53.4 -00.1	16						
17	9 01.8 +00.8	N 24 08.4 +00.2	117 45.9 +01.9	S 14 28.2 -00.2	129 25.4 +02.2	S 17 53.3 +00.0	17						
18	24 02.6 +00.9	N 24 08.6 +00.2	132 47.8 +02.0	S 14 28.0 -00.1	144 27.6 +02.3	S 17 53.3 -00.1	18						
19	39 03.5 +00.8	N 24 08.8 +00.1	147 49.8 +02.0	S 14 27.9 -00.2	159 29.9 +02.2	S 17 53.2 +00.0	19						
20	54 04.3 +00.8	N 24 08.9 +00.2	162 51.8 +02.0	S 14 27.7 -00.1	174 32.1 +02.3	S 17 53.2 -00.1	20						
21	69 05.1 +00.9	N 24 09.1 +00.1	177 53.8 +02.0	S 14 27.6 -00.2	189 34.4 +02.3	S 17 53.1 +00.0	21						
22	84 06.0 +00.8	N 24 09.2 +00.2	192 55.8 +02.0	S 14 27.4 -00.1	204 36.7 +02.2	S 17 53.1 -00.1	22						
23	99 06.8 +00.8	N 24 09.4 +00.2	207 57.8 +01.9	S 14 27.3 -00.2	219 38.9 +02.3	S 17 53.0 +00.0	23						
	UT 02 06 10 14 18 22	SD 00'0 00'0 00'0 00'0 00'0 00'0	UT 02 06 10 14 18 22	SD 00'3 00'3 00'3 00'3 00'3 00'3	UT 02 06 10 14 18 22	SD 00'1 00'1 00'1 00'1 00'1 00'1							
	HP 00'1 00'1 00'1 00'1 00'1 00'1	HP 00'0 00'0 00'0 00'0 00'0 00'0	HP 00'0 00'0 00'0 00'0 00'0 00'0	HP 046° 046° 046° 046° 046° 046°		HP 00'0 00'0 00'0 00'0 00'0 00'0							
	SHA 286° 286° 286° 286° 286° 286°	SHA 035° 035° 035° 034° 034° 034°	SHA 035° 035° 035° 034° 034° 034°	SHA 046° 046° 046° 046° 046° 046°		SHA 046° 046° 046° 046° 046° 046°							
	Greenwich Culmination Time: 16:23	Greenwich Culmination Time: 09:09	Greenwich Culmination Time: 09:09	Greenwich Culmination Time: 08:23		Greenwich Culmination Time: 08:23							

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	178 56.3 +00.2	N 04 09.3 +01.0	177 20.1 -00.4	N 03 26.8 +01.2	328 40.9 -33.1	S 12 46.9 +14.1	00						
01	193 56.5 +00.2	N 04 10.3 +01.0	192 19.7 -00.4	N 03 28.0 +01.3	343 07.8 -33.2	S 13 01.0 +13.9	01						
02	208 56.7 +00.2	N 04 11.3 +00.9	207 19.3 -00.4	N 03 29.3 +01.2	357 34.6 -33.1	S 13 14.9 +13.9	02						
03	223 56.9 +00.2	N 04 12.2 +01.0	222 18.9 -00.4	N 03 30.5 +01.3	12 01.5 -33.3	S 13 28.8 +13.8	03						
04	238 57.1 +00.2	N 04 13.2 +01.0	237 18.5 -00.3	N 03 31.8 +01.2	26 28.2 -33.3	S 13 42.6 +13.7	04						
05	253 57.3 +00.2	N 04 14.2 +00.9	252 18.2 -00.4	N 03 33.0 +01.3	40 54.9 -33.3	S 13 56.3 +13.6	05						
06	268 57.5 +00.2	N 04 15.1 +01.0	267 17.8 -00.4	N 03 34.3 +01.2	55 21.6 -33.4	S 14 09.9 +13.5	06						
07	283 57.7 +00.1	N 04 16.1 +01.0	282 17.4 -00.4	N 03 35.5 +01.3	69 48.2 -33.5	S 14 23.4 +13.4	07						
08	298 57.8 +00.2	N 04 17.1 +00.9	297 17.0 -00.4	N 03 36.8 +01.2	84 14.7 -33.5	S 14 36.8 +13.3	08						
09	313 58.0 +00.2	N 04 18.0 +01.0	312 16.6 -00.3	N 03 38.0 +01.3	98 41.2 -33.6	S 14 50.1 +13.2	09						
10	328 58.2 +00.2	N 04 19.0 +01.0	327 16.3 -00.4	N 03 39.3 +01.2	113 07.6 -33.6	S 15 03.3 +13.1	10						
11	343 58.4 +00.2	N 04 20.0 +00.9	342 15.9 -00.4	N 03 40.5 +01.3	127 34.0 -33.7	S 15 16.4 +13.0	11						
12	358 58.6 +00.2	N 04 20.9 +01.0	357 15.5 -00.4	N 03 41.8 +01.2	142 00.3 -33.8	S 15 29.4 +12.9	12						
13	13 58.8 +00.2	N 04 21.9 +01.0	12 15.1 -00.4	N 03 43.0 +01.3	156 26.5 -33.8	S 15 42.3 +12.8	13						
14	28 59.0 +00.2	N 04 22.9 +00.9	27 14.7 -00.4	N 03 44.3 +01.2	170 52.7 -33.8	S 15 55.1 +12.7	14						
15	43 59.2 +00.1	N 04 23.8 +01.0	42 14.3 -00.3	N 03 45.5 +01.3	185 18.9 -33.9	S 16 07.8 +12.6	15						
16	58 59.3 +00.2	N 04 24.8 +01.0	57 14.0 -00.4	N 03 46.8 +01.2	199 45.0 -34.0	S 16 20.4 +12.4	16						
17	73 59.5 +00.2	N 04 25.8 +00.9	72 13.6 -00.4	N 03 48.0 +01.3	214 11.0 -34.0	S 16 32.8 +12.4	17						
18	88 59.7 +00.2	N 04 26.7 +01.0	87 13.2 -00.4	N 03 49.3 +01.2	228 37.0 -34.1	S 16 45.2 +12.2	18						
19	103 59.9 +00.2	N 04 27.7 +01.0	102 12.8 -00.4	N 03 50.5 +01.3	243 02.9 -34.2	S 16 57.4 +12.2	19						
20	119 00.1 +00.2	N 04 28.7 +00.9	117 12.4 -00.4	N 03 51.8 +01.2	257 28.7 -34.2	S 17 09.6 +12.0	20						
21	134 00.3 +00.2	N 04 29.6 +01.0	132 12.0 -00.3	N 03 53.0 +01.3	271 54.5 -34.2	S 17 21.6 +11.9	21						
22	149 00.5 +00.1	N 04 30.6 +01.0	147 11.7 -00.4	N 03 54.3 +01.2	286 20.3 -34.3	S 17 33.5 +11.7	22						
23	164 00.6 +00.2	N 04 31.6 +00.9	162 11.3 -00.4	N 03 55.5 +01.3	300 46.0 -34.4	S 17 45.2 +11.7	23						
UT	02 06 10 14 18 22	SD 16'0 16'0 16'0 16'0 16'0 16'0	UT	02 06 10 14 18 22	SD 00'1 00'1 00'1 00'1 00'1 00'1	UT	02 06 10 14 18 22	SD 16'5 16'5 16'5 16'5 16'5 16'5					
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 60'7 60'7 60'6 60'6 60'5 60'5		HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 350° 350° 350° 350° 350° 350°		SHA 349° 348° 348° 348° 348° 348°		SHA 139° 137° 134° 132° 129° 127°		SHA 046° 046° 046° 046° 046° 046°						
	Greenwich Culmination Time: 12:04		Greenwich Culmination Time: 12:10		Greenwich Culmination Time: 02:10								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	114 07.6 +00.9	N 24 09.6 +00.1	222 59.7 +02.0	S 14 27.1 -00.2	234 41.2 +02.3	S 17 53.0 -00.1	00						
01	129 08.5 +00.8	N 24 09.7 +00.2	238 01.7 +02.0	S 14 26.9 -00.1	249 43.5 +02.2	S 17 52.9 +00.0	01						
02	144 09.3 +00.8	N 24 09.9 +00.1	253 03.7 +02.0	S 14 26.8 -00.2	264 45.7 +02.3	S 17 52.9 -00.1	02						
03	159 10.1 +00.9	N 24 10.0 +00.2	268 05.7 +02.0	S 14 26.6 -00.1	279 48.0 +02.2	S 17 52.8 +00.0	03						
04	174 11.0 +00.8	N 24 10.2 +00.1	283 07.7 +01.9	S 14 26.5 -00.2	294 50.2 +02.3	S 17 52.8 -00.1	04						
05	189 11.8 +00.9	N 24 10.3 +00.2	298 09.6 +02.0	S 14 26.3 -00.1	309 52.5 +02.3	S 17 52.7 +00.0	05						
06	204 12.7 +00.8	N 24 10.5 +00.2	313 11.6 +02.0	S 14 26.2 -00.2	324 54.8 +02.2	S 17 52.7 -00.1	06						
07	219 13.5 +00.8	N 24 10.7 +00.1	328 13.6 +02.0	S 14 26.0 -00.1	339 57.0 +02.3	S 17 52.6 +00.0	07						
08	234 14.3 +00.9	N 24 10.8 +00.2	343 15.6 +02.0	S 14 25.9 -00.2	354 59.3 +02.3	S 17 52.6 -00.1	08						
09	249 15.2 +00.8	N 24 11.0 +00.1	358 17.6 +02.0	S 14 25.7 -00.1	10 01.6 +02.2	S 17 52.5 +00.0	09						
10	264 16.0 +00.8	N 24 11.1 +00.2	13 19.6 +01.9	S 14 25.6 -00.2	25 03.8 +02.3	S 17 52.5 -00.1	10						
11	279 16.8 +00.9	N 24 11.3 +00.1	28 21.5 +02.0	S 14 25.4 -00.2	40 06.1 +02.3	S 17 52.4 +00.0	11						
12	294 17.7 +00.8	N 24 11.4 +00.2	43 23.5 +02.0	S 14 25.2 -00.1	55 08.4 +02.2	S 17 52.4 -00.1	12						
13	309 18.5 +00.8	N 24 11.6 +00.2	58 25.5 +02.0	S 14 25.1 -00.2	70 10.6 +02.3	S 17 52.3 +00.0	13						
14	324 19.3 +00.9	N 24 11.8 +00.1	73 27.5 +02.0	S 14 24.9 -00.1	85 12.9 +02.3	S 17 52.3 -00.1	14						
15	339 20.2 +00.8	N 24 11.9 +00.2	88 29.5 +02.0	S 14 24.8 -00.2	100 15.2 +02.2	S 17 52.2 +00.0	15						
16	354 21.0 +00.8	N 24 12.1 +00.1	103 31.5 +01.9	S 14 24.6 -00.1	115 17.4 +02.3	S 17 52.2 -00.1	16						
17	9 21.8 +00.9	N 24 12.2 +00.2	118 33.4 +02.0	S 14 24.5 -00.2	130 19.7 +02.2	S 17 52.1 +00.0	17						
18	24 22.7 +00.8	N 24 12.4 +00.1	133 35.4 +02.0	S 14 24.3 -00.1	145 21.9 +02.3	S 17 52.1 -00.1	18						
19	39 23.5 +00.8	N 24 12.5 +00.2	148 37.4 +02.0	S 14 24.2 -00.2	160 24.2 +02.3	S 17 52.0 +00.0	19						
20	54 24.3 +00.9	N 24 12.7 +00.1	163 39.4 +02.0	S 14 24.0 -00.1	175 26.5 +02.2	S 17 52.0 -00.1	20						
21	69 25.2 +00.8	N 24 12.8 +00.2	178 41.4 +02.0	S 14 23.9 -00.2	190 28.7 +02.3	S 17 51.9 +00.0	21						
22	84 26.0 +00.8	N 24 13.0 +00.1	193 43.4 +01.9	S 14 23.7 -00.2	205 31.0 +02.3	S 17 51.9 -00.1	22						
23	99 26.8 +00.9	N 24 13.1 +00.2	208 45.3 +02.0	S 14 23.5 -00.1	220 33.3 +02.2	S 17 51.8 +00.0	23						
UT	02 06 10 14 18 22	SD 00'0 00'0 00'0 00'0 00'0 00'0	UT	02 06 10 14 18 22	SD 00'3 00'3 00'3 00'3 00'3 00'3	UT	02 06 10 14 18 22	SD 00'1 00'1 00'1 00'1 00'1 00'1					
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 285° 285° 285° 285° 285° 285°		SHA 034° 034° 034° 034° 034° 034°		SHA 046° 046° 046° 046° 046° 046°		SHA 046° 046° 046° 046° 046° 046°						
	Greenwich Culmination Time: 16:22		Greenwich Culmination Time: 09:06		Greenwich Culmination Time: 08:19								