

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 34.0 +00.2	S 03 11.2 +01.0	140 05.6 -00.3	S 20 36.2 +00.9	247 16.4 -31.3	N 24 24.3 -05.3	00						
01	197 34.2 +00.2	S 03 12.2 +01.0	155 05.3 -00.4	S 20 37.1 +00.8	261 45.1 -31.2	N 24 19.0 -05.4	01						
02	212 34.4 +00.2	S 03 13.2 +00.9	170 04.9 -00.4	S 20 37.9 +00.9	276 13.9 -31.2	N 24 13.6 -05.5	02						
03	227 34.6 +00.2	S 03 14.1 +01.0	185 04.5 -00.3	S 20 38.8 +00.9	290 42.7 -31.2	N 24 08.1 -05.6	03						
04	242 34.8 +00.2	S 03 15.1 +01.0	200 04.2 -00.4	S 20 39.7 +00.8	305 11.5 -31.1	N 24 02.5 -05.8	04						
05	257 35.0 +00.2	S 03 16.1 +00.9	215 03.8 -00.4	S 20 40.5 +00.9	319 40.4 -31.2	N 23 56.7 -05.8	05						
06	272 35.2 +00.2	S 03 17.0 +01.0	230 03.4 -00.3	S 20 41.4 +00.9	334 09.2 -31.1	N 23 50.9 -06.1	06						
07	287 35.4 +00.2	S 03 18.0 +01.0	245 03.1 -00.4	S 20 42.3 +00.8	348 38.1 -31.2	N 23 44.8 -06.1	07						
08	302 35.6 +00.2	S 03 19.0 +00.9	260 02.7 -00.4	S 20 43.1 +00.9	3 06.9 -31.1	N 23 38.7 -06.3	08						
09	317 35.8 +00.2	S 03 19.9 +01.0	275 02.3 -00.3	S 20 44.0 +00.9	17 35.8 -31.1	N 23 32.4 -06.4	09						
10	332 36.0 +00.2	S 03 20.9 +01.0	290 02.0 -00.4	S 20 44.9 +00.8	32 04.7 -31.1	N 23 26.0 -06.5	10						
11	347 36.2 +00.2	S 03 21.9 +01.0	305 01.6 -00.4	S 20 45.7 +00.9	46 33.6 -31.0	N 23 19.5 -06.7	11						
12	2 36.4 +00.2	S 03 22.9 +00.9	320 01.2 -00.3	S 20 46.6 +00.9	61 02.6 -31.1	N 23 12.8 -06.8	12						
13	17 36.6 +00.2	S 03 23.8 +01.0	335 00.9 -00.4	S 20 47.5 +00.8	75 31.5 -31.0	N 23 06.0 -06.9	13						
14	32 36.8 +00.2	S 03 24.8 +01.0	350 00.5 -00.4	S 20 48.3 +00.9	90 00.5 -31.0	N 22 59.1 -07.0	14						
15	47 37.0 +00.2	S 03 25.8 +00.9	5 00.1 -00.3	S 20 49.2 +00.9	104 29.5 -31.0	N 22 52.1 -07.2	15						
16	62 37.2 +00.2	S 03 26.7 +01.0	19 59.8 -00.4	S 20 50.1 +00.8	118 58.5 -31.0	N 22 44.9 -07.2	16						
17	77 37.4 +00.2	S 03 27.7 +01.0	34 59.4 -00.4	S 20 50.9 +00.9	133 27.5 -30.9	N 22 37.7 -07.5	17						
18	92 37.6 +00.2	S 03 28.7 +00.9	49 59.0 -00.3	S 20 51.8 +00.8	147 56.6 -30.9	N 22 30.2 -07.5	18						
19	107 37.8 +00.2	S 03 29.6 +01.0	64 58.7 -00.4	S 20 52.6 +00.9	162 25.7 -30.9	N 22 22.7 -07.6	19						
20	122 38.0 +00.2	S 03 30.6 +01.0	79 58.3 -00.4	S 20 53.5 +00.8	176 54.8 -30.9	N 22 15.1 -07.8	20						
21	137 38.2 +00.2	S 03 31.6 +00.9	94 57.9 -00.3	S 20 54.3 +00.9	191 23.9 -30.9	N 22 07.3 -07.9	21						
22	152 38.4 +00.2	S 03 32.5 +01.0	109 57.6 -00.4	S 20 55.2 +00.9	205 53.0 -30.8	N 21 59.4 -08.0	22						
23	167 38.6 +00.2	S 03 33.5 +01.0	124 57.2 -00.4	S 20 56.1 +00.8	220 22.2 -30.9	N 21 51.4 -08.2	23						
UT	02 06 10 14 18 22		UT	02 06 10 14 18 22		UT	02 06 10 14 18 22						
SD	16'0 16'0 16'0 16'0 16'0 16'0		SD	00'2 00'2 00'2 00'2 00'2 00'2		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	00'2 00'2 00'2 00'2 00'2 00'2		HP	55'6 55'7 55'9 56'0 56'1 56'2						
SHA	173° 172° 172° 172° 172° 172°		SHA	130° 130° 130° 129° 129° 129°		SHA	236° 234° 232° 229° 227° 225°						
Greenwich Culmination Time: 11:49			Greenwich Culmination Time: 14:39			Greenwich Culmination Time: 07:47							

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	180 07.0 +01.0	S 03 28.0 +00.7	44 22.8 +02.6	S 15 01.3 +00.1	60 22.0 +02.5	S 19 19.4 +00.0	00						
01	195 08.0 +00.9	S 03 28.7 +00.6	59 25.4 +02.6	S 15 01.4 +00.0	75 24.5 +02.5	S 19 19.4 +00.0	01						
02	210 08.9 +01.0	S 03 29.3 +00.7	74 28.0 +02.6	S 15 01.4 +00.1	90 27.0 +02.5	S 19 19.4 +00.0	02						
03	225 09.9 +00.9	S 03 30.0 +00.6	89 30.6 +02.6	S 15 01.5 +00.0	105 29.5 +02.5	S 19 19.4 +00.0	03						
04	240 10.8 +01.0	S 03 30.6 +00.7	104 33.2 +02.6	S 15 01.5 +00.1	120 32.0 +02.5	S 19 19.4 +00.0	04						
05	255 11.8 +01.0	S 03 31.3 +00.7	119 35.8 +02.6	S 15 01.6 +00.0	135 34.5 +02.6	S 19 19.4 +00.0	05						
06	270 12.8 +00.9	S 03 32.0 +00.6	134 38.4 +02.6	S 15 01.6 +00.0	150 37.1 +02.5	S 19 19.4 +00.0	06						
07	285 13.7 +01.0	S 03 32.6 +00.7	149 41.0 +02.6	S 15 01.6 +00.1	165 39.6 +02.5	S 19 19.4 +00.1	07						
08	300 14.7 +01.0	S 03 33.3 +00.6	164 43.6 +02.6	S 15 01.7 +00.0	180 42.1 +02.5	S 19 19.5 +00.0	08						
09	315 15.7 +00.9	S 03 33.9 +00.7	179 46.2 +02.6	S 15 01.7 +00.1	195 44.6 +02.5	S 19 19.5 +00.0	09						
10	330 16.6 +01.0	S 03 34.6 +00.6	194 48.8 +02.6	S 15 01.8 +00.0	210 47.1 +02.5	S 19 19.5 +00.0	10						
11	345 17.6 +01.0	S 03 35.2 +00.7	209 51.4 +02.6	S 15 01.8 +00.0	225 49.6 +02.5	S 19 19.5 +00.0	11						
12	0 18.6 +00.9	S 03 35.9 +00.7	224 54.0 +02.6	S 15 01.8 +00.1	240 52.1 +02.5	S 19 19.5 +00.0	12						
13	15 19.5 +01.0	S 03 36.6 +00.6	239 56.6 +02.6	S 15 01.9 +00.0	255 54.6 +02.5	S 19 19.5 +00.0	13						
14	30 20.5 +00.9	S 03 37.2 +00.7	254 59.2 +02.6	S 15 01.9 +00.1	270 57.1 +02.5	S 19 19.5 +00.0	14						
15	45 21.4 +01.0	S 03 37.9 +00.6	270 01.8 +02.6	S 15 02.0 +00.0	285 59.6 +02.5	S 19 19.5 +00.0	15						
16	60 22.4 +01.0	S 03 38.5 +00.7	285 04.4 +02.6	S 15 02.0 +00.1	301 02.1 +02.5	S 19 19.5 +00.0	16						
17	75 23.4 +00.9	S 03 39.2 +00.6	300 07.0 +02.6	S 15 02.1 +00.0	316 04.6 +02.5	S 19 19.5 +00.1	17						
18	90 24.3 +01.0	S 03 39.8 +00.7	315 09.6 +02.6	S 15 02.1 +00.0	331 07.1 +02.5	S 19 19.6 +00.0	18						
19	105 25.3 +01.0	S 03 40.5 +00.7	330 12.2 +02.6	S 15 02.1 +00.1	346 09.6 +02.5	S 19 19.6 +00.0	19						
20	120 26.3 +00.9	S 03 41.2 +00.6	345 14.8 +02.6	S 15 02.2 +00.0	1 12.1 +02.5	S 19 19.6 +00.0	20						
21	135 27.2 +01.0	S 03 41.8 +00.7	0 17.4 +02.6	S 15 02.2 +00.1	16 14.6 +02.5	S 19 19.6 +00.0	21						
22	150 28.2 +00.9	S 03 42.5 +00.6	15 20.0 +02.6	S 15 02.3 +00.0	31 17.1 +02.5	S 19 19.6 +00.0	22						
23	165 29.1 +01.0	S 03 43.1 +00.7	30 22.6 +02.6	S 15 02.3 +00.0	46 19.6 +02.5	S 19 19.6 +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	00'4 00'4 00'4 00'4 00'4 00'4		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	170° 170° 170° 170° 170° 170°		SHA	034° 034° 034° 034° 034° 034°		SHA	050° 050° 050° 050° 050° 050°						
Greenwich Culmination Time: 11:58			Greenwich Culmination Time: 20:58			Greenwich Culmination Time: 19:55							

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 38.8 +00.2	S	03 34.5 +00.9	139 56.8 -00.3	S	20 56.9 +00.9	234 51.3 -30.8	N	21 43.2 -08.3	00			
01	197 39.0 +00.2	S	03 35.4 +01.0	154 56.5 -00.4	S	20 57.8 +00.8	249 20.5 -30.7	N	21 34.9 -08.3	01			
02	212 39.2 +00.2	S	03 36.4 +01.0	169 56.1 -00.4	S	20 58.6 +00.9	263 49.8 -30.8	N	21 26.6 -08.5	02			
03	227 39.4 +00.2	S	03 37.4 +00.9	184 55.7 -00.3	S	20 59.5 +00.8	278 19.0 -30.7	N	21 18.1 -08.7	03			
04	242 39.6 +00.2	S	03 38.3 +01.0	199 55.4 -00.4	S	21 00.3 +00.9	292 48.3 -30.7	N	21 09.4 -08.7	04			
05	257 39.8 +00.2	S	03 39.3 +01.0	214 55.0 -00.4	S	21 01.2 +00.8	307 17.6 -30.7	N	21 00.7 -08.9	05			
06	272 40.0 +00.2	S	03 40.3 +00.9	229 54.6 -00.4	S	21 02.0 +00.9	321 46.9 -30.7	N	20 51.8 -09.0	06			
07	287 40.2 +00.2	S	03 41.2 +01.0	244 54.2 -00.3	S	21 02.9 +00.8	336 16.2 -30.6	N	20 42.8 -09.1	07			
08	302 40.4 +00.2	S	03 42.2 +01.0	259 53.9 -00.4	S	21 03.7 +00.9	350 45.6 -30.6	N	20 33.7 -09.2	08			
09	317 40.6 +00.2	S	03 43.2 +00.9	274 53.5 -00.4	S	21 04.6 +00.8	5 15.0 -30.6	N	20 24.5 -09.3	09			
10	332 40.8 +00.2	S	03 44.1 +01.0	289 53.1 -00.3	S	21 05.4 +00.9	19 44.4 -30.6	N	20 15.2 -09.4	10			
11	347 41.0 +00.2	S	03 45.1 +01.0	304 52.8 -00.4	S	21 06.3 +00.8	34 13.8 -30.5	N	20 05.8 -09.6	11			
12	2 41.2 +00.2	S	03 46.1 +01.0	319 52.4 -00.4	S	21 07.1 +00.8	48 43.3 -30.5	N	19 56.2 -09.7	12			
13	17 41.4 +00.2	S	03 47.1 +00.9	334 52.0 -00.4	S	21 07.9 +00.9	63 12.8 -30.5	N	19 46.5 -09.8	13			
14	32 41.6 +00.2	S	03 48.0 +01.0	349 51.6 -00.3	S	21 08.8 +00.8	77 42.3 -30.5	N	19 36.7 -09.9	14			
15	47 41.8 +00.2	S	03 49.0 +01.0	4 51.3 -00.4	S	21 09.6 +00.9	92 11.8 -30.4	N	19 26.8 -10.0	15			
16	62 42.0 +00.2	S	03 50.0 +00.9	19 50.9 -00.4	S	21 10.5 +00.8	106 41.4 -30.4	N	19 16.8 -10.1	16			
17	77 42.2 +00.2	S	03 50.9 +01.0	34 50.5 -00.3	S	21 11.3 +00.9	121 11.0 -30.4	N	19 06.7 -10.2	17			
18	92 42.4 +00.2	S	03 51.9 +01.0	49 50.2 -00.4	S	21 12.2 +00.8	135 40.6 -30.4	N	18 56.5 -10.4	18			
19	107 42.6 +00.2	S	03 52.9 +00.9	64 49.8 -00.4	S	21 13.0 +00.8	150 10.2 -30.3	N	18 46.1 -10.4	19			
20	122 42.8 +00.2	S	03 53.8 +01.0	79 49.4 -00.4	S	21 13.8 +00.9	164 39.9 -30.3	N	18 35.7 -10.6	20			
21	137 43.0 +00.2	S	03 54.8 +01.0	94 49.0 -00.3	S	21 14.7 +00.8	179 09.6 -30.3	N	18 25.1 -10.6	21			
22	152 43.2 +00.1	S	03 55.8 +00.9	109 48.7 -00.4	S	21 15.5 +00.8	193 39.3 -30.3	N	18 14.5 -10.8	22			
23	167 43.3 +00.2	S	03 56.7 +01.0	124 48.3 -00.4	S	21 16.3 +00.9	208 09.0 -30.2	N	18 03.7 -10.9	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 00'2 00'2 00'2 00'2 00'2 00'2			SD 15'4 15'4 15'4 15'5 15'5 15'5						
	HP 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 56'4 56'5 56'6 56'8 56'9 57'0						
	SHA 172° 171° 171° 171° 171° 171°			SHA 129° 129° 129° 128° 128° 128°			SHA 223° 221° 218° 216° 214° 212°						
	Greenwich Culmination Time: 11:49			Greenwich Culmination Time: 14:40			Greenwich Culmination Time: 08:38						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	180 30.1 +01.0	S	03 43.8 +00.6	45 25.2 +02.5	S	15 02.3 +00.1	61 22.1 +02.5	S	19 19.6 +00.0	00			
01	195 31.1 +00.9	S	03 44.4 +00.7	60 27.7 +02.6	S	15 02.4 +00.0	76 24.6 +02.5	S	19 19.6 +00.0	01			
02	210 32.0 +01.0	S	03 45.1 +00.7	75 30.3 +02.6	S	15 02.4 +00.1	91 27.1 +02.5	S	19 19.6 +00.0	02			
03	225 33.0 +00.9	S	03 45.8 +00.6	90 32.9 +02.6	S	15 02.5 +00.0	106 29.6 +02.5	S	19 19.6 +00.1	03			
04	240 33.9 +01.0	S	03 46.4 +00.7	105 35.5 +02.6	S	15 02.5 +00.0	121 32.1 +02.5	S	19 19.7 +00.0	04			
05	255 34.9 +01.0	S	03 47.1 +00.6	120 38.1 +02.6	S	15 02.5 +00.1	136 34.6 +02.5	S	19 19.7 +00.0	05			
06	270 35.9 +00.9	S	03 47.7 +00.7	135 40.7 +02.6	S	15 02.6 +00.0	151 37.1 +02.6	S	19 19.7 +00.0	06			
07	285 36.8 +01.0	S	03 48.4 +00.6	150 43.3 +02.6	S	15 02.6 +00.1	166 39.7 +02.5	S	19 19.7 +00.0	07			
08	300 37.8 +01.0	S	03 49.0 +00.7	165 45.9 +02.6	S	15 02.7 +00.0	181 42.2 +02.5	S	19 19.7 +00.0	08			
09	315 38.8 +00.9	S	03 49.7 +00.7	180 48.5 +02.6	S	15 02.7 +00.0	196 44.7 +02.5	S	19 19.7 +00.0	09			
10	330 39.7 +01.0	S	03 50.4 +00.6	195 51.1 +02.6	S	15 02.7 +00.1	211 47.2 +02.5	S	19 19.7 +00.0	10			
11	345 40.7 +00.9	S	03 51.0 +00.7	210 53.7 +02.6	S	15 02.8 +00.0	226 49.7 +02.5	S	19 19.7 +00.0	11			
12	0 41.6 +01.0	S	03 51.7 +00.6	225 56.3 +02.6	S	15 02.8 +00.0	241 52.2 +02.5	S	19 19.7 +00.0	12			
13	15 42.6 +01.0	S	03 52.3 +00.7	240 58.9 +02.6	S	15 02.8 +00.1	256 54.7 +02.5	S	19 19.7 +00.0	13			
14	30 43.6 +00.9	S	03 53.0 +00.6	256 01.5 +02.6	S	15 02.9 +00.0	271 57.2 +02.5	S	19 19.7 +00.1	14			
15	45 44.5 +01.0	S	03 53.6 +00.7	271 04.1 +02.6	S	15 02.9 +00.1	286 59.7 +02.5	S	19 19.8 +00.0	15			
16	60 45.5 +00.9	S	03 54.3 +00.7	286 06.7 +02.5	S	15 03.0 +00.0	302 02.2 +02.5	S	19 19.8 +00.0	16			
17	75 46.4 +01.0	S	03 55.0 +00.6	301 09.2 +02.6	S	15 03.0 +00.0	317 04.7 +02.5	S	19 19.8 +00.0	17			
18	90 47.4 +01.0	S	03 55.6 +00.7	316 11.8 +02.6	S	15 03.0 +00.1	332 07.2 +02.5	S	19 19.8 +00.0	18			
19	105 48.4 +00.9	S	03 56.3 +00.6	331 14.4 +02.6	S	15 03.1 +00.0	347 09.7 +02.5	S	19 19.8 +00.0	19			
20	120 49.3 +01.0	S	03 56.9 +00.7	346 17.0 +02.6	S	15 03.1 +00.1	2 12.2 +02.5	S	19 19.8 +00.0	20			
21	135 50.3 +00.9	S	03 57.6 +00.6	1 19.6 +02.6	S	15 03.2 +00.0	17 14.7 +02.5	S	19 19.8 +00.0	21			
22	150 51.2 +01.0	S	03 58.2 +00.7	16 22.2 +02.6	S	15 03.2 +00.0	32 17.2 +02.5	S	19 19.8 +00.0	22			
23	165 52.2 +01.0	S	03 58.9 +00.7	31 24.8 +02.6	S	15 03.2 +00.1	47 19.7 +02.5	S	19 19.8 +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 00'4 00'4 00'4 00'4 00'4 00'4			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 170° 169° 169° 169° 169° 169°			SHA 034° 035° 035° 035° 035° 035°			SHA 050° 050° 050° 050° 050° 050°						
	Greenwich Culmination Time: 11:57			Greenwich Culmination Time: 20:54			Greenwich Culmination Time: 19:51						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 43.5 +00.2	S 03 57.7 +01.0	139 47.9 -00.4	S 21 17.2 +00.8	222 38.8 -30.2	N 17 52.8 -11.0	00						
01	197 43.7 +00.2	S 03 58.7 +00.9	154 47.5 -00.3	S 21 18.0 +00.8	237 08.6 -30.2	N 17 41.8 -11.1	01						
02	212 43.9 +00.2	S 03 59.6 +01.0	169 47.2 -00.4	S 21 18.8 +00.9	251 38.4 -30.2	N 17 30.7 -11.2	02						
03	227 44.1 +00.2	S 04 00.6 +00.9	184 46.8 -00.4	S 21 19.7 +00.8	266 08.2 -30.1	N 17 19.5 -11.3	03						
04	242 44.3 +00.2	S 04 01.5 +01.0	199 46.4 -00.4	S 21 20.5 +00.8	280 38.1 -30.1	N 17 08.2 -11.4	04						
05	257 44.5 +00.2	S 04 02.5 +01.0	214 46.0 -00.3	S 21 21.3 +00.9	295 08.0 -30.1	N 16 56.8 -11.5	05						
06	272 44.7 +00.2	S 04 03.5 +00.9	229 45.7 -00.4	S 21 22.2 +00.8	309 37.9 -30.1	N 16 45.3 -11.6	06						
07	287 44.9 +00.2	S 04 04.4 +01.0	244 45.3 -00.4	S 21 23.0 +00.8	324 07.8 -30.0	N 16 33.7 -11.7	07						
08	302 45.1 +00.2	S 04 05.4 +01.0	259 44.9 -00.4	S 21 23.8 +00.8	338 37.8 -30.0	N 16 22.0 -11.8	08						
09	317 45.3 +00.2	S 04 06.4 +00.9	274 44.5 -00.4	S 21 24.6 +00.9	353 07.8 -30.0	N 16 10.2 -11.9	09						
10	332 45.5 +00.2	S 04 07.3 +01.0	289 44.1 -00.3	S 21 25.5 +00.8	7 37.8 -30.0	N 15 58.3 -12.0	10						
11	347 45.7 +00.2	S 04 08.3 +01.0	304 43.8 -00.4	S 21 26.3 +00.8	22 07.8 -30.0	N 15 46.3 -12.1	11						
12	2 45.9 +00.2	S 04 09.3 +00.9	319 43.4 -00.4	S 21 27.1 +00.8	36 37.8 -29.9	N 15 34.2 -12.1	12						
13	17 46.1 +00.2	S 04 10.2 +01.0	334 43.0 -00.4	S 21 27.9 +00.9	51 07.9 -29.9	N 15 22.1 -12.3	13						
14	32 46.3 +00.2	S 04 11.2 +01.0	349 42.6 -00.3	S 21 28.8 +00.8	65 38.0 -29.9	N 15 09.8 -12.4	14						
15	47 46.5 +00.1	S 04 12.2 +00.9	4 42.3 -00.4	S 21 29.6 +00.8	80 08.1 -29.9	N 14 57.4 -12.5	15						
16	62 46.6 +00.2	S 04 13.1 +01.0	19 41.9 -00.4	S 21 30.4 +00.8	94 38.2 -29.8	N 14 44.9 -12.5	16						
17	77 46.8 +00.2	S 04 14.1 +01.0	34 41.5 -00.4	S 21 31.2 +00.8	109 08.4 -29.9	N 14 32.4 -12.7	17						
18	92 47.0 +00.2	S 04 15.1 +00.9	49 41.1 -00.4	S 21 32.0 +00.9	123 38.5 -29.8	N 14 19.7 -12.7	18						
19	107 47.2 +00.2	S 04 16.0 +01.0	64 40.7 -00.3	S 21 32.9 +00.8	138 08.7 -29.8	N 14 07.0 -12.8	19						
20	122 47.4 +00.2	S 04 17.0 +01.0	79 40.4 -00.4	S 21 33.7 +00.8	152 38.9 -29.7	N 13 54.2 -12.9	20						
21	137 47.6 +00.2	S 04 18.0 +00.9	94 40.0 -00.4	S 21 34.5 +00.8	167 09.2 -29.8	N 13 41.3 -13.0	21						
22	152 47.8 +00.2	S 04 18.9 +01.0	109 39.6 -00.4	S 21 35.3 +00.8	181 39.4 -29.7	N 13 28.3 -13.1	22						
23	167 48.0 +00.2	S 04 19.9 +01.0	124 39.2 -00.4	S 21 36.1 +00.8	196 09.7 -29.8	N 13 15.2 -13.2	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'0 16'0 16'0 16'0 16'0 16'0		SD 00'2 00'2 00'2 00'2 00'2 00'2		SD 15'6 15'6 15'7 15'7 15'7 15'8								
	HP 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 57'2 57'3 57'5 57'6 57'7 57'9								
	SHA 171° 171° 170° 170° 170° 170°		SHA 128° 128° 127° 127° 127° 127°		SHA 210° 207° 205° 203° 201° 199°								
	Greenwich Culmination Time: 11:48		Greenwich Culmination Time: 14:41		Greenwich Culmination Time: 09:28								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	180 53.2 +00.9	S 03 59.6 +00.6	46 27.4 +02.6	S 15 03.3 +00.0	62 22.2 +02.5	S 19 19.8 +00.0	00						
01	195 54.1 +01.0	S 04 00.2 +00.7	61 30.0 +02.5	S 15 03.3 +00.0	77 24.7 +02.5	S 19 19.8 +00.1	01						
02	210 55.1 +00.9	S 04 00.9 +00.6	76 32.5 +02.6	S 15 03.3 +00.1	92 27.2 +02.5	S 19 19.9 +00.0	02						
03	225 56.0 +01.0	S 04 01.5 +00.7	91 35.1 +02.6	S 15 03.4 +00.0	107 29.7 +02.5	S 19 19.9 +00.0	03						
04	240 57.0 +00.9	S 04 02.2 +00.6	106 37.7 +02.6	S 15 03.4 +00.0	122 32.2 +02.4	S 19 19.9 +00.0	04						
05	255 57.9 +01.0	S 04 02.8 +00.7	121 40.3 +02.6	S 15 03.4 +00.1	137 34.6 +02.5	S 19 19.9 +00.0	05						
06	270 58.9 +01.0	S 04 03.5 +00.7	136 42.9 +02.6	S 15 03.5 +00.0	152 37.1 +02.5	S 19 19.9 +00.0	06						
07	285 59.9 +00.9	S 04 04.2 +00.6	151 45.5 +02.6	S 15 03.5 +00.1	167 39.6 +02.5	S 19 19.9 +00.0	07						
08	301 00.8 +01.0	S 04 04.8 +00.7	166 48.1 +02.6	S 15 03.6 +00.0	182 42.1 +02.5	S 19 19.9 +00.0	08						
09	316 01.8 +00.9	S 04 05.5 +00.6	181 50.7 +02.5	S 15 03.6 +00.0	197 44.6 +02.5	S 19 19.9 +00.0	09						
10	331 02.7 +01.0	S 04 06.1 +00.7	196 53.2 +02.6	S 15 03.6 +00.1	212 47.1 +02.5	S 19 19.9 +00.0	10						
11	346 03.7 +01.0	S 04 06.8 +00.6	211 55.8 +02.6	S 15 03.7 +00.0	227 49.6 +02.5	S 19 19.9 +00.0	11						
12	1 04.7 +00.9	S 04 07.4 +00.7	226 58.4 +02.6	S 15 03.7 +00.0	242 52.1 +02.5	S 19 19.9 +00.0	12						
13	16 05.6 +01.0	S 04 08.1 +00.6	242 01.0 +02.6	S 15 03.7 +00.1	257 54.6 +02.5	S 19 19.9 +00.1	13						
14	31 06.6 +00.9	S 04 08.7 +00.7	257 03.6 +02.6	S 15 03.8 +00.0	272 57.1 +02.5	S 19 20.0 +00.0	14						
15	46 07.5 +01.0	S 04 09.4 +00.7	272 06.2 +02.5	S 15 03.8 +00.0	287 59.6 +02.5	S 19 20.0 +00.0	15						
16	61 08.5 +00.9	S 04 10.1 +00.6	287 08.7 +02.6	S 15 03.8 +00.1	303 02.1 +02.5	S 19 20.0 +00.0	16						
17	76 09.4 +01.0	S 04 10.7 +00.7	302 11.3 +02.6	S 15 03.9 +00.0	318 04.6 +02.5	S 19 20.0 +00.0	17						
18	91 10.4 +01.0	S 04 11.4 +00.6	317 13.9 +02.6	S 15 03.9 +00.1	333 07.1 +02.5	S 19 20.0 +00.0	18						
19	106 11.4 +00.9	S 04 12.0 +00.7	332 16.5 +02.6	S 15 04.0 +00.0	348 09.6 +02.5	S 19 20.0 +00.0	19						
20	121 12.3 +01.0	S 04 12.7 +00.6	347 19.1 +02.6	S 15 04.0 +00.0	3 12.1 +02.5	S 19 20.0 +00.0	20						
21	136 13.3 +00.9	S 04 13.3 +00.7	2 21.7 +02.5	S 15 04.0 +00.1	18 14.6 +02.5	S 19 20.0 +00.0	21						
22	151 14.2 +01.0	S 04 14.0 +00.7	17 24.2 +02.6	S 15 04.1 +00.0	33 17.1 +02.5	S 19 20.0 +00.0	22						
23	166 15.2 +01.0	S 04 14.7 +00.6	32 26.8 +02.6	S 15 04.1 +00.0	48 19.6 +02.5	S 19 20.0 +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 00'4 00'4 00'4 00'4 00'4 00'4		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 169° 169° 169° 169° 169° 168°		SHA 035° 035° 035° 035° 035° 035°		SHA 050° 050° 050° 050° 050° 050°								
	Greenwich Culmination Time: 11:55		Greenwich Culmination Time: 20:50		Greenwich Culmination Time: 19:47								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 48.2 +00.2	S	04 20.9 +00.9	139 38.8 -00.3	S	21 36.9 +00.9	210 39.9 -29.7	N	13 02.0 -13.2	00			
01	197 48.4 +00.2	S	04 21.8 +01.0	154 38.5 -00.4	S	21 37.8 +00.8	225 10.2 -29.6	N	12 48.8 -13.4	01			
02	212 48.6 +00.2	S	04 22.8 +00.9	169 38.1 -00.4	S	21 38.6 +00.8	239 40.6 -29.7	N	12 35.4 -13.4	02			
03	227 48.8 +00.2	S	04 23.7 +01.0	184 37.7 -00.4	S	21 39.4 +00.8	254 10.9 -29.7	N	12 22.0 -13.5	03			
04	242 49.0 +00.1	S	04 24.7 +01.0	199 37.3 -00.4	S	21 40.2 +00.8	268 41.2 -29.6	N	12 08.5 -13.6	04			
05	257 49.1 +00.2	S	04 25.7 +00.9	214 36.9 -00.4	S	21 41.0 +00.8	283 11.6 -29.7	N	11 54.9 -13.6	05			
06	272 49.3 +00.2	S	04 26.6 +01.0	229 36.5 -00.3	S	21 41.8 +00.8	297 41.9 -29.6	N	11 41.3 -13.7	06			
07	287 49.5 +00.2	S	04 27.6 +01.0	244 36.2 -00.4	S	21 42.6 +00.8	312 12.3 -29.6	N	11 27.6 -13.8	07			
08	302 49.7 +00.2	S	04 28.6 +00.9	259 35.8 -00.4	S	21 43.4 +00.8	326 42.7 -29.6	N	11 13.8 -13.9	08			
09	317 49.9 +00.2	S	04 29.5 +01.0	274 35.4 -00.4	S	21 44.2 +00.8	341 13.1 -29.6	N	10 59.9 -14.0	09			
10	332 50.1 +00.2	S	04 30.5 +01.0	289 35.0 -00.4	S	21 45.0 +00.8	355 43.5 -29.5	N	10 45.9 -14.0	10			
11	347 50.3 +00.2	S	04 31.5 +00.9	304 34.6 -00.3	S	21 45.8 +00.8	10 14.0 -29.6	N	10 31.9 -14.1	11			
12	2 50.5 +00.2	S	04 32.4 +01.0	319 34.3 -00.4	S	21 46.6 +00.9	24 44.4 -29.6	N	10 17.8 -14.1	12			
13	17 50.7 +00.2	S	04 33.4 +00.9	334 33.9 -00.4	S	21 47.5 +00.8	39 14.8 -29.5	N	10 03.7 -14.3	13			
14	32 50.9 +00.1	S	04 34.3 +01.0	349 33.5 -00.4	S	21 48.3 +00.8	53 45.3 -29.5	N	09 49.4 -14.3	14			
15	47 51.0 +00.2	S	04 35.3 +01.0	4 33.1 -00.4	S	21 49.1 +00.8	68 15.8 -29.6	N	09 35.1 -14.4	15			
16	62 51.2 +00.2	S	04 36.3 +00.9	19 32.7 -00.4	S	21 49.9 +00.8	82 46.2 -29.5	N	09 20.7 -14.4	16			
17	77 51.4 +00.2	S	04 37.2 +01.0	34 32.3 -00.4	S	21 50.7 +00.8	97 16.7 -29.5	N	09 06.3 -14.5	17			
18	92 51.6 +00.2	S	04 38.2 +01.0	49 31.9 -00.3	S	21 51.5 +00.8	111 47.2 -29.5	N	08 51.8 -14.5	18			
19	107 51.8 +00.2	S	04 39.2 +00.9	64 31.6 -00.4	S	21 52.3 +00.7	126 17.7 -29.5	N	08 37.3 -14.7	19			
20	122 52.0 +00.2	S	04 40.1 +01.0	79 31.2 -00.4	S	21 53.0 +00.8	140 48.2 -29.6	N	08 22.6 -14.6	20			
21	137 52.2 +00.2	S	04 41.1 +00.9	94 30.8 -00.4	S	21 53.8 +00.8	155 18.6 -29.5	N	08 08.0 -14.8	21			
22	152 52.4 +00.2	S	04 42.0 +01.0	109 30.4 -00.4	S	21 54.6 +00.8	169 49.1 -29.5	N	07 53.2 -14.8	22			
23	167 52.6 +00.1	S	04 43.0 +01.0	124 30.0 -00.4	S	21 55.4 +00.8	184 19.6 -29.5	N	07 38.4 -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 16'0 16'0 16'0 16'0 16'0 16'0			SD 00'2 00'2 00'2 00'2 00'2 00'2			SD 15'8 15'8 15'9 15'9 16'0 16'0						
	HP 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 58'0 58'2 58'3 58'4 58'6 58'7						
	SHA 170° 170° 170° 169° 169° 169°			SHA 127° 126° 126° 126° 126° 126°			SHA 197° 195° 192° 190° 188° 186°						
	Greenwich Culmination Time: 11:48			Greenwich Culmination Time: 14:41			Greenwich Culmination Time: 10:17						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	181 16.2 +00.9	S	04 15.3 +00.7	47 29.4 +02.6	S	15 04.1 +00.1	63 22.1 +02.5	S	19 20.0 +00.0	00			
01	196 17.1 +01.0	S	04 16.0 +00.6	62 32.0 +02.6	S	15 04.2 +00.0	78 24.6 +02.5	S	19 20.0 +00.0	01			
02	211 18.1 +00.9	S	04 16.6 +00.7	77 34.6 +02.5	S	15 04.2 +00.0	93 27.1 +02.5	S	19 20.0 +00.1	02			
03	226 19.0 +01.0	S	04 17.3 +00.6	92 37.1 +02.6	S	15 04.2 +00.1	108 29.6 +02.5	S	19 20.1 +00.0	03			
04	241 20.0 +00.9	S	04 17.9 +00.7	107 39.7 +02.6	S	15 04.3 +00.0	123 32.1 +02.4	S	19 20.1 +00.0	04			
05	256 20.9 +01.0	S	04 18.6 +00.6	122 42.3 +02.6	S	15 04.3 +00.0	138 34.5 +02.5	S	19 20.1 +00.0	05			
06	271 21.9 +00.9	S	04 19.2 +00.7	137 44.9 +02.6	S	15 04.3 +00.1	153 37.0 +02.5	S	19 20.1 +00.0	06			
07	286 22.8 +01.0	S	04 19.9 +00.7	152 47.5 +02.5	S	15 04.4 +00.0	168 39.5 +02.5	S	19 20.1 +00.0	07			
08	301 23.8 +01.0	S	04 20.6 +00.6	167 50.0 +02.6	S	15 04.4 +00.0	183 42.0 +02.5	S	19 20.1 +00.0	08			
09	316 24.8 +00.9	S	04 21.2 +00.7	182 52.6 +02.6	S	15 04.4 +00.1	198 44.5 +02.5	S	19 20.1 +00.0	09			
10	331 25.7 +01.0	S	04 21.9 +00.6	197 55.2 +02.6	S	15 04.5 +00.0	213 47.0 +02.5	S	19 20.1 +00.0	10			
11	346 26.7 +00.9	S	04 22.5 +00.7	212 57.8 +02.5	S	15 04.5 +00.0	228 49.5 +02.5	S	19 20.1 +00.0	11			
12	1 27.6 +01.0	S	04 23.2 +00.6	228 00.3 +02.6	S	15 04.5 +00.1	243 52.0 +02.5	S	19 20.1 +00.0	12			
13	16 28.6 +00.9	S	04 23.8 +00.7	243 02.9 +02.6	S	15 04.6 +00.0	258 54.5 +02.5	S	19 20.1 +00.0	13			
14	31 29.5 +01.0	S	04 24.5 +00.6	258 05.5 +02.6	S	15 04.6 +00.0	273 57.0 +02.5	S	19 20.1 +00.0	14			
15	46 30.5 +01.0	S	04 25.1 +00.7	273 08.1 +02.6	S	15 04.6 +00.1	288 59.5 +02.5	S	19 20.1 +00.1	15			
16	61 31.5 +00.9	S	04 25.8 +00.7	288 10.7 +02.5	S	15 04.7 +00.0	304 02.0 +02.5	S	19 20.2 +00.0	16			
17	76 32.4 +01.0	S	04 26.5 +00.6	303 13.2 +02.6	S	15 04.7 +00.0	319 04.5 +02.5	S	19 20.2 +00.0	17			
18	91 33.4 +00.9	S	04 27.1 +00.7	318 15.8 +02.6	S	15 04.7 +00.1	334 07.0 +02.4	S	19 20.2 +00.0	18			
19	106 34.3 +01.0	S	04 27.8 +00.6	333 18.4 +02.6	S	15 04.8 +00.0	349 09.4 +02.5	S	19 20.2 +00.0	19			
20	121 35.3 +00.9	S	04 28.4 +00.7	348 21.0 +02.5	S	15 04.8 +00.0	4 11.9 +02.5	S	19 20.2 +00.0	20			
21	136 36.2 +01.0	S	04 29.1 +00.6	3 23.5 +02.6	S	15 04.8 +00.1	19 14.4 +02.5	S	19 20.2 +00.0	21			
22	151 37.2 +00.9	S	04 29.7 +00.7	18 26.1 +02.6	S	15 04.9 +00.0	34 16.9 +02.5	S	19 20.2 +00.0	22			
23	166 38.1 +01.0	S	04 30.4 +00.6	33 28.7 +02.6	S	15 04.9 +00.0	49 19.4 +02.5	S	19 20.2 +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 00'0 00'0 00'0 00'0 00'0 00'0			SD 00'4 00'4 00'4 00'4 00'4 00'4			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 168° 168° 168° 168° 168° 168°			SHA 035° 035° 035° 035° 035° 035°			SHA 050° 050° 050° 050° 050° 050°						
	Greenwich Culmination Time: 11:54			Greenwich Culmination Time: 20:46			Greenwich Culmination Time: 19:43						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 52.7 +00.2	S 04 44.0 +00.9	139 29.6 -00.4	S 21 56.2 +00.8	198 50.1 -29.5	N 07 23.6 -14.9	00						
01	197 52.9 +00.2	S 04 44.9 +01.0	154 29.2 -00.3	S 21 57.0 +00.8	213 20.6 -29.5	N 07 08.7 -15.0	01						
02	212 53.1 +00.2	S 04 45.9 +01.0	169 28.9 -00.4	S 21 57.8 +00.8	227 51.1 -29.5	N 06 53.7 -15.0	02						
03	227 53.3 +00.2	S 04 46.9 +00.9	184 28.5 -00.4	S 21 58.6 +00.8	242 21.6 -29.5	N 06 38.7 -15.1	03						
04	242 53.5 +00.2	S 04 47.8 +01.0	199 28.1 -00.4	S 21 59.4 +00.8	256 52.1 -29.5	N 06 23.6 -15.1	04						
05	257 53.7 +00.2	S 04 48.8 +00.9	214 27.7 -00.4	S 22 00.2 +00.8	271 22.6 -29.5	N 06 08.5 -15.2	05						
06	272 53.9 +00.1	S 04 49.7 +01.0	229 27.3 -00.4	S 22 01.0 +00.8	285 53.1 -29.5	N 05 53.3 -15.2	06						
07	287 54.0 +00.2	S 04 50.7 +01.0	244 26.9 -00.4	S 22 01.8 +00.7	300 23.6 -29.6	N 05 38.1 -15.2	07						
08	302 54.2 +00.2	S 04 51.7 +00.9	259 26.5 -00.4	S 22 02.5 +00.8	314 54.0 -29.5	N 05 22.9 -15.3	08						
09	317 54.4 +00.2	S 04 52.6 +01.0	274 26.1 -00.3	S 22 03.3 +00.8	329 24.5 -29.5	N 05 07.6 -15.4	09						
10	332 54.6 +00.2	S 04 53.6 +00.9	289 25.8 -00.4	S 22 04.1 +00.8	343 55.0 -29.6	N 04 52.2 -15.4	10						
11	347 54.8 +00.2	S 04 54.5 +01.0	304 25.4 -00.4	S 22 04.9 +00.8	358 25.4 -29.5	N 04 36.8 -15.4	11						
12	2 55.0 +00.2	S 04 55.5 +01.0	319 25.0 -00.4	S 22 05.7 +00.8	12 55.9 -29.6	N 04 21.4 -15.5	12						
13	17 55.2 +00.2	S 04 56.5 +00.9	334 24.6 -00.4	S 22 06.5 +00.7	27 26.3 -29.6	N 04 05.9 -15.5	13						
14	32 55.4 +00.1	S 04 57.4 +01.0	349 24.2 -00.4	S 22 07.2 +00.8	41 56.7 -29.6	N 03 50.4 -15.5	14						
15	47 55.5 +00.2	S 04 58.4 +01.0	4 23.8 -00.4	S 22 08.0 +00.8	56 27.1 -29.6	N 03 34.9 -15.6	15						
16	62 55.7 +00.2	S 04 59.4 +00.9	19 23.4 -00.4	S 22 08.8 +00.8	70 57.5 -29.6	N 03 19.3 -15.6	16						
17	77 55.9 +00.2	S 05 00.3 +01.0	34 23.0 -00.4	S 22 09.6 +00.8	85 27.9 -29.6	N 03 03.7 -15.6	17						
18	92 56.1 +00.2	S 05 01.3 +00.9	49 22.6 -00.3	S 22 10.4 +00.7	99 58.3 -29.7	N 02 48.1 -15.7	18						
19	107 56.3 +00.2	S 05 02.2 +01.0	64 22.3 -00.4	S 22 11.1 +00.8	114 28.6 -29.7	N 02 32.4 -15.7	19						
20	122 56.5 +00.1	S 05 03.2 +01.0	79 21.9 -00.4	S 22 11.9 +00.8	128 58.9 -29.7	N 02 16.7 -15.7	20						
21	137 56.6 +00.2	S 05 04.2 +00.9	94 21.5 -00.4	S 22 12.7 +00.8	143 29.2 -29.7	N 02 01.0 -15.7	21						
22	152 56.8 +00.2	S 05 05.1 +01.0	109 21.1 -00.4	S 22 13.5 +00.7	157 59.5 -29.7	N 01 45.3 -15.8	22						
23	167 57.0 +00.2	S 05 06.1 +00.9	124 20.7 -00.4	S 22 14.2 +00.8	172 29.8 -29.7	N 01 29.5 -15.8	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'0 16'0 16'0 16'0 16'0 16'0		SD 00'2 00'2 00'2 00'2 00'2 00'2		SD 16'0 16'1 16'1 16'1 16'2 16'2								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'2 00'2 00'2 00'2 00'2 00'2		HP 58'8 58'9 59'1 59'2 59'3 59'4								
	SHA 169° 169° 169° 168° 168° 168°		SHA 126° 125° 125° 125° 125° 125°		SHA 184° 182° 180° 177° 175° 173°								
	Greenwich Culmination Time: 11:48		Greenwich Culmination Time: 14:42		Greenwich Culmination Time: 11:06								

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	181 39.1 +00.9	S 04 31.0 +00.7	48 31.3 +02.5	S 15 04.9 +00.1	64 21.9 +02.5	S 19 20.2 +00.0	00						
01	196 40.0 +01.0	S 04 31.7 +00.6	63 33.8 +02.6	S 15 05.0 +00.0	79 24.4 +02.5	S 19 20.2 +00.0	01						
02	211 41.0 +01.0	S 04 32.3 +00.7	78 36.4 +02.6	S 15 05.0 +00.0	94 26.9 +02.5	S 19 20.2 +00.0	02						
03	226 42.0 +00.9	S 04 33.0 +00.7	93 39.0 +02.5	S 15 05.0 +00.0	109 29.4 +02.5	S 19 20.2 +00.0	03						
04	241 42.9 +01.0	S 04 33.7 +00.6	108 41.5 +02.6	S 15 05.0 +00.1	124 31.9 +02.4	S 19 20.2 +00.0	04						
05	256 43.9 +00.9	S 04 34.3 +00.7	123 44.1 +02.6	S 15 05.1 +00.0	139 34.3 +02.5	S 19 20.2 +00.0	05						
06	271 44.8 +01.0	S 04 35.0 +00.6	138 46.7 +02.6	S 15 05.1 +00.0	154 36.8 +02.5	S 19 20.2 +00.0	06						
07	286 45.8 +00.9	S 04 35.6 +00.7	153 49.3 +02.5	S 15 05.1 +00.1	169 39.3 +02.5	S 19 20.2 +00.1	07						
08	301 46.7 +01.0	S 04 36.3 +00.6	168 51.8 +02.6	S 15 05.2 +00.0	184 41.8 +02.5	S 19 20.3 +00.0	08						
09	316 47.7 +00.9	S 04 36.9 +00.7	183 54.4 +02.6	S 15 05.2 +00.0	199 44.3 +02.5	S 19 20.3 +00.0	09						
10	331 48.6 +01.0	S 04 37.6 +00.6	198 57.0 +02.5	S 15 05.2 +00.1	214 46.8 +02.5	S 19 20.3 +00.0	10						
11	346 49.6 +00.9	S 04 38.2 +00.7	213 59.5 +02.6	S 15 05.3 +00.0	229 49.3 +02.5	S 19 20.3 +00.0	11						
12	1 50.5 +01.0	S 04 38.9 +00.7	229 02.1 +02.6	S 15 05.3 +00.0	244 51.8 +02.5	S 19 20.3 +00.0	12						
13	16 51.5 +00.9	S 04 39.6 +00.6	244 04.7 +02.5	S 15 05.3 +00.1	259 54.3 +02.4	S 19 20.3 +00.0	13						
14	31 52.4 +01.0	S 04 40.2 +00.7	259 07.2 +02.6	S 15 05.4 +00.0	274 56.7 +02.5	S 19 20.3 +00.0	14						
15	46 53.4 +01.0	S 04 40.9 +00.6	274 09.8 +02.6	S 15 05.4 +00.0	289 59.2 +02.5	S 19 20.3 +00.0	15						
16	61 54.4 +00.9	S 04 41.5 +00.7	289 12.4 +02.5	S 15 05.4 +00.0	305 01.7 +02.5	S 19 20.3 +00.0	16						
17	76 55.3 +01.0	S 04 42.2 +00.6	304 14.9 +02.6	S 15 05.4 +00.1	320 04.2 +02.5	S 19 20.3 +00.0	17						
18	91 56.3 +00.9	S 04 42.8 +00.7	319 17.5 +02.6	S 15 05.5 +00.0	335 06.7 +02.5	S 19 20.3 +00.0	18						
19	106 57.2 +01.0	S 04 43.5 +00.6	334 20.1 +02.5	S 15 05.5 +00.0	350 09.2 +02.5	S 19 20.3 +00.0	19						
20	121 58.2 +00.9	S 04 44.1 +00.7	349 22.6 +02.6	S 15 05.5 +00.1	5 11.7 +02.5	S 19 20.3 +00.0	20						
21	136 59.1 +01.0	S 04 44.8 +00.6	4 25.2 +02.6	S 15 05.6 +00.0	20 14.2 +02.4	S 19 20.3 +00.0	21						
22	152 00.1 +00.9	S 04 45.4 +00.7	19 27.8 +02.5	S 15 05.6 +00.0	35 16.6 +02.5	S 19 20.3 +00.0	22						
23	167 01.0 +01.0	S 04 46.1 +00.6	34 30.3 +02.6	S 15 05.6 +00.1	50 19.1 +02.5	S 19 20.3 +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 00'0 00'0 00'0 00'0 00'0 00'0		SD 00'4 00'4 00'4 00'4 00'4 00'4		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 168° 168° 168° 167° 167° 167°		SHA 035° 035° 035° 035° 035° 035°		SHA 050° 050° 050° 050° 050° 050°								
	Greenwich Culmination Time: 11:52		Greenwich Culmination Time: 20:42		Greenwich Culmination Time: 19:39								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 57.2 +00.2	S	05 07.0 +01.0	139 20.3 -00.4	S	22 15.0 +00.8	187 00.1 -29.8	N	01 13.7 -15.8				
01	197 57.4 +00.2	S	05 08.0 +01.0	154 19.9 -00.4	S	22 15.8 +00.8	201 30.3 -29.8	N	00 57.9 -15.8				
02	212 57.6 +00.1	S	05 09.0 +00.9	169 19.5 -00.4	S	22 16.6 +00.7	216 00.5 -29.8	N	00 42.1 -15.9				
03	227 57.7 +00.2	S	05 09.9 +01.0	184 19.1 -00.4	S	22 17.3 +00.8	230 30.7 -29.8	N	00 26.2 -15.8				
04	242 57.9 +00.2	S	05 10.9 +00.9	199 18.7 -00.4	S	22 18.1 +00.8	245 00.9 -29.9	N	00 10.4 -15.9				
05	257 58.1 +00.2	S	05 11.8 +01.0	214 18.3 -00.4	S	22 18.9 +00.7	259 31.0 -29.9	S	00 05.5 +15.9				
06	272 58.3 +00.2	S	05 12.8 +00.9	229 17.9 -00.3	S	22 19.6 +00.8	274 01.1 -29.9	S	00 21.4 +15.9				
07	287 58.5 +00.2	S	05 13.7 +01.0	244 17.6 -00.4	S	22 20.4 +00.8	288 31.2 -30.0	S	00 37.3 +15.9				
08	302 58.7 +00.1	S	05 14.7 +01.0	259 17.2 -00.4	S	22 21.2 +00.7	303 01.2 -29.9	S	00 53.2 +15.9				
09	317 58.8 +00.2	S	05 15.7 +00.9	274 16.8 -00.4	S	22 21.9 +00.8	317 31.3 -30.0	S	01 09.1 +16.0				
10	332 59.0 +00.2	S	05 16.6 +01.0	289 16.4 -00.4	S	22 22.7 +00.8	332 01.3 -30.1	S	01 25.1 +15.9				
11	347 59.2 +00.2	S	05 17.6 +00.9	304 16.0 -00.4	S	22 23.5 +00.7	346 31.2 -30.0	S	01 41.0 +15.9				
12	2 59.4 +00.2	S	05 18.5 +01.0	319 15.6 -00.4	S	22 24.2 +00.8	1 01.2 -30.2	S	01 56.9 +16.0				
13	17 59.6 +00.2	S	05 19.5 +01.0	334 15.2 -00.4	S	22 25.0 +00.7	15 31.0 -30.1	S	02 12.9 +15.9				
14	32 59.8 +00.1	S	05 20.5 +00.9	349 14.8 -00.4	S	22 25.7 +00.8	30 00.9 -30.2	S	02 28.8 +15.9				
15	47 59.9 +00.2	S	05 21.4 +01.0	4 14.4 -00.4	S	22 26.5 +00.8	44 30.7 -30.2	S	02 44.7 +16.0				
16	63 00.1 +00.2	S	05 22.4 +00.9	19 14.0 -00.4	S	22 27.3 +00.7	59 00.5 -30.2	S	03 00.7 +15.9				
17	78 00.3 +00.2	S	05 23.3 +01.0	34 13.6 -00.4	S	22 28.0 +00.8	73 30.3 -30.3	S	03 16.6 +15.9				
18	93 00.5 +00.2	S	05 24.3 +00.9	49 13.2 -00.4	S	22 28.8 +00.7	87 60.0 -30.3	S	03 32.5 +15.9				
19	108 00.7 +00.1	S	05 25.2 +01.0	64 12.8 -00.4	S	22 29.5 +00.8	102 29.7 -30.4	S	03 48.4 +15.9				
20	123 00.8 +00.2	S	05 26.2 +01.0	79 12.4 -00.4	S	22 30.3 +00.7	116 59.3 -30.4	S	04 04.3 +15.9				
21	138 01.0 +00.2	S	05 27.2 +00.9	94 12.0 -00.4	S	22 31.0 +00.8	131 28.9 -30.5	S	04 20.2 +15.9				
22	153 01.2 +00.2	S	05 28.1 +01.0	109 11.6 -00.4	S	22 31.8 +00.7	145 58.4 -30.5	S	04 36.1 +15.8				
23	168 01.4 +00.2	S	05 29.1 +00.9	124 11.2 -00.4	S	22 32.5 +00.8	160 27.9 -30.5	S	04 51.9 +15.9				
	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 00'2 00'2 00'2 00'2 00'2 00'2			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 00'2 00'2 00'2 00'2 00'2 00'2			HP 59'5 59'6 59'7 59'8 59'8 59'9						
	SHA 168° 168° 168° 168° 167° 167°			SHA 124° 124° 124° 124° 124° 123°			SHA 171° 169° 167° 165° 162° 160°						
	Greenwich Culmination Time: 11:48			Greenwich Culmination Time: 14:43			Greenwich Culmination Time: 11:55						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 02.0 +00.9	S	04 46.7 +00.7	49 32.9 +02.6	S	15 05.7 +00.0	65 21.6 +02.5	S	19 20.3 +00.1				
01	197 02.9 +01.0	S	04 47.4 +00.7	64 35.5 +02.5	S	15 05.7 +00.0	80 24.1 +02.5	S	19 20.4 +00.0				
02	212 03.9 +00.9	S	04 48.1 +00.6	79 38.0 +02.6	S	15 05.7 +00.0	95 26.6 +02.5	S	19 20.4 +00.0				
03	227 04.8 +01.0	S	04 48.7 +00.7	94 40.6 +02.6	S	15 05.7 +00.1	110 29.1 +02.5	S	19 20.4 +00.0				
04	242 05.8 +00.9	S	04 49.4 +00.6	109 43.2 +02.5	S	15 05.8 +00.0	125 31.6 +02.4	S	19 20.4 +00.0				
05	257 06.7 +01.0	S	04 50.0 +00.7	124 45.7 +02.6	S	15 05.8 +00.0	140 34.0 +02.5	S	19 20.4 +00.0				
06	272 07.7 +00.9	S	04 50.7 +00.6	139 48.3 +02.6	S	15 05.8 +00.1	155 36.5 +02.5	S	19 20.4 +00.0				
07	287 08.6 +01.0	S	04 51.3 +00.7	154 50.9 +02.5	S	15 05.9 +00.0	170 39.0 +02.5	S	19 20.4 +00.0				
08	302 09.6 +00.9	S	04 52.0 +00.6	169 53.4 +02.6	S	15 05.9 +00.0	185 41.5 +02.5	S	19 20.4 +00.0				
09	317 10.5 +01.0	S	04 52.6 +00.7	184 56.0 +02.5	S	15 05.9 +00.0	200 44.0 +02.5	S	19 20.4 +00.0				
10	332 11.5 +00.9	S	04 53.3 +00.6	199 58.5 +02.6	S	15 05.9 +00.1	215 46.5 +02.5	S	19 20.4 +00.0				
11	347 12.4 +01.0	S	04 53.9 +00.7	215 01.1 +02.6	S	15 06.0 +00.0	230 49.0 +02.4	S	19 20.4 +00.0				
12	2 13.4 +00.9	S	04 54.6 +00.7	230 03.7 +02.5	S	15 06.0 +00.0	245 51.4 +02.5	S	19 20.4 +00.0				
13	17 14.3 +01.0	S	04 55.3 +00.6	245 06.2 +02.6	S	15 06.0 +00.0	260 53.9 +02.5	S	19 20.4 +00.0				
14	32 15.3 +00.9	S	04 55.9 +00.7	260 08.8 +02.6	S	15 06.0 +00.1	275 56.4 +02.5	S	19 20.4 +00.0				
15	47 16.2 +01.0	S	04 56.6 +00.6	275 11.4 +02.5	S	15 06.1 +00.0	290 58.9 +02.5	S	19 20.4 +00.0				
16	62 17.2 +00.9	S	04 57.2 +00.7	290 13.9 +02.6	S	15 06.1 +00.0	306 01.4 +02.5	S	19 20.4 +00.0				
17	77 18.1 +01.0	S	04 57.9 +00.6	305 16.5 +02.5	S	15 06.1 +00.1	321 03.9 +02.4	S	19 20.4 +00.0				
18	92 19.1 +00.9	S	04 58.5 +00.7	320 19.0 +02.6	S	15 06.2 +00.0	336 06.3 +02.5	S	19 20.4 +00.0				
19	107 20.0 +01.0	S	04 59.2 +00.6	335 21.6 +02.5	S	15 06.2 +00.0	351 08.8 +02.5	S	19 20.4 +00.0				
20	122 21.0 +00.9	S	04 59.8 +00.7	350 24.1 +02.6	S	15 06.2 +00.0	6 11.3 +02.5	S	19 20.4 +00.1				
21	137 21.9 +01.0	S	05 00.5 +00.6	5 26.7 +02.6	S	15 06.2 +00.1	21 13.8 +02.5	S	19 20.5 +00.0				
22	152 22.9 +00.9	S	05 01.1 +00.7	20 29.3 +02.5	S	15 06.3 +00.0	36 16.3 +02.5	S	19 20.5 +00.0				
23	167 23.8 +01.0	S	05 01.8 +00.6	35 31.8 +02.6	S	15 06.3 +00.0	51 18.8 +02.4	S	19 20.5 +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 00'4 00'4 00'4 00'4 00'4 00'4			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 167° 167° 167° 167° 167° 167°			SHA 035° 035° 035° 035° 035° 035°			SHA 050° 050° 050° 050° 050° 050°						
	Greenwich Culmination Time: 11:51			Greenwich Culmination Time: 20:38			Greenwich Culmination Time: 19:35						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	183	01.6	+00.1	S 05 30.0	+01.0	139	10.8	-00.3	S 22 33.3	+00.7	174	57.4	-30.6	S 05 07.8	+15.8	00
01	198	01.7	+00.2	S 05 31.0	+00.9	154	10.5	-00.4	S 22 34.0	+00.8	189	26.8	-30.6	S 05 23.6	+15.8	01
02	213	01.9	+00.2	S 05 31.9	+01.0	169	10.1	-00.4	S 22 34.8	+00.7	203	56.2	-30.7	S 05 39.4	+15.8	02
03	228	02.1	+00.2	S 05 32.9	+01.0	184	09.7	-00.4	S 22 35.5	+00.8	218	25.5	-30.7	S 05 55.2	+15.7	03
04	243	02.3	+00.2	S 05 33.9	+00.9	199	09.3	-00.4	S 22 36.3	+00.7	232	54.8	-30.8	S 06 10.9	+15.7	04
05	258	02.5	+00.1	S 05 34.8	+01.0	214	08.9	-00.4	S 22 37.0	+00.8	247	24.0	-30.8	S 06 26.6	+15.7	05
06	273	02.6	+00.2	S 05 35.8	+00.9	229	08.5	-00.4	S 22 37.8	+00.7	261	53.2	-30.9	S 06 42.3	+15.7	06
07	288	02.8	+00.2	S 05 36.7	+01.0	244	08.1	-00.4	S 22 38.5	+00.8	276	22.3	-30.9	S 06 58.0	+15.6	07
08	303	03.0	+00.2	S 05 37.7	+00.9	259	07.7	-00.4	S 22 39.3	+00.7	290	51.4	-31.0	S 07 13.6	+15.6	08
09	318	03.2	+00.1	S 05 38.6	+01.0	274	07.3	-00.4	S 22 40.0	+00.8	305	20.4	-31.1	S 07 29.2	+15.6	09
10	333	03.3	+00.2	S 05 39.6	+00.9	289	06.9	-00.4	S 22 40.8	+00.7	319	49.3	-31.0	S 07 44.8	+15.5	10
11	348	03.5	+00.2	S 05 40.5	+01.0	304	06.5	-00.4	S 22 41.5	+00.7	334	18.3	-31.2	S 08 00.3	+15.5	11
12	3	03.7	+00.2	S 05 41.5	+01.0	319	06.1	-00.4	S 22 42.2	+00.8	348	47.1	-31.2	S 08 15.8	+15.5	12
13	18	03.9	+00.2	S 05 42.5	+00.9	334	05.7	-00.4	S 22 43.0	+00.7	3	15.9	-31.2	S 08 31.3	+15.4	13
14	33	04.1	+00.1	S 05 43.4	+01.0	349	05.3	-00.4	S 22 43.7	+00.7	17	44.7	-31.4	S 08 46.7	+15.3	14
15	48	04.2	+00.2	S 05 44.4	+00.9	4	04.9	-00.4	S 22 44.4	+00.8	32	13.3	-31.3	S 09 02.0	+15.4	15
16	63	04.4	+00.2	S 05 45.3	+01.0	19	04.5	-00.4	S 22 45.2	+00.7	46	42.0	-31.5	S 09 17.4	+15.2	16
17	78	04.6	+00.2	S 05 46.3	+00.9	34	04.1	-00.4	S 22 45.9	+00.8	61	10.5	-31.5	S 09 32.6	+15.2	17
18	93	04.8	+00.1	S 05 47.2	+01.0	49	03.7	-00.4	S 22 46.7	+00.7	75	39.0	-31.5	S 09 47.8	+15.2	18
19	108	04.9	+00.2	S 05 48.2	+00.9	64	03.3	-00.4	S 22 47.4	+00.7	90	07.5	-31.6	S 10 03.0	+15.1	19
20	123	05.1	+00.2	S 05 49.1	+01.0	79	02.9	-00.4	S 22 48.1	+00.8	104	35.9	-31.7	S 10 18.1	+15.1	20
21	138	05.3	+00.2	S 05 50.1	+00.9	94	02.5	-00.4	S 22 48.9	+00.7	119	04.2	-31.8	S 10 33.2	+15.0	21
22	153	05.5	+00.1	S 05 51.0	+01.0	109	02.1	-00.4	S 22 49.6	+00.7	133	32.4	-31.8	S 10 48.2	+14.9	22
23	168	05.6	+00.2	S 05 52.0	+01.0	124	01.7	-00.4	S 22 50.3	+00.7	148	00.6	-31.9	S 11 03.1	+14.9	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 00'2 00'2 00'2 00'2 00'2 00'2					SD 16'3 16'4 16'4 16'4 16'4 16'4					
	HP 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 60'0 60'1 60'1 60'2 60'2 60'2					
	SHA 167° 167° 167° 167° 166° 166°					SHA 123° 123° 123° 123° 122° 122°					SHA 158° 156° 154° 151° 149° 147°					
	Greenwich Culmination Time: 11:47					Greenwich Culmination Time: 14:43					Greenwich Culmination Time: 12:46					

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	182	24.8	+00.9	S 05 02.4	+00.7	50	34.4	+02.5	S 15 06.3	+00.0	66	21.2	+02.5	S 19 20.5	+00.0	00
01	197	25.7	+01.0	S 05 03.1	+00.6	65	36.9	+02.6	S 15 06.3	+00.1	81	23.7	+02.5	S 19 20.5	+00.0	01
02	212	26.7	+00.9	S 05 03.7	+00.7	80	39.5	+02.6	S 15 06.4	+00.0	96	26.2	+02.5	S 19 20.5	+00.0	02
03	227	27.6	+01.0	S 05 04.4	+00.6	95	42.1	+02.5	S 15 06.4	+00.0	111	28.7	+02.5	S 19 20.5	+00.0	03
04	242	28.6	+00.9	S 05 05.0	+00.7	110	44.6	+02.6	S 15 06.4	+00.0	126	31.2	+02.4	S 19 20.5	+00.0	04
05	257	29.5	+01.0	S 05 05.7	+00.7	125	47.2	+02.5	S 15 06.4	+00.1	141	33.6	+02.5	S 19 20.5	+00.0	05
06	272	30.5	+00.9	S 05 06.4	+00.6	140	49.7	+02.6	S 15 06.5	+00.0	156	36.1	+02.5	S 19 20.5	+00.0	06
07	287	31.4	+01.0	S 05 07.0	+00.7	155	52.3	+02.5	S 15 06.5	+00.0	171	38.6	+02.5	S 19 20.5	+00.0	07
08	302	32.4	+00.9	S 05 07.7	+00.6	170	54.8	+02.6	S 15 06.5	+00.0	186	41.1	+02.5	S 19 20.5	+00.0	08
09	317	33.3	+01.0	S 05 08.3	+00.7	185	57.4	+02.5	S 15 06.5	+00.1	201	43.6	+02.4	S 19 20.5	+00.0	09
10	332	34.3	+00.9	S 05 09.0	+00.6	200	59.9	+02.6	S 15 06.6	+00.0	216	46.0	+02.5	S 19 20.5	+00.0	10
11	347	35.2	+01.0	S 05 09.6	+00.7	216	02.5	+02.5	S 15 06.6	+00.0	231	48.5	+02.5	S 19 20.5	+00.0	11
12	2	36.2	+00.9	S 05 10.3	+00.6	231	05.0	+02.6	S 15 06.6	+00.0	246	51.0	+02.5	S 19 20.5	+00.0	12
13	17	37.1	+01.0	S 05 10.9	+00.7	246	07.6	+02.6	S 15 06.6	+00.1	261	53.5	+02.5	S 19 20.5	+00.0	13
14	32	38.1	+00.9	S 05 11.6	+00.6	261	10.2	+02.5	S 15 06.7	+00.0	276	56.0	+02.4	S 19 20.5	+00.0	14
15	47	39.0	+01.0	S 05 12.2	+00.7	276	12.7	+02.6	S 15 06.7	+00.0	291	58.4	+02.5	S 19 20.5	+00.0	15
16	62	40.0	+00.9	S 05 12.9	+00.6	291	15.3	+02.5	S 15 06.7	+00.0	307	00.9	+02.5	S 19 20.5	+00.0	16
17	77	40.9	+01.0	S 05 13.5	+00.7	306	17.8	+02.6	S 15 06.7	+00.1	322	03.4	+02.5	S 19 20.5	+00.0	17
18	92	41.9	+00.9	S 05 14.2	+00.6	321	20.4	+02.5	S 15 06.8	+00.0	337	05.9	+02.5	S 19 20.5	+00.0	18
19	107	42.8	+01.0	S 05 14.8	+00.7	336	22.9	+02.6	S 15 06.8	+00.0	352	08.4	+02.4	S 19 20.5	+00.0	19
20	122	43.8	+00.9	S 05 15.5	+00.6	351	25.5	+02.5	S 15 06.8	+00.0	7	10.8	+02.5	S 19 20.5	+00.0	20
21	137	44.7	+01.0	S 05 16.1	+00.7	6	28.0	+02.6	S 15 06.8	+00.1	22	13.3	+02.5	S 19 20.5	+00.1	21
22	152	45.7	+00.9	S 05 16.8	+00.6	21	30.6	+02.5	S 15 06.9	+00.0	37	15.8	+02.5	S 19 20.6	+00.0	22
23	167	46.6	+01.0	S 05 17.4	+00.7	36	33.1	+02.6	S 15 06.9	+00.0	52	18.3	+02.4	S 19 20.6	+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 00'4 00'4 00'4 00'4 00'4 00'4					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 167° 166° 166° 166° 166° 166°					SHA 035° 035° 035° 035° 035° 035°					SHA 050° 050° 050° 050° 050° 050°					
	Greenwich Culmination Time: 11:49					Greenwich Culmination Time: 20:34					Greenwich Culmination Time: 19:31					

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 05.8 +00.2	S 05 53.0 +00.9	139 01.3 -00.4	S 22 51.0 +00.8	162 28.7 -31.9	S 11 18.0 +14.8	00						
01	198 06.0 +00.2	S 05 53.9 +01.0	154 00.9 -00.4	S 22 51.8 +00.7	176 56.8 -32.0	S 11 32.8 +14.8	01						
02	213 06.2 +00.1	S 05 54.9 +00.9	169 00.5 -00.4	S 22 52.5 +00.7	191 24.8 -32.1	S 11 47.6 +14.6	02						
03	228 06.3 +00.2	S 05 55.8 +01.0	184 00.1 -00.4	S 22 53.2 +00.8	205 52.7 -32.1	S 12 02.2 +14.7	03						
04	243 06.5 +00.2	S 05 56.8 +00.9	198 59.7 -00.4	S 22 54.0 +00.7	220 20.6 -32.2	S 12 16.9 +14.5	04						
05	258 06.7 +00.2	S 05 57.7 +01.0	213 59.3 -00.4	S 22 54.7 +00.7	234 48.4 -32.3	S 12 31.4 +14.5	05						
06	273 06.9 +00.1	S 05 58.7 +00.9	228 58.9 -00.4	S 22 55.4 +00.7	249 16.1 -32.4	S 12 45.9 +14.4	06						
07	288 07.0 +00.2	S 05 59.6 +01.0	243 58.5 -00.4	S 22 56.1 +00.7	263 43.7 -32.4	S 13 00.3 +14.3	07						
08	303 07.2 +00.2	S 06 00.6 +00.9	258 58.1 -00.4	S 22 56.8 +00.8	278 11.3 -32.5	S 13 14.6 +14.3	08						
09	318 07.4 +00.2	S 06 01.5 +01.0	273 57.7 -00.4	S 22 57.6 +00.7	292 38.8 -32.5	S 13 28.9 +14.1	09						
10	333 07.6 +00.1	S 06 02.5 +00.9	288 57.3 -00.4	S 22 58.3 +00.7	307 06.3 -32.7	S 13 43.0 +14.1	10						
11	348 07.7 +00.2	S 06 03.4 +01.0	303 56.9 -00.4	S 22 59.0 +00.7	321 33.6 -32.7	S 13 57.1 +14.0	11						
12	3 07.9 +00.2	S 06 04.4 +00.9	318 56.5 -00.4	S 22 59.7 +00.7	336 00.9 -32.8	S 14 11.1 +13.9	12						
13	18 08.1 +00.2	S 06 05.3 +01.0	333 56.1 -00.4	S 23 00.4 +00.8	350 28.1 -32.8	S 14 25.0 +13.9	13						
14	33 08.3 +00.1	S 06 06.3 +00.9	348 55.7 -00.4	S 23 01.2 +00.7	4 55.3 -32.9	S 14 38.9 +13.7	14						
15	48 08.4 +00.2	S 06 07.2 +01.0	3 55.3 -00.4	S 23 01.9 +00.7	19 22.4 -33.0	S 14 52.6 +13.7	15						
16	63 08.6 +00.2	S 06 08.2 +00.9	18 54.9 -00.4	S 23 02.6 +00.7	33 49.4 -33.1	S 15 06.3 +13.5	16						
17	78 08.8 +00.1	S 06 09.1 +01.0	33 54.5 -00.4	S 23 03.3 +00.7	48 16.3 -33.2	S 15 19.8 +13.5	17						
18	93 08.9 +00.2	S 06 10.1 +01.0	48 54.1 -00.4	S 23 04.0 +00.7	62 43.1 -33.2	S 15 33.3 +13.3	18						
19	108 09.1 +00.2	S 06 11.1 +00.9	63 53.7 -00.5	S 23 04.7 +00.7	77 09.9 -33.3	S 15 46.6 +13.3	19						
20	123 09.3 +00.2	S 06 12.0 +01.0	78 53.2 -00.4	S 23 05.4 +00.8	91 36.6 -33.4	S 15 59.9 +13.2	20						
21	138 09.5 +00.1	S 06 13.0 +00.9	93 52.8 -00.4	S 23 06.2 +00.7	106 03.2 -33.4	S 16 13.1 +13.1	21						
22	153 09.6 +00.2	S 06 13.9 +01.0	108 52.4 -00.4	S 23 06.9 +00.7	120 29.8 -33.5	S 16 26.2 +12.9	22						
23	168 09.8 +00.2	S 06 14.9 +00.9	123 52.0 -00.4	S 23 07.6 +00.7	134 56.3 -33.6	S 16 39.1 +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	16'0 16'0 16'0 16'0 16'0 16'0		SD	00'2 00'2 00'2 00'2 00'2 00'2		SD	16'4 16'4 16'4 16'4 16'4 16'4						
HP	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	60'3 60'3 60'3 60'3 60'3 60'3						
SHA	166° 166° 166° 166° 166° 165°		SHA	122° 122° 122° 122° 121° 121°		SHA	144° 142° 140° 138° 135° 133°						
Greenwich Culmination Time: 11:47			Greenwich Culmination Time: 14:44			Greenwich Culmination Time: 13:39							

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 47.6 +00.9	S 05 18.1 +00.7	51 35.7 +02.5	S 15 06.9 +00.0	67 20.7 +02.5	S 19 20.6 +00.0	00						
01	197 48.5 +01.0	S 05 18.8 +00.6	66 38.2 +02.6	S 15 06.9 +00.1	82 23.2 +02.5	S 19 20.6 +00.0	01						
02	212 49.5 +00.9	S 05 19.4 +00.7	81 40.8 +02.5	S 15 07.0 +00.0	97 25.7 +02.5	S 19 20.6 +00.0	02						
03	227 50.4 +00.9	S 05 20.1 +00.6	96 43.3 +02.6	S 15 07.0 +00.0	112 28.2 +02.5	S 19 20.6 +00.0	03						
04	242 51.3 +01.0	S 05 20.7 +00.7	111 45.9 +02.5	S 15 07.0 +00.0	127 30.7 +02.4	S 19 20.6 +00.0	04						
05	257 52.3 +00.9	S 05 21.4 +00.6	126 48.4 +02.6	S 15 07.0 +00.1	142 33.1 +02.5	S 19 20.6 +00.0	05						
06	272 53.2 +01.0	S 05 22.0 +00.7	141 51.0 +02.5	S 15 07.1 +00.0	157 35.6 +02.5	S 19 20.6 +00.0	06						
07	287 54.2 +00.9	S 05 22.7 +00.6	156 53.5 +02.5	S 15 07.1 +00.0	172 38.1 +02.5	S 19 20.6 +00.0	07						
08	302 55.1 +01.0	S 05 23.3 +00.7	171 56.0 +02.6	S 15 07.1 +00.0	187 40.6 +02.4	S 19 20.6 +00.0	08						
09	317 56.1 +00.9	S 05 24.0 +00.6	186 58.6 +02.5	S 15 07.1 +00.0	202 43.0 +02.5	S 19 20.6 +00.0	09						
10	332 57.0 +01.0	S 05 24.6 +00.7	202 01.1 +02.6	S 15 07.1 +00.1	217 45.5 +02.5	S 19 20.6 +00.0	10						
11	347 58.0 +00.9	S 05 25.3 +00.6	217 03.7 +02.5	S 15 07.2 +00.0	232 48.0 +02.5	S 19 20.6 +00.0	11						
12	2 58.9 +01.0	S 05 25.9 +00.7	232 06.2 +02.6	S 15 07.2 +00.0	247 50.5 +02.4	S 19 20.6 +00.0	12						
13	17 59.9 +00.9	S 05 26.6 +00.6	247 08.8 +02.5	S 15 07.2 +00.0	262 52.9 +02.5	S 19 20.6 +00.0	13						
14	33 00.8 +01.0	S 05 27.2 +00.7	262 11.3 +02.6	S 15 07.2 +00.1	277 55.4 +02.5	S 19 20.6 +00.0	14						
15	48 01.8 +00.9	S 05 27.9 +00.6	277 13.9 +02.5	S 15 07.3 +00.0	292 57.9 +02.5	S 19 20.6 +00.0	15						
16	63 02.7 +00.9	S 05 28.5 +00.7	292 16.4 +02.6	S 15 07.3 +00.0	308 00.4 +02.4	S 19 20.6 +00.0	16						
17	78 03.6 +01.0	S 05 29.2 +00.6	307 19.0 +02.5	S 15 07.3 +00.0	323 02.8 +02.5	S 19 20.6 +00.0	17						
18	93 04.6 +00.9	S 05 29.8 +00.7	322 21.5 +02.5	S 15 07.3 +00.0	338 05.3 +02.5	S 19 20.6 +00.0	18						
19	108 05.5 +01.0	S 05 30.5 +00.6	337 24.0 +02.6	S 15 07.3 +00.1	353 07.8 +02.5	S 19 20.6 +00.0	19						
20	123 06.5 +00.9	S 05 31.1 +00.7	352 26.6 +02.5	S 15 07.4 +00.0	8 10.3 +02.4	S 19 20.6 +00.0	20						
21	138 07.4 +01.0	S 05 31.8 +00.6	7 29.1 +02.6	S 15 07.4 +00.0	23 12.7 +02.5	S 19 20.6 +00.0	21						
22	153 08.4 +00.9	S 05 32.4 +00.7	22 31.7 +02.5	S 15 07.4 +00.0	38 15.2 +02.5	S 19 20.6 +00.0	22						
23	168 09.3 +01.0	S 05 33.1 +00.6	37 34.2 +02.5	S 15 07.4 +00.0	53 17.7 +02.5	S 19 20.6 +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	00'4 00'4 00'4 00'4 00'4 00'4		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	166° 166° 166° 166° 165° 165°		SHA	035° 035° 035° 035° 035° 035°		SHA	051° 051° 051° 051° 051° 051°						
Greenwich Culmination Time: 11:48			Greenwich Culmination Time: 20:30			Greenwich Culmination Time: 19:27							

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 10.0 +00.1	S 06 15.8 +01.0	138 51.6 -00.4	S 23 08.3 +00.7	149 22.7 -33.7	S 16 52.0 +12.7	00						
01	198 10.1 +00.2	S 06 16.8 +00.9	153 51.2 -00.4	S 23 09.0 +00.7	163 49.0 -33.8	S 17 04.7 +12.7	01						
02	213 10.3 +00.2	S 06 17.7 +01.0	168 50.8 -00.4	S 23 09.7 +00.7	178 15.2 -33.8	S 17 17.4 +12.5	02						
03	228 10.5 +00.2	S 06 18.7 +00.9	183 50.4 -00.4	S 23 10.4 +00.7	192 41.4 -33.9	S 17 29.9 +12.4	03						
04	243 10.7 +00.1	S 06 19.6 +01.0	198 50.0 -00.4	S 23 11.1 +00.7	207 07.5 -34.0	S 17 42.3 +12.3	04						
05	258 10.8 +00.2	S 06 20.6 +00.9	213 49.6 -00.4	S 23 11.8 +00.7	221 33.5 -34.0	S 17 54.6 +12.2	05						
06	273 11.0 +00.2	S 06 21.5 +01.0	228 49.2 -00.4	S 23 12.5 +00.7	235 59.5 -34.1	S 18 06.8 +12.1	06						
07	288 11.2 +00.1	S 06 22.5 +00.9	243 48.8 -00.4	S 23 13.2 +00.7	250 25.4 -34.3	S 18 18.9 +12.0	07						
08	303 11.3 +00.2	S 06 23.4 +01.0	258 48.4 -00.4	S 23 13.9 +00.7	264 51.1 -34.2	S 18 30.9 +11.8	08						
09	318 11.5 +00.2	S 06 24.4 +00.9	273 48.0 -00.4	S 23 14.6 +00.7	279 16.9 -34.4	S 18 42.7 +11.7	09						
10	333 11.7 +00.1	S 06 25.3 +01.0	288 47.6 -00.4	S 23 15.3 +00.7	293 42.5 -34.4	S 18 54.4 +11.6	10						
11	348 11.8 +00.2	S 06 26.3 +00.9	303 47.2 -00.4	S 23 16.0 +00.7	308 08.1 -34.5	S 19 06.0 +11.5	11						
12	3 12.0 +00.2	S 06 27.2 +00.9	318 46.8 -00.4	S 23 16.7 +00.7	322 33.6 -34.6	S 19 17.5 +11.3	12						
13	18 12.2 +00.2	S 06 28.1 +01.0	333 46.4 -00.4	S 23 17.4 +00.7	336 59.0 -34.7	S 19 28.8 +11.2	13						
14	33 12.4 +00.1	S 06 29.1 +00.9	348 46.0 -00.5	S 23 18.1 +00.7	351 24.3 -34.7	S 19 40.0 +11.1	14						
15	48 12.5 +00.2	S 06 30.0 +01.0	3 45.5 -00.4	S 23 18.8 +00.7	5 49.6 -34.8	S 19 51.1 +10.9	15						
16	63 12.7 +00.2	S 06 31.0 +00.9	18 45.1 -00.4	S 23 19.5 +00.7	20 14.8 -34.9	S 20 02.0 +10.8	16						
17	78 12.9 +00.1	S 06 31.9 +01.0	33 44.7 -00.4	S 23 20.2 +00.7	34 39.9 -34.9	S 20 12.8 +10.7	17						
18	93 13.0 +00.2	S 06 32.9 +00.9	48 44.3 -00.4	S 23 20.9 +00.6	49 05.0 -35.1	S 20 23.5 +10.5	18						
19	108 13.2 +00.2	S 06 33.8 +01.0	63 43.9 -00.4	S 23 21.5 +00.7	63 29.9 -35.0	S 20 34.0 +10.4	19						
20	123 13.4 +00.1	S 06 34.8 +00.9	78 43.5 -00.4	S 23 22.2 +00.7	77 54.9 -35.2	S 20 44.4 +10.3	20						
21	138 13.5 +00.2	S 06 35.7 +01.0	93 43.1 -00.4	S 23 22.9 +00.7	92 19.7 -35.2	S 20 54.7 +10.1	21						
22	153 13.7 +00.2	S 06 36.7 +00.9	108 42.7 -00.4	S 23 23.6 +00.7	106 44.5 -35.3	S 21 04.8 +10.0	22						
23	168 13.9 +00.1	S 06 37.6 +01.0	123 42.3 -00.4	S 23 24.3 +00.7	121 09.2 -35.4	S 21 14.8 +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	16'0 16'0 16'0 16'0 16'0 16'0		SD	00'2 00'2 00'2 00'2 00'2 00'2		SD	16'4 16'4 16'4 16'4 16'4 16'4						
HP	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	60'3 60'3 60'3 60'2 60'2 60'2						
SHA	165° 165° 165° 165° 165° 164°		SHA	121° 121° 121° 120° 120° 120°		SHA	130° 128° 125° 123° 121° 118°						
Greenwich Culmination Time: 11:47			Greenwich Culmination Time: 14:44			Greenwich Culmination Time: 14:35							

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 10.3 +00.9	S 05 33.7 +00.7	52 36.7 +02.6	S 15 07.4 +00.1	68 20.2 +02.4	S 19 20.6 +00.0	00						
01	198 11.2 +01.0	S 05 34.4 +00.6	67 39.3 +02.5	S 15 07.5 +00.0	83 22.6 +02.5	S 19 20.6 +00.0	01						
02	213 12.2 +00.9	S 05 35.0 +00.7	82 41.8 +02.6	S 15 07.5 +00.0	98 25.1 +02.5	S 19 20.6 +00.0	02						
03	228 13.1 +00.9	S 05 35.7 +00.6	97 44.4 +02.5	S 15 07.5 +00.0	113 27.6 +02.4	S 19 20.6 +00.0	03						
04	243 14.0 +01.0	S 05 36.3 +00.7	112 46.9 +02.6	S 15 07.5 +00.0	128 30.0 +02.5	S 19 20.6 +00.0	04						
05	258 15.0 +00.9	S 05 37.0 +00.6	127 49.5 +02.5	S 15 07.5 +00.1	143 32.5 +02.5	S 19 20.6 +00.0	05						
06	273 15.9 +01.0	S 05 37.6 +00.7	142 52.0 +02.5	S 15 07.6 +00.0	158 35.0 +02.5	S 19 20.6 +00.0	06						
07	288 16.9 +00.9	S 05 38.3 +00.7	157 54.5 +02.6	S 15 07.6 +00.0	173 37.5 +02.4	S 19 20.6 +00.0	07						
08	303 17.8 +01.0	S 05 39.0 +00.6	172 57.1 +02.5	S 15 07.6 +00.0	188 39.9 +02.5	S 19 20.6 +00.0	08						
09	318 18.8 +00.9	S 05 39.6 +00.7	187 59.6 +02.5	S 15 07.6 +00.0	203 42.4 +02.5	S 19 20.6 +00.0	09						
10	333 19.7 +00.9	S 05 40.3 +00.6	203 02.1 +02.6	S 15 07.6 +00.1	218 44.9 +02.5	S 19 20.6 +00.0	10						
11	348 20.6 +01.0	S 05 40.9 +00.7	218 04.7 +02.5	S 15 07.7 +00.0	233 47.4 +02.4	S 19 20.6 +00.0	11						
12	3 21.6 +00.9	S 05 41.6 +00.6	233 07.2 +02.6	S 15 07.7 +00.0	248 49.8 +02.5	S 19 20.6 +00.0	12						
13	18 22.5 +01.0	S 05 42.2 +00.7	248 09.8 +02.5	S 15 07.7 +00.0	263 52.3 +02.5	S 19 20.6 +00.1	13						
14	33 23.5 +00.9	S 05 42.9 +00.6	263 12.3 +02.5	S 15 07.7 +00.0	278 54.8 +02.4	S 19 20.7 +00.0	14						
15	48 24.4 +01.0	S 05 43.5 +00.7	278 14.8 +02.6	S 15 07.7 +00.1	293 57.2 +02.5	S 19 20.7 +00.0	15						
16	63 25.4 +00.9	S 05 44.2 +00.6	293 17.4 +02.5	S 15 07.8 +00.0	308 59.7 +02.5	S 19 20.7 +00.0	16						
17	78 26.3 +01.0	S 05 44.8 +00.7	308 19.9 +02.5	S 15 07.8 +00.0	324 02.2 +02.4	S 19 20.7 +00.0	17						
18	93 27.3 +00.9	S 05 45.5 +00.6	323 22.4 +02.6	S 15 07.8 +00.0	339 04.6 +02.5	S 19 20.7 +00.0	18						
19	108 28.2 +00.9	S 05 46.1 +00.7	338 25.0 +02.5	S 15 07.8 +00.0	354 07.1 +02.5	S 19 20.7 +00.0	19						
20	123 29.1 +01.0	S 05 46.8 +00.6	353 27.5 +02.5	S 15 07.8 +00.0	9 09.6 +02.5	S 19 20.7 +00.0	20						
21	138 30.1 +00.9	S 05 47.4 +00.7	8 30.0 +02.6	S 15 07.8 +00.1	24 12.1 +02.4	S 19 20.7 +00.0	21						
22	153 31.0 +01.0	S 05 48.1 +00.6	23 32.6 +02.5	S 15 07.9 +00.0	39 14.5 +02.5	S 19 20.7 +00.0	22						
23	168 32.0 +00.9	S 05 48.7 +00.7	38 35.1 +02.5	S 15 07.9 +00.0	54 17.0 +02.5	S 19 20.7 +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	00'0 00'0 00'0 00'0 00'0 00'0		SD	00'4 00'4 00'4 00'4 00'4 00'4		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	165° 165° 165° 165° 165° 165°		SHA	035° 035° 035° 035° 035° 035°		SHA	051° 051° 051° 051° 051° 051°						
Greenwich Culmination Time: 11:46			Greenwich Culmination Time: 20:26			Greenwich Culmination Time: 19:23							

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 14.0 +00.2	S 06 38.6 +00.9	138 41.9 -00.4	S 23 25.0 +00.7	135 33.8 -35.4	S 21 24.6 +09.7	00						
01	198 14.2 +00.2	S 06 39.5 +01.0	153 41.5 -00.4	S 23 25.7 +00.6	149 58.4 -35.5	S 21 34.3 +09.5	01						
02	213 14.4 +00.1	S 06 40.5 +00.9	168 41.1 -00.4	S 23 26.3 +00.7	164 22.9 -35.6	S 21 43.8 +09.4	02						
03	228 14.5 +00.2	S 06 41.4 +01.0	183 40.7 -00.4	S 23 27.0 +00.7	178 47.3 -35.6	S 21 53.2 +09.2	03						
04	243 14.7 +00.2	S 06 42.4 +00.9	198 40.3 -00.5	S 23 27.7 +00.7	193 11.7 -35.7	S 22 02.4 +09.1	04						
05	258 14.9 +00.1	S 06 43.3 +01.0	213 39.8 -00.4	S 23 28.4 +00.7	207 36.0 -35.8	S 22 11.5 +08.9	05						
06	273 15.0 +00.2	S 06 44.3 +00.9	228 39.4 -00.4	S 23 29.1 +00.6	222 00.2 -35.8	S 22 20.4 +08.8	06						
07	288 15.2 +00.1	S 06 45.2 +00.9	243 39.0 -00.4	S 23 29.7 +00.7	236 24.4 -35.9	S 22 29.2 +08.7	07						
08	303 15.3 +00.2	S 06 46.1 +01.0	258 38.6 -00.4	S 23 30.4 +00.7	250 48.5 -35.9	S 22 37.9 +08.4	08						
09	318 15.5 +00.2	S 06 47.1 +00.9	273 38.2 -00.4	S 23 31.1 +00.7	265 12.6 -36.0	S 22 46.3 +08.3	09						
10	333 15.7 +00.1	S 06 48.0 +01.0	288 37.8 -00.4	S 23 31.8 +00.6	279 36.6 -36.1	S 22 54.6 +08.2	10						
11	348 15.8 +00.2	S 06 49.0 +00.9	303 37.4 -00.4	S 23 32.4 +00.7	294 00.5 -36.1	S 23 02.8 +08.0	11						
12	3 16.0 +00.2	S 06 49.9 +01.0	318 37.0 -00.4	S 23 33.1 +00.7	308 24.4 -36.2	S 23 10.8 +07.8	12						
13	18 16.2 +00.1	S 06 50.9 +00.9	333 36.6 -00.4	S 23 33.8 +00.7	322 48.2 -36.2	S 23 18.6 +07.7	13						
14	33 16.3 +00.2	S 06 51.8 +01.0	348 36.2 -00.4	S 23 34.5 +00.6	337 12.0 -36.3	S 23 26.3 +07.5	14						
15	48 16.5 +00.2	S 06 52.8 +00.9	3 35.8 -00.5	S 23 35.1 +00.7	351 35.7 -36.3	S 23 33.8 +07.3	15						
16	63 16.7 +00.1	S 06 53.7 +00.9	18 35.3 -00.4	S 23 35.8 +00.7	5 59.4 -36.4	S 23 41.1 +07.2	16						
17	78 16.8 +00.2	S 06 54.6 +01.0	33 34.9 -00.4	S 23 36.5 +00.6	20 23.0 -36.4	S 23 48.3 +07.0	17						
18	93 17.0 +00.1	S 06 55.6 +00.9	48 34.5 -00.4	S 23 37.1 +00.7	34 46.6 -36.4	S 23 55.3 +06.8	18						
19	108 17.1 +00.2	S 06 56.5 +01.0	63 34.1 -00.4	S 23 37.8 +00.7	49 10.2 -36.5	S 24 02.1 +06.7	19						
20	123 17.3 +00.2	S 06 57.5 +00.9	78 33.7 -00.4	S 23 38.5 +00.6	63 33.7 -36.6	S 24 08.8 +06.5	20						
21	138 17.5 +00.1	S 06 58.4 +01.0	93 33.3 -00.4	S 23 39.1 +00.7	77 57.1 -36.6	S 24 15.3 +06.3	21						
22	153 17.6 +00.2	S 06 59.4 +00.9	108 32.9 -00.4	S 23 39.8 +00.7	92 20.5 -36.6	S 24 21.6 +06.2	22						
23	168 17.8 +00.2	S 07 00.3 +00.9	123 32.5 -00.4	S 23 40.5 +00.6	106 43.9 -36.7	S 24 27.8 +06.0	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'0 16'0 16'0 16'0 16'0 16'0		SD 00'2 00'2 00'2 00'2 00'2 00'2		SD 16'4 16'4 16'3 16'3 16'3 16'3								
	HP 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 60'1 60'1 60'0 59'9 59'9 59'8								
	SHA 164° 164° 164° 164° 164° 164°		SHA 120° 120° 119° 119° 119° 119°		SHA 115° 113° 110° 108° 105° 103°								
	Greenwich Culmination Time: 11:46		Greenwich Culmination Time: 14:45		Greenwich Culmination Time: 15:35								
UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 32.9 +00.9	S 05 49.4 +00.6	53 37.6 +02.6	S 15 07.9 +00.0	69 19.5 +02.4	S 19 20.7 +00.0	00						
01	198 33.8 +01.0	S 05 50.0 +00.7	68 40.2 +02.5	S 15 07.9 +00.0	84 21.9 +02.5	S 19 20.7 +00.0	01						
02	213 34.8 +00.9	S 05 50.7 +00.6	83 42.7 +02.5	S 15 07.9 +00.1	99 24.4 +02.5	S 19 20.7 +00.0	02						
03	228 35.7 +01.0	S 05 51.3 +00.7	98 45.2 +02.6	S 15 08.0 +00.0	114 26.9 +02.4	S 19 20.7 +00.0	03						
04	243 36.7 +00.9	S 05 52.0 +00.6	113 47.8 +02.5	S 15 08.0 +00.0	129 29.3 +02.5	S 19 20.7 +00.0	04						
05	258 37.6 +01.0	S 05 52.6 +00.7	128 50.3 +02.5	S 15 08.0 +00.0	144 31.8 +02.5	S 19 20.7 +00.0	05						
06	273 38.6 +00.9	S 05 53.3 +00.6	143 52.8 +02.6	S 15 08.0 +00.0	159 34.3 +02.4	S 19 20.7 +00.0	06						
07	288 39.5 +00.9	S 05 53.9 +00.7	158 55.4 +02.5	S 15 08.0 +00.0	174 36.7 +02.5	S 19 20.7 +00.0	07						
08	303 40.4 +01.0	S 05 54.6 +00.6	173 57.9 +02.5	S 15 08.0 +00.1	189 39.2 +02.5	S 19 20.7 +00.0	08						
09	318 41.4 +00.9	S 05 55.2 +00.7	189 00.4 +02.6	S 15 08.1 +00.0	204 41.7 +02.4	S 19 20.7 +00.0	09						
10	333 42.3 +01.0	S 05 55.9 +00.6	204 03.0 +02.5	S 15 08.1 +00.0	219 44.1 +02.5	S 19 20.7 +00.0	10						
11	348 43.3 +00.9	S 05 56.5 +00.7	219 05.5 +02.5	S 15 08.1 +00.0	234 46.6 +02.5	S 19 20.7 +00.0	11						
12	3 44.2 +00.9	S 05 57.2 +00.6	234 08.0 +02.5	S 15 08.1 +00.0	249 49.1 +02.4	S 19 20.7 +00.0	12						
13	18 45.1 +01.0	S 05 57.8 +00.7	249 10.5 +02.6	S 15 08.1 +00.0	264 51.5 +02.5	S 19 20.7 +00.0	13						
14	33 46.1 +00.9	S 05 58.5 +00.6	264 13.1 +02.5	S 15 08.1 +00.1	279 54.0 +02.5	S 19 20.7 +00.0	14						
15	48 47.0 +01.0	S 05 59.1 +00.7	279 15.6 +02.5	S 15 08.2 +00.0	294 56.5 +02.4	S 19 20.7 +00.0	15						
16	63 48.0 +00.9	S 05 59.8 +00.6	294 18.1 +02.6	S 15 08.2 +00.0	309 58.9 +02.5	S 19 20.7 +00.0	16						
17	78 48.9 +00.9	S 06 00.4 +00.7	309 20.7 +02.5	S 15 08.2 +00.0	325 01.4 +02.5	S 19 20.7 +00.0	17						
18	93 49.8 +01.0	S 06 01.1 +00.6	324 23.2 +02.5	S 15 08.2 +00.0	340 03.9 +02.4	S 19 20.7 +00.0	18						
19	108 50.8 +00.9	S 06 01.7 +00.6	339 25.7 +02.5	S 15 08.2 +00.0	355 06.3 +02.5	S 19 20.7 +00.0	19						
20	123 51.7 +01.0	S 06 02.3 +00.7	354 28.2 +02.6	S 15 08.2 +00.1	10 08.8 +02.5	S 19 20.7 +00.0	20						
21	138 52.7 +00.9	S 06 03.0 +00.6	9 30.8 +02.5	S 15 08.3 +00.0	25 11.3 +02.4	S 19 20.7 +00.0	21						
22	153 53.6 +00.9	S 06 03.6 +00.7	24 33.3 +02.5	S 15 08.3 +00.0	40 13.7 +02.5	S 19 20.7 +00.0	22						
23	168 54.5 +01.0	S 06 04.3 +00.6	39 35.8 +02.5	S 15 08.3 +00.0	55 16.2 +02.5	S 19 20.7 +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 00'0 00'0 00'0 00'0 00'0 00'0		SD 00'4 00'4 00'4 00'4 00'4 00'4		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 165° 165° 164° 164° 164° 164°		SHA 035° 035° 035° 035° 035° 035°		SHA 051° 051° 051° 051° 051° 051°								
	Greenwich Culmination Time: 11:45		Greenwich Culmination Time: 20:22		Greenwich Culmination Time: 19:19								

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 18.0 +00.1	S	07 01.2 +01.0	138 32.1 -00.4	S	23 41.1 +00.7	121 07.2 -36.7	S	24 33.8 +05.8	00			
01	198 18.1 +00.2	S	07 02.2 +00.9	153 31.7 -00.5	S	23 41.8 +00.7	135 30.5 -36.7	S	24 39.6 +05.7	01			
02	213 18.3 +00.1	S	07 03.1 +01.0	168 31.2 -00.4	S	23 42.5 +00.6	149 53.8 -36.8	S	24 45.3 +05.4	02			
03	228 18.4 +00.2	S	07 04.1 +00.9	183 30.8 -00.4	S	23 43.1 +00.7	164 17.0 -36.8	S	24 50.7 +05.3	03			
04	243 18.6 +00.2	S	07 05.0 +01.0	198 30.4 -00.4	S	23 43.8 +00.6	178 40.2 -36.8	S	24 56.0 +05.2	04			
05	258 18.8 +00.1	S	07 06.0 +00.9	213 30.0 -00.4	S	23 44.4 +00.7	193 03.4 -36.9	S	25 01.2 +04.9	05			
06	273 18.9 +00.2	S	07 06.9 +00.9	228 29.6 -00.4	S	23 45.1 +00.6	207 26.5 -36.9	S	25 06.1 +04.8	06			
07	288 19.1 +00.1	S	07 07.8 +01.0	243 29.2 -00.4	S	23 45.7 +00.7	221 49.6 -36.9	S	25 10.9 +04.6	07			
08	303 19.2 +00.2	S	07 08.8 +00.9	258 28.8 -00.4	S	23 46.4 +00.6	236 12.7 -36.9	S	25 15.5 +04.4	08			
09	318 19.4 +00.2	S	07 09.7 +01.0	273 28.4 -00.4	S	23 47.0 +00.7	250 35.8 -36.9	S	25 19.9 +04.2	09			
10	333 19.6 +00.1	S	07 10.7 +00.9	288 28.0 -00.5	S	23 47.7 +00.7	264 58.9 -37.0	S	25 24.1 +04.1	10			
11	348 19.7 +00.2	S	07 11.6 +01.0	303 27.5 -00.4	S	23 48.4 +00.6	279 21.9 -37.0	S	25 28.2 +03.9	11			
12	3 19.9 +00.1	S	07 12.6 +00.9	318 27.1 -00.4	S	23 49.0 +00.7	293 44.9 -37.0	S	25 32.1 +03.7	12			
13	18 20.0 +00.2	S	07 13.5 +00.9	333 26.7 -00.4	S	23 49.7 +00.6	308 07.9 -37.0	S	25 35.8 +03.5	13			
14	33 20.2 +00.2	S	07 14.4 +01.0	348 26.3 -00.4	S	23 50.3 +00.6	322 30.9 -37.0	S	25 39.3 +03.4	14			
15	48 20.4 +00.1	S	07 15.4 +00.9	3 25.9 -00.4	S	23 50.9 +00.7	336 53.9 -37.0	S	25 42.7 +03.1	15			
16	63 20.5 +00.2	S	07 16.3 +01.0	18 25.5 -00.4	S	23 51.6 +00.6	351 16.9 -37.0	S	25 45.8 +03.0	16			
17	78 20.7 +00.1	S	07 17.3 +00.9	33 25.1 -00.4	S	23 52.2 +00.7	5 39.9 -37.0	S	25 48.8 +02.8	17			
18	93 20.8 +00.2	S	07 18.2 +00.9	48 24.7 -00.4	S	23 52.9 +00.6	20 02.9 -37.1	S	25 51.6 +02.6	18			
19	108 21.0 +00.1	S	07 19.1 +01.0	63 24.3 -00.5	S	23 53.5 +00.7	34 25.8 -37.0	S	25 54.2 +02.5	19			
20	123 21.1 +00.2	S	07 20.1 +00.9	78 23.8 -00.4	S	23 54.2 +00.6	48 48.8 -37.0	S	25 56.7 +02.3	20			
21	138 21.3 +00.2	S	07 21.0 +01.0	93 23.4 -00.4	S	23 54.8 +00.7	63 11.8 -37.0	S	25 59.0 +02.1	21			
22	153 21.5 +00.1	S	07 22.0 +00.9	108 23.0 -00.4	S	23 55.5 +00.6	77 34.8 -37.0	S	26 01.1 +01.9	22			
23	168 21.6 +00.2	S	07 22.9 +00.9	123 22.6 -00.4	S	23 56.1 +00.6	91 57.8 -37.0	S	26 03.0 +01.7	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'0 16'0 16'0 16'0 16'0 16'0			SD 00'2 00'2 00'2 00'2 00'2 00'2			SD 16'3 16'3 16'2 16'2 16'2 16'2						
	HP 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 59'7 59'7 59'6 59'5 59'4 59'3						
	SHA 163° 163° 163° 163° 163° 163°			SHA 119° 118° 118° 118° 118° 118°			SHA 100° 097° 095° 092° 090° 087°						
	Greenwich Culmination Time: 11:46			Greenwich Culmination Time: 14:46			Greenwich Culmination Time: 16:36						

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 55.5 +00.9	S	06 04.9 +00.7	54 38.3 +02.6	S	15 08.3 +00.0	70 18.7 +02.4	S	19 20.7 +00.0	00			
01	198 56.4 +01.0	S	06 05.6 +00.6	69 40.9 +02.5	S	15 08.3 +00.0	85 21.1 +02.5	S	19 20.7 +00.0	01			
02	213 57.4 +00.9	S	06 06.2 +00.7	84 43.4 +02.5	S	15 08.3 +00.0	100 23.6 +02.5	S	19 20.7 +00.0	02			
03	228 58.3 +00.9	S	06 06.9 +00.6	99 45.9 +02.5	S	15 08.3 +00.1	115 26.1 +02.4	S	19 20.7 +00.0	03			
04	243 59.2 +01.0	S	06 07.5 +00.7	114 48.4 +02.6	S	15 08.4 +00.0	130 28.5 +02.5	S	19 20.7 +00.0	04			
05	259 00.2 +00.9	S	06 08.2 +00.6	129 51.0 +02.5	S	15 08.4 +00.0	145 31.0 +02.5	S	19 20.7 +00.0	05			
06	274 01.1 +01.0	S	06 08.8 +00.7	144 53.5 +02.5	S	15 08.4 +00.0	160 33.5 +02.4	S	19 20.7 +00.0	06			
07	289 02.1 +00.9	S	06 09.5 +00.6	159 56.0 +02.5	S	15 08.4 +00.0	175 35.9 +02.5	S	19 20.7 +00.0	07			
08	304 03.0 +00.9	S	06 10.1 +00.7	174 58.5 +02.6	S	15 08.4 +00.0	190 38.4 +02.4	S	19 20.7 +00.0	08			
09	319 03.9 +01.0	S	06 10.8 +00.6	190 01.1 +02.5	S	15 08.4 +00.0	205 40.8 +02.5	S	19 20.7 +00.0	09			
10	334 04.9 +00.9	S	06 11.4 +00.7	205 03.6 +02.5	S	15 08.4 +00.1	220 43.3 +02.5	S	19 20.7 +00.0	10			
11	349 05.8 +00.9	S	06 12.1 +00.6	220 06.1 +02.5	S	15 08.5 +00.0	235 45.8 +02.4	S	19 20.7 +00.0	11			
12	4 06.7 +01.0	S	06 12.7 +00.7	235 08.6 +02.5	S	15 08.5 +00.0	250 48.2 +02.5	S	19 20.7 +00.0	12			
13	19 07.7 +00.9	S	06 13.4 +00.6	250 11.1 +02.6	S	15 08.5 +00.0	265 50.7 +02.5	S	19 20.7 +00.0	13			
14	34 08.6 +01.0	S	06 14.0 +00.7	265 13.7 +02.5	S	15 08.5 +00.0	280 53.2 +02.4	S	19 20.7 +00.0	14			
15	49 09.6 +00.9	S	06 14.7 +00.6	280 16.2 +02.5	S	15 08.5 +00.0	295 55.6 +02.5	S	19 20.7 +00.0	15			
16	64 10.5 +00.9	S	06 15.3 +00.7	295 18.7 +02.5	S	15 08.5 +00.0	310 58.1 +02.4	S	19 20.7 +00.0	16			
17	79 11.4 +01.0	S	06 16.0 +00.6	310 21.2 +02.5	S	15 08.5 +00.0	326 00.5 +02.5	S	19 20.7 +00.0	17			
18	94 12.4 +00.9	S	06 16.6 +00.7	325 23.7 +02.6	S	15 08.5 +00.1	341 03.0 +02.5	S	19 20.7 +00.0	18			
19	109 13.3 +00.9	S	06 17.3 +00.6	340 26.3 +02.5	S	15 08.6 +00.0	356 05.5 +02.4	S	19 20.7 +00.0	19			
20	124 14.2 +01.0	S	06 17.9 +00.7	355 28.8 +02.5	S	15 08.6 +00.0	11 07.9 +02.5	S	19 20.7 +00.0	20			
21	139 15.2 +00.9	S	06 18.6 +00.6	10 31.3 +02.5	S	15 08.6 +00.0	26 10.4 +02.4	S	19 20.7 +00.0	21			
22	154 16.1 +01.0	S	06 19.2 +00.7	25 33.8 +02.5	S	15 08.6 +00.0	41 12.8 +02.5	S	19 20.7 +00.0	22			
23	169 17.1 +00.9	S	06 19.9 +00.6	40 36.3 +02.5	S	15 08.6 +00.0	56 15.3 +02.5	S	19 20.7 +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 00'0 00'0 00'0 00'0 00'0 00'0			SD 00'4 00'4 00'4 00'4 00'4 00'4			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 164° 164° 164° 164° 164° 164°			SHA 035° 035° 035° 035° 035° 035°			SHA 051° 051° 051° 051° 051° 051°						
	Greenwich Culmination Time: 11:43			Greenwich Culmination Time: 20:18			Greenwich Culmination Time: 19:15						

Sun					Venus					Moon					A: 23%
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT		
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "			
00	183 21.8 +00.1	S	07 23.8 +01.0		138 22.2 -00.4	S	23 56.7 +00.7		106 20.8 -37.0	S	26 04.7 +01.5		00		
01	198 21.9 +00.2	S	07 24.8 +00.9		153 21.8 -00.4	S	23 57.4 +00.6		120 43.8 -37.0	S	26 06.2 +01.4		01		
02	213 22.1 +00.1	S	07 25.7 +00.9		168 21.4 -00.4	S	23 58.0 +00.6		135 06.8 -36.9	S	26 07.6 +01.2		02		
03	228 22.2 +00.2	S	07 26.6 +01.0		183 21.0 -00.5	S	23 58.6 +00.7		149 29.9 -37.0	S	26 08.8 +01.0		03		
04	243 22.4 +00.2	S	07 27.6 +00.9		198 20.5 -00.4	S	23 59.3 +00.6		163 52.9 -36.9	S	26 09.8 +00.8		04		
05	258 22.6 +00.1	S	07 28.5 +01.0		213 20.1 -00.4	S	23 59.9 +00.6		178 16.0 -36.9	S	26 10.6 +00.7		05		
06	273 22.7 +00.2	S	07 29.5 +00.9		228 19.7 -00.4	S	24 00.5 +00.7		192 39.1 -36.8	S	26 11.3 +00.5		06		
07	288 22.9 +00.1	S	07 30.4 +00.9		243 19.3 -00.4	S	24 01.2 +00.6		207 02.3 -36.9	S	26 11.8 +00.2		07		
08	303 23.0 +00.2	S	07 31.3 +01.0		258 18.9 -00.4	S	24 01.8 +00.6		221 25.4 -36.8	S	26 12.0 +00.2		08		
09	318 23.2 +00.1	S	07 32.3 +00.9		273 18.5 -00.4	S	24 02.4 +00.7		235 48.6 -36.8	S	26 12.2 -00.1		09		
10	333 23.3 +00.2	S	07 33.2 +00.9		288 18.1 -00.4	S	24 03.1 +00.6		250 11.8 -36.7	S	26 12.1 -00.2		10		
11	348 23.5 +00.1	S	07 34.1 +01.0		303 17.7 -00.5	S	24 03.7 +00.6		264 35.1 -36.7	S	26 11.9 -00.5		11		
12	3 23.6 +00.2	S	07 35.1 +00.9		318 17.2 -00.4	S	24 04.3 +00.7		278 58.4 -36.7	S	26 11.4 -00.5		12		
13	18 23.8 +00.1	S	07 36.0 +01.0		333 16.8 -00.4	S	24 05.0 +00.6		293 21.7 -36.6	S	26 10.9 -00.8		13		
14	33 23.9 +00.2	S	07 37.0 +00.9		348 16.4 -00.4	S	24 05.6 +00.6		307 45.1 -36.6	S	26 10.1 -01.0		14		
15	48 24.1 +00.2	S	07 37.9 +00.9		3 16.0 -00.4	S	24 06.2 +00.6		322 08.5 -36.5	S	26 09.1 -01.1		15		
16	63 24.3 +00.1	S	07 38.8 +01.0		18 15.6 -00.4	S	24 06.8 +00.7		336 32.0 -36.6	S	26 08.0 -01.3		16		
17	78 24.4 +00.2	S	07 39.8 +00.9		33 15.2 -00.4	S	24 07.5 +00.6		350 55.4 -36.4	S	26 06.7 -01.4		17		
18	93 24.6 +00.1	S	07 40.7 +00.9		48 14.8 -00.5	S	24 08.1 +00.6		5 19.0 -36.4	S	26 05.3 -01.7		18		
19	108 24.7 +00.2	S	07 41.6 +01.0		63 14.3 -00.4	S	24 08.7 +00.6		19 42.6 -36.4	S	26 03.6 -01.8		19		
20	123 24.9 +00.1	S	07 42.6 +00.9		78 13.9 -00.4	S	24 09.3 +00.6		34 06.2 -36.3	S	26 01.8 -02.0		20		
21	138 25.0 +00.2	S	07 43.5 +00.9		93 13.5 -00.4	S	24 09.9 +00.6		48 29.9 -36.2	S	25 59.8 -02.1		21		
22	153 25.2 +00.1	S	07 44.4 +01.0		108 13.1 -00.4	S	24 10.5 +00.7		62 53.7 -36.2	S	25 57.7 -02.3		22		
23	168 25.3 +00.2	S	07 45.4 +00.9		123 12.7 -00.4	S	24 11.2 +00.6		77 17.5 -36.2	S	25 55.4 -02.5		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	00'2	00'2	00'2	00'2	00'2	00'2
HP	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
SHA	162°	162°	162°	162°	162°	162°			SHA	117°	117°	117°	117°	117°	117°
Greenwich Culmination Time: 11:46									Greenwich Culmination Time: 14:46						

Mars					Jupiter					Saturn					
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT		
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "			
00	184 18.0 +00.9	S	06 20.5 +00.6		55 38.8 +02.6	S	15 08.6 +00.0		71 17.8 +02.4	S	19 20.7 +00.0		00		
01	199 18.9 +01.0	S	06 21.1 +00.7		70 41.4 +02.5	S	15 08.6 +00.0		86 20.2 +02.5	S	19 20.7 +00.0		01		
02	214 19.9 +00.9	S	06 21.8 +00.6		85 43.9 +02.5	S	15 08.6 +00.1		101 22.7 +02.4	S	19 20.7 +00.0		02		
03	229 20.8 +00.9	S	06 22.4 +00.7		100 46.4 +02.5	S	15 08.7 +00.0		116 25.1 +02.5	S	19 20.7 +00.0		03		
04	244 21.7 +01.0	S	06 23.1 +00.6		115 48.9 +02.5	S	15 08.7 +00.0		131 27.6 +02.5	S	19 20.7 +00.0		04		
05	259 22.7 +00.9	S	06 23.7 +00.7		130 51.4 +02.5	S	15 08.7 +00.0		146 30.1 +02.4	S	19 20.7 +00.0		05		
06	274 23.6 +00.9	S	06 24.4 +00.6		145 53.9 +02.6	S	15 08.7 +00.0		161 32.5 +02.5	S	19 20.7 +00.0		06		
07	289 24.5 +01.0	S	06 25.0 +00.7		160 56.5 +02.5	S	15 08.7 +00.0		176 35.0 +02.4	S	19 20.7 +00.0		07		
08	304 25.5 +00.9	S	06 25.7 +00.6		175 59.0 +02.5	S	15 08.7 +00.0		191 37.4 +02.5	S	19 20.7 +00.0		08		
09	319 26.4 +00.9	S	06 26.3 +00.7		191 01.5 +02.5	S	15 08.7 +00.0		206 39.9 +02.5	S	19 20.7 +00.0		09		
10	334 27.3 +01.0	S	06 27.0 +00.6		206 04.0 +02.5	S	15 08.7 +00.0		221 42.4 +02.4	S	19 20.7 -00.1		10		
11	349 28.3 +00.9	S	06 27.6 +00.7		221 06.5 +02.5	S	15 08.7 +00.1		236 44.8 +02.5	S	19 20.6 +00.0		11		
12	4 29.2 +01.0	S	06 28.3 +00.6		236 09.0 +02.5	S	15 08.8 +00.0		251 47.3 +02.4	S	19 20.6 +00.0		12		
13	19 30.2 +00.9	S	06 28.9 +00.7		251 11.5 +02.5	S	15 08.8 +00.0		266 49.7 +02.5	S	19 20.6 +00.0		13		
14	34 31.1 +00.9	S	06 29.6 +00.6		266 14.0 +02.6	S	15 08.8 +00.0		281 52.2 +02.5	S	19 20.6 +00.0		14		
15	49 32.0 +01.0	S	06 30.2 +00.7		281 16.6 +02.5	S	15 08.8 +00.0		296 54.7 +02.4	S	19 20.6 +00.0		15		
16	64 33.0 +00.9	S	06 30.9 +00.6		296 19.1 +02.5	S	15 08.8 +00.0		311 57.1 +02.5	S	19 20.6 +00.0		16		
17	79 33.9 +00.9	S	06 31.5 +00.6		311 21.6 +02.5	S	15 08.8 +00.0		326 59.6 +02.4	S	19 20.6 +00.0		17		
18	94 34.8 +01.0	S	06 32.1 +00.7		326 24.1 +02.5	S	15 08.8 +00.0		342 02.0 +02.5	S	19 20.6 +00.0		18		
19	109 35.8 +00.9	S	06 32.8 +00.6		341 26.6 +02.5	S	15 08.8 +00.0		357 04.5 +02.4	S	19 20.6 +00.0		19		
20	124 36.7 +00.9	S	06 33.4 +00.7		356 29.1 +02.5	S	15 08.8 +00.1		12 06.9 +02.5	S	19 20.6 +00.0		20		
21	139 37.6 +01.0	S	06 34.1 +00.6		11 31.6 +02.5	S	15 08.9 +00.0		27 09.4 +02.5	S	19 20.6 +00.0		21		
22	154 38.6 +00.9	S	06 34.7 +00.7		26 34.1 +02.5	S	15 08.9 +00.0		42 11.9 +02.4	S	19 20.6 +00.0		22		
23	169 39.5 +00.9	S	06 35.4 +00.6		41 36.6 +02.6	S	15 08.9 +00.0		57 14.3 +02.5	S	19 20.6 +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	163°	163°	163°	163°	163°	163°			SHA	051°	051°	051°	051°	051°	051°
Greenwich Culmination Time: 11:42									Greenwich Culmination Time: 20:14						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 25.5 +00.1	S 07 46.3 +00.9	138 12.3 -00.4	S 24 11.8 +00.6	91 41.3 -36.0	S 25 52.9 -02.7	00						
01	198 25.6 +00.2	S 07 47.2 +01.0	153 11.9 -00.5	S 24 12.4 +00.6	106 05.3 -36.0	S 25 50.2 -02.8	01						
02	213 25.8 +00.1	S 07 48.2 +00.9	168 11.4 -00.4	S 24 13.0 +00.6	120 29.3 -36.0	S 25 47.4 -03.0	02						
03	228 25.9 +00.2	S 07 49.1 +00.9	183 11.0 -00.4	S 24 13.6 +00.6	134 53.3 -35.9	S 25 44.4 -03.1	03						
04	243 26.1 +00.1	S 07 50.0 +01.0	198 10.6 -00.4	S 24 14.2 +00.6	149 17.4 -35.8	S 25 41.3 -03.4	04						
05	258 26.2 +00.2	S 07 51.0 +00.9	213 10.2 -00.4	S 24 14.8 +00.7	163 41.6 -35.8	S 25 37.9 -03.4	05						
06	273 26.4 +00.1	S 07 51.9 +00.9	228 09.8 -00.4	S 24 15.5 +00.6	178 05.8 -35.6	S 25 34.5 -03.7	06						
07	288 26.5 +00.2	S 07 52.8 +01.0	243 09.4 -00.4	S 24 16.1 +00.6	192 30.2 -35.6	S 25 30.8 -03.8	07						
08	303 26.7 +00.1	S 07 53.8 +00.9	258 09.0 -00.5	S 24 16.7 +00.6	206 54.6 -35.6	S 25 27.0 -03.9	08						
09	318 26.8 +00.2	S 07 54.7 +00.9	273 08.5 -00.4	S 24 17.3 +00.6	221 19.0 -35.5	S 25 23.1 -04.2	09						
10	333 27.0 +00.1	S 07 55.6 +01.0	288 08.1 -00.4	S 24 17.9 +00.6	235 43.5 -35.3	S 25 18.9 -04.3	10						
11	348 27.1 +00.2	S 07 56.6 +00.9	303 07.7 -00.4	S 24 18.5 +00.6	250 08.2 -35.4	S 25 14.6 -04.4	11						
12	3 27.3 +00.1	S 07 57.5 +00.9	318 07.3 -00.4	S 24 19.1 +00.6	264 32.8 -35.2	S 25 10.2 -04.6	12						
13	18 27.4 +00.2	S 07 58.4 +01.0	333 06.9 -00.4	S 24 19.7 +00.6	278 57.6 -35.2	S 25 05.6 -04.7	13						
14	33 27.6 +00.1	S 07 59.4 +00.9	348 06.5 -00.4	S 24 20.3 +00.6	293 22.4 -35.0	S 25 00.9 -04.9	14						
15	48 27.7 +00.2	S 08 00.3 +00.9	3 06.1 -00.5	S 24 20.9 +00.6	307 47.4 -35.0	S 24 56.0 -05.1	15						
16	63 27.9 +00.1	S 08 01.2 +01.0	18 05.6 -00.4	S 24 21.5 +00.6	322 12.4 -34.9	S 24 50.9 -05.2	16						
17	78 28.0 +00.2	S 08 02.2 +00.9	33 05.2 -00.4	S 24 22.1 +00.6	336 37.5 -34.9	S 24 45.7 -05.4	17						
18	93 28.2 +00.1	S 08 03.1 +00.9	48 04.8 -00.4	S 24 22.7 +00.6	351 02.6 -34.7	S 24 40.3 -05.5	18						
19	108 28.3 +00.2	S 08 04.0 +01.0	63 04.4 -00.4	S 24 23.3 +00.6	5 27.9 -34.7	S 24 34.8 -05.6	19						
20	123 28.5 +00.1	S 08 05.0 +00.9	78 04.0 -00.4	S 24 23.9 +00.6	19 53.2 -34.5	S 24 29.2 -05.8	20						
21	138 28.6 +00.1	S 08 05.9 +00.9	93 03.6 -00.4	S 24 24.5 +00.6	34 18.7 -34.5	S 24 23.4 -06.0	21						
22	153 28.7 +00.2	S 08 06.8 +00.9	108 03.2 -00.5	S 24 25.1 +00.6	48 44.2 -34.4	S 24 17.4 -06.0	22						
23	168 28.9 +00.1	S 08 07.7 +01.0	123 02.7 -00.4	S 24 25.7 +00.6	63 09.8 -34.3	S 24 11.4 -06.3	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	00'2 00'2 00'2 00'2 00'2 00'2		SD	16'0 16'0 15'9 15'9 15'9 15'9						
HP	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	58'7 58'6 58'5 58'4 58'3 58'2						
SHA	162° 161° 161° 161° 161° 161°		SHA	116° 116° 116° 116° 116° 115°		SHA	069° 066° 064° 061° 059° 056°						
Greenwich Culmination Time: 11:46			Greenwich Culmination Time: 14:47			Greenwich Culmination Time: 18:37							

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184 40.4 +01.0	S 06 36.0 +00.7	56 39.2 +02.5	S 15 08.9 +00.0	72 16.8 +02.4	S 19 20.6 +00.0	00						
01	199 41.4 +00.9	S 06 36.7 +00.6	71 41.7 +02.5	S 15 08.9 +00.0	87 19.2 +02.5	S 19 20.6 +00.0	01						
02	214 42.3 +00.9	S 06 37.3 +00.7	86 44.2 +02.5	S 15 08.9 +00.0	102 21.7 +02.4	S 19 20.6 +00.0	02						
03	229 43.2 +01.0	S 06 38.0 +00.6	101 46.7 +02.5	S 15 08.9 +00.0	117 24.1 +02.5	S 19 20.6 +00.0	03						
04	244 44.2 +00.9	S 06 38.6 +00.6	116 49.2 +02.5	S 15 08.9 +00.0	132 26.6 +02.4	S 19 20.6 +00.0	04						
05	259 45.1 +00.9	S 06 39.2 +00.7	131 51.7 +02.5	S 15 08.9 +00.0	147 29.0 +02.5	S 19 20.6 +00.0	05						
06	274 46.0 +01.0	S 06 39.9 +00.6	146 54.2 +02.5	S 15 08.9 +00.0	162 31.5 +02.4	S 19 20.6 +00.0	06						
07	289 47.0 +00.9	S 06 40.5 +00.7	161 56.7 +02.5	S 15 08.9 +00.1	177 33.9 +02.5	S 19 20.6 +00.0	07						
08	304 47.9 +00.9	S 06 41.2 +00.6	176 59.2 +02.5	S 15 09.0 +00.0	192 36.4 +02.5	S 19 20.6 +00.0	08						
09	319 48.8 +01.0	S 06 41.8 +00.7	192 01.7 +02.5	S 15 09.0 +00.0	207 38.9 +02.4	S 19 20.6 +00.0	09						
10	334 49.8 +00.9	S 06 42.5 +00.6	207 04.2 +02.5	S 15 09.0 +00.0	222 41.3 +02.5	S 19 20.6 +00.0	10						
11	349 50.7 +00.9	S 06 43.1 +00.7	222 06.7 +02.5	S 15 09.0 +00.0	237 43.8 +02.4	S 19 20.6 +00.0	11						
12	4 51.6 +01.0	S 06 43.8 +00.6	237 09.2 +02.5	S 15 09.0 +00.0	252 46.2 +02.5	S 19 20.6 +00.0	12						
13	19 52.6 +00.9	S 06 44.4 +00.7	252 11.7 +02.5	S 15 09.0 +00.0	267 48.7 +02.4	S 19 20.6 +00.0	13						
14	34 53.5 +00.9	S 06 45.1 +00.6	267 14.2 +02.5	S 15 09.0 +00.0	282 51.1 +02.5	S 19 20.6 +00.0	14						
15	49 54.4 +00.9	S 06 45.7 +00.6	282 16.7 +02.5	S 15 09.0 +00.0	297 53.6 +02.4	S 19 20.6 +00.0	15						
16	64 55.3 +01.0	S 06 46.3 +00.7	297 19.2 +02.6	S 15 09.0 +00.0	312 56.0 +02.5	S 19 20.6 +00.0	16						
17	79 56.3 +00.9	S 06 47.0 +00.6	312 21.8 +02.5	S 15 09.0 +00.0	327 58.5 +02.4	S 19 20.6 +00.0	17						
18	94 57.2 +00.9	S 06 47.6 +00.7	327 24.3 +02.5	S 15 09.0 +00.0	343 00.9 +02.5	S 19 20.6 +00.0	18						
19	109 58.1 +01.0	S 06 48.3 +00.6	342 26.8 +02.5	S 15 09.0 +00.0	358 03.4 +02.4	S 19 20.6 +00.0	19						
20	124 59.1 +00.9	S 06 48.9 +00.7	357 29.3 +02.5	S 15 09.0 +00.1	13 05.8 +02.5	S 19 20.6 +00.0	20						
21	140 00.0 +00.9	S 06 49.6 +00.6	12 31.8 +02.5	S 15 09.1 +00.0	28 08.3 +02.5	S 19 20.6 +00.0	21						
22	155 00.9 +01.0	S 06 50.2 +00.7	27 34.3 +02.5	S 15 09.1 +00.0	43 10.8 +02.4	S 19 20.6 +00.0	22						
23	170 01.9 +00.9	S 06 50.9 +00.6	42 36.8 +02.5	S 15 09.1 +00.0	58 13.2 +02.5	S 19 20.6 +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	00'4 00'4 00'4 00'4 00'4 00'4		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	163° 163° 163° 163° 162° 162°		SHA	035° 035° 035° 035° 035° 035°		SHA	051° 051° 051° 051° 051° 051°						
Greenwich Culmination Time: 11:40			Greenwich Culmination Time: 20:10			Greenwich Culmination Time: 19:07							

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	183 29.0 +00.2	S	08 08.7 +00.9	138 02.3 -00.4	S	24 26.3 +00.6	77 35.5 -34.3	S	24 05.1 -06.3	00										
01	198 29.2 +00.1	S	08 09.6 +00.9	153 01.9 -00.4	S	24 26.9 +00.5	92 01.2 -34.1	S	23 58.8 -06.5	01										
02	213 29.3 +00.2	S	08 10.5 +01.0	168 01.5 -00.4	S	24 27.4 +00.6	106 27.1 -34.0	S	23 52.3 -06.7	02										
03	228 29.5 +00.1	S	08 11.5 +00.9	183 01.1 -00.4	S	24 28.0 +00.6	120 53.1 -34.0	S	23 45.6 -06.8	03										
04	243 29.6 +00.2	S	08 12.4 +00.9	198 00.7 -00.4	S	24 28.6 +00.6	135 19.1 -33.8	S	23 38.8 -06.9	04										
05	258 29.8 +00.1	S	08 13.3 +01.0	213 00.3 -00.5	S	24 29.2 +00.6	149 45.3 -33.8	S	23 31.9 -07.1	05										
06	273 29.9 +00.2	S	08 14.3 +00.9	227 59.8 -00.4	S	24 29.8 +00.6	164 11.5 -33.6	S	23 24.8 -07.2	06										
07	288 30.1 +00.1	S	08 15.2 +00.9	242 59.4 -00.4	S	24 30.4 +00.6	178 37.9 -33.6	S	23 17.6 -07.3	07										
08	303 30.2 +00.1	S	08 16.1 +00.9	257 59.0 -00.4	S	24 31.0 +00.5	193 04.3 -33.5	S	23 10.3 -07.4	08										
09	318 30.3 +00.2	S	08 17.0 +01.0	272 58.6 -00.4	S	24 31.5 +00.6	207 30.8 -33.3	S	23 02.9 -07.6	09										
10	333 30.5 +00.1	S	08 18.0 +00.9	287 58.2 -00.4	S	24 32.1 +00.6	221 57.5 -33.3	S	22 55.3 -07.7	10										
11	348 30.6 +00.2	S	08 18.9 +00.9	302 57.8 -00.5	S	24 32.7 +00.6	236 24.2 -33.2	S	22 47.6 -07.9	11										
12	3 30.8 +00.1	S	08 19.8 +00.9	317 57.3 -00.4	S	24 33.3 +00.6	250 51.0 -33.1	S	22 39.7 -07.9	12										
13	18 30.9 +00.2	S	08 20.7 +01.0	332 56.9 -00.4	S	24 33.9 +00.5	265 17.9 -33.0	S	22 31.8 -08.1	13										
14	33 31.1 +00.1	S	08 21.7 +00.9	347 56.5 -00.4	S	24 34.4 +00.6	279 44.9 -32.9	S	22 23.7 -08.2	14										
15	48 31.2 +00.1	S	08 22.6 +00.9	2 56.1 -00.4	S	24 35.0 +00.6	294 12.0 -32.8	S	22 15.5 -08.3	15										
16	63 31.3 +00.2	S	08 23.5 +01.0	17 55.7 -00.4	S	24 35.6 +00.6	308 39.2 -32.7	S	22 07.2 -08.5	16										
17	78 31.5 +00.1	S	08 24.5 +00.9	32 55.3 -00.4	S	24 36.2 +00.5	323 06.5 -32.6	S	21 58.7 -08.5	17										
18	93 31.6 +00.2	S	08 25.4 +00.9	47 54.9 -00.5	S	24 36.7 +00.6	337 33.9 -32.5	S	21 50.2 -08.7	18										
19	108 31.8 +00.1	S	08 26.3 +00.9	62 54.4 -00.4	S	24 37.3 +00.6	352 01.4 -32.4	S	21 41.5 -08.8	19										
20	123 31.9 +00.2	S	08 27.2 +01.0	77 54.0 -00.4	S	24 37.9 +00.6	6 29.0 -32.3	S	21 32.7 -08.9	20										
21	138 32.1 +00.1	S	08 28.2 +00.9	92 53.6 -00.4	S	24 38.5 +00.5	20 56.7 -32.2	S	21 23.8 -09.0	21										
22	153 32.2 +00.1	S	08 29.1 +00.9	107 53.2 -00.4	S	24 39.0 +00.6	35 24.5 -32.1	S	21 14.8 -09.2	22										
23	168 32.3 +00.2	S	08 30.0 +00.9	122 52.8 -00.4	S	24 39.6 +00.6	49 52.4 -32.0	S	21 05.6 -09.2	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16°0	16°0	16°0	16°0	16°0	16°0	SD	00°2	00°2	00°2	00°2	00°2	00°2	SD						
HP	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						
SHA	161°	160°	160°	160°	160°	160°	SHA	115°	115°	115°	115°	114°	114°	SHA						
Greenwich Culmination Time: 11:45							Greenwich Culmination Time: 14:48							Greenwich Culmination Time: 19:33						

UT	Mars				Jupiter				Saturn				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	185 02.8 +00.9	S	06 51.5 +00.6	57 39.3 +02.5	S	15 09.1 +00.0	73 15.7 +02.4	S	19 20.6 +00.0	00										
01	200 03.7 +01.0	S	06 52.1 +00.7	72 41.8 +02.5	S	15 09.1 +00.0	88 18.1 +02.5	S	19 20.6 +00.0	01										
02	215 04.7 +00.9	S	06 52.8 +00.6	87 44.3 +02.5	S	15 09.1 +00.0	103 20.6 +02.4	S	19 20.6 +00.0	02										
03	230 05.6 +00.9	S	06 53.4 +00.7	102 46.8 +02.5	S	15 09.1 +00.0	118 23.0 +02.5	S	19 20.6 -00.1	03										
04	245 06.5 +01.0	S	06 54.1 +00.6	117 49.3 +02.5	S	15 09.1 +00.0	133 25.5 +02.4	S	19 20.5 +00.0	04										
05	260 07.5 +00.9	S	06 54.7 +00.7	132 51.8 +02.5	S	15 09.1 +00.0	148 27.9 +02.5	S	19 20.5 +00.0	05										
06	275 08.4 +00.9	S	06 55.4 +00.6	147 54.3 +02.5	S	15 09.1 +00.0	163 30.4 +02.4	S	19 20.5 +00.0	06										
07	290 09.3 +00.9	S	06 56.0 +00.7	162 56.8 +02.5	S	15 09.1 +00.0	178 32.8 +02.5	S	19 20.5 +00.0	07										
08	305 10.2 +01.0	S	06 56.7 +00.6	177 59.3 +02.5	S	15 09.1 +00.0	193 35.3 +02.4	S	19 20.5 +00.0	08										
09	320 11.2 +00.9	S	06 57.3 +00.6	193 01.8 +02.5	S	15 09.1 +00.0	208 37.7 +02.5	S	19 20.5 +00.0	09										
10	335 12.1 +00.9	S	06 57.9 +00.7	208 04.3 +02.4	S	15 09.1 +00.0	223 40.2 +02.4	S	19 20.5 +00.0	10										
11	350 13.0 +01.0	S	06 58.6 +00.6	223 06.7 +02.5	S	15 09.1 +00.0	238 42.6 +02.5	S	19 20.5 +00.0	11										
12	5 14.0 +00.9	S	06 59.2 +00.7	238 09.2 +02.5	S	15 09.1 +00.1	253 45.1 +02.4	S	19 20.5 +00.0	12										
13	20 14.9 +00.9	S	06 59.9 +00.6	253 11.7 +02.5	S	15 09.2 +00.0	268 47.5 +02.5	S	19 20.5 +00.0	13										
14	35 15.8 +00.9	S	07 00.5 +00.7	268 14.2 +02.5	S	15 09.2 +00.0	283 50.0 +02.4	S	19 20.5 +00.0	14										
15	50 16.7 +01.0	S	07 01.2 +00.6	283 16.7 +02.5	S	15 09.2 +00.0	298 52.4 +02.5	S	19 20.5 +00.0	15										
16	65 17.7 +00.9	S	07 01.8 +00.7	298 19.2 +02.5	S	15 09.2 +00.0	313 54.9 +02.4	S	19 20.5 +00.0	16										
17	80 18.6 +00.9	S	07 02.5 +00.6	313 21.7 +02.5	S	15 09.2 +00.0	328 57.3 +02.5	S	19 20.5 +00.0	17										
18	95 19.5 +01.0	S	07 03.1 +00.6	328 24.2 +02.5	S	15 09.2 +00.0	343 59.8 +02.4	S	19 20.5 +00.0	18										
19	110 20.5 +00.9	S	07 03.7 +00.7	343 26.7 +02.5	S	15 09.2 +00.0	359 02.2 +02.5	S	19 20.5 +00.0	19										
20	125 21.4 +00.9	S	07 04.4 +00.6	358 29.2 +02.5	S	15 09.2 +00.0	14 04.7 +02.4	S	19 20.5 +00.0	20										
21	140 22.3 +00.9	S	07 05.0 +00.7	13 31.7 +02.5	S	15 09.2 +00.0	29 07.1 +02.4	S	19 20.5 +00.0	21										
22	155 23.2 +01.0	S	07 05.7 +00.6	28 34.2 +02.5	S	15 09.2 +00.0	44 09.5 +02.5	S	19 20.5 +00.0	22										
23	170 24.2 +00.9	S	07 06.3 +00.7	43 36.7 +02.5	S	15 09.2 +00.0	59 12.0 +02.4	S	19 20.5 +00.0	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°4	00°4	00°4	00°4	00°4	00°4	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	162°	162°	162°	162°	162°	162°	SHA	035°	035°	035°	035°	035°	035°	SHA						
Greenwich Culmination Time: 11:39							Greenwich Culmination Time: 20:06							Greenwich Culmination Time: 19:03						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 32.5 +00.1	S	08 30.9 +01.0	137 52.4 -00.4	S	24 40.2 +00.5	64 20.4 -31.9	S	20 56.4 -09.4	00			
01	198 32.6 +00.2	S	08 31.9 +00.9	152 52.0 -00.5	S	24 40.7 +00.6	78 48.5 -31.9	S	20 47.0 -09.4	01			
02	213 32.8 +00.1	S	08 32.8 +00.9	167 51.5 -00.4	S	24 41.3 +00.6	93 16.6 -31.7	S	20 37.6 -09.6	02			
03	228 32.9 +00.1	S	08 33.7 +00.9	182 51.1 -00.4	S	24 41.9 +00.5	107 44.9 -31.6	S	20 28.0 -09.6	03			
04	243 33.0 +00.2	S	08 34.6 +00.9	197 50.7 -00.4	S	24 42.4 +00.6	122 13.3 -31.5	S	20 18.4 -09.8	04			
05	258 33.2 +00.1	S	08 35.5 +01.0	212 50.3 -00.4	S	24 43.0 +00.6	136 41.8 -31.5	S	20 08.6 -09.9	05			
06	273 33.3 +00.2	S	08 36.5 +00.9	227 49.9 -00.4	S	24 43.6 +00.5	151 10.3 -31.3	S	19 58.7 -09.9	06			
07	288 33.5 +00.1	S	08 37.4 +00.9	242 49.5 -00.5	S	24 44.1 +00.6	165 39.0 -31.2	S	19 48.8 -10.1	07			
08	303 33.6 +00.1	S	08 38.3 +00.9	257 49.0 -00.4	S	24 44.7 +00.5	180 07.8 -31.2	S	19 38.7 -10.2	08			
09	318 33.7 +00.2	S	08 39.2 +01.0	272 48.6 -00.4	S	24 45.2 +00.6	194 36.6 -31.0	S	19 28.5 -10.2	09			
10	333 33.9 +00.1	S	08 40.2 +00.9	287 48.2 -00.4	S	24 45.8 +00.6	209 05.6 -30.9	S	19 18.3 -10.4	10			
11	348 34.0 +00.2	S	08 41.1 +00.9	302 47.8 -00.4	S	24 46.4 +00.5	223 34.7 -30.9	S	19 07.9 -10.4	11			
12	3 34.2 +00.1	S	08 42.0 +00.9	317 47.4 -00.4	S	24 46.9 +00.6	238 03.8 -30.8	S	18 57.5 -10.6	12			
13	18 34.3 +00.1	S	08 42.9 +01.0	332 47.0 -00.4	S	24 47.5 +00.5	252 33.0 -30.6	S	18 46.9 -10.6	13			
14	33 34.4 +00.2	S	08 43.9 +00.9	347 46.6 -00.5	S	24 48.0 +00.6	267 02.4 -30.6	S	18 36.3 -10.7	14			
15	48 34.6 +00.1	S	08 44.8 +00.9	2 46.1 -00.4	S	24 48.6 +00.5	281 31.8 -30.5	S	18 25.6 -10.8	15			
16	63 34.7 +00.1	S	08 45.7 +00.9	17 45.7 -00.4	S	24 49.1 +00.6	296 01.3 -30.3	S	18 14.8 -10.9	16			
17	78 34.8 +00.2	S	08 46.6 +00.9	32 45.3 -00.4	S	24 49.7 +00.5	310 31.0 -30.3	S	18 03.9 -10.9	17			
18	93 35.0 +00.1	S	08 47.5 +01.0	47 44.9 -00.4	S	24 50.2 +00.6	325 00.7 -30.2	S	17 53.0 -11.1	18			
19	108 35.1 +00.1	S	08 48.5 +00.9	62 44.5 -00.4	S	24 50.8 +00.5	339 30.5 -30.1	S	17 41.9 -11.1	19			
20	123 35.2 +00.2	S	08 49.4 +00.9	77 44.1 -00.4	S	24 51.3 +00.6	354 00.4 -30.1	S	17 30.8 -11.3	20			
21	138 35.4 +00.1	S	08 50.3 +00.9	92 43.7 -00.5	S	24 51.9 +00.5	8 30.3 -29.9	S	17 19.5 -11.2	21			
22	153 35.5 +00.2	S	08 51.2 +00.9	107 43.2 -00.4	S	24 52.4 +00.6	23 00.4 -29.8	S	17 08.3 -11.4	22			
23	168 35.7 +00.1	S	08 52.1 +01.0	122 42.8 -00.4	S	24 53.0 +00.5	37 30.6 -29.8	S	16 56.9 -11.5	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'0 16'0 16'0 16'0 16'0 16'0			SD 00'2 00'2 00'2 00'2 00'2 00'2			SD 15'7 15'6 15'6 15'6 15'6 15'5						
	HP 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 57'5 57'4 57'3 57'2 57'2 57'1						
	SHA 160° 160° 159° 159° 159° 159°			SHA 114° 114° 114° 113° 113° 113°			SHA 039° 037° 035° 033° 031° 028°						
	Greenwich Culmination Time: 11:45			Greenwich Culmination Time: 14:48			Greenwich Culmination Time: 20:24						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	185 25.1 +00.9	S	07 07.0 +00.6	58 39.2 +02.5	S	15 09.2 +00.0	74 14.4 +02.5	S	19 20.5 +00.0	00			
01	200 26.0 +01.0	S	07 07.6 +00.6	73 41.7 +02.5	S	15 09.2 +00.0	89 16.9 +02.4	S	19 20.5 +00.0	01			
02	215 27.0 +00.9	S	07 08.2 +00.7	88 44.2 +02.5	S	15 09.2 +00.0	104 19.3 +02.5	S	19 20.5 +00.0	02			
03	230 27.9 +00.9	S	07 08.9 +00.6	103 46.7 +02.4	S	15 09.2 +00.0	119 21.8 +02.4	S	19 20.5 +00.0	03			
04	245 28.8 +00.9	S	07 09.5 +00.7	118 49.1 +02.5	S	15 09.2 +00.0	134 24.2 +02.5	S	19 20.5 -00.1	04			
05	260 29.7 +01.0	S	07 10.2 +00.6	133 51.6 +02.5	S	15 09.2 +00.0	149 26.7 +02.4	S	19 20.4 +00.0	05			
06	275 30.7 +00.9	S	07 10.8 +00.6	148 54.1 +02.5	S	15 09.2 +00.0	164 29.1 +02.5	S	19 20.4 +00.0	06			
07	290 31.6 +00.9	S	07 11.4 +00.7	163 56.6 +02.5	S	15 09.2 +00.0	179 31.6 +02.4	S	19 20.4 +00.0	07			
08	305 32.5 +00.9	S	07 12.1 +00.6	178 59.1 +02.5	S	15 09.2 +00.0	194 34.0 +02.5	S	19 20.4 +00.0	08			
09	320 33.4 +01.0	S	07 12.7 +00.7	194 01.6 +02.5	S	15 09.2 +00.0	209 36.5 +02.4	S	19 20.4 +00.0	09			
10	335 34.4 +00.9	S	07 13.4 +00.6	209 04.1 +02.5	S	15 09.2 +00.0	224 38.9 +02.5	S	19 20.4 +00.0	10			
11	350 35.3 +00.9	S	07 14.0 +00.7	224 06.6 +02.5	S	15 09.2 +00.0	239 41.4 +02.4	S	19 20.4 +00.0	11			
12	5 36.2 +00.9	S	07 14.7 +00.6	239 09.1 +02.4	S	15 09.2 +00.0	254 43.8 +02.4	S	19 20.4 +00.0	12			
13	20 37.1 +01.0	S	07 15.3 +00.6	254 11.5 +02.5	S	15 09.2 +00.0	269 46.2 +02.5	S	19 20.4 +00.0	13			
14	35 38.1 +00.9	S	07 15.9 +00.7	269 14.0 +02.5	S	15 09.2 +00.0	284 48.7 +02.4	S	19 20.4 +00.0	14			
15	50 39.0 +00.9	S	07 16.6 +00.6	284 16.5 +02.5	S	15 09.2 +00.0	299 51.1 +02.5	S	19 20.4 +00.0	15			
16	65 39.9 +01.0	S	07 17.2 +00.7	299 19.0 +02.5	S	15 09.2 +00.0	314 53.6 +02.4	S	19 20.4 +00.0	16			
17	80 40.9 +00.9	S	07 17.9 +00.6	314 21.5 +02.5	S	15 09.2 +00.0	329 56.0 +02.5	S	19 20.4 +00.0	17			
18	95 41.8 +00.9	S	07 18.5 +00.7	329 24.0 +02.5	S	15 09.2 +00.1	344 58.5 +02.4	S	19 20.4 +00.0	18			
19	110 42.7 +00.9	S	07 19.2 +00.6	344 26.5 +02.5	S	15 09.3 +00.0	0 00.9 +02.5	S	19 20.4 +00.0	19			
20	125 43.6 +01.0	S	07 19.8 +00.6	359 29.0 +02.4	S	15 09.3 +00.0	15 03.4 +02.4	S	19 20.4 +00.0	20			
21	140 44.6 +00.9	S	07 20.4 +00.7	14 31.4 +02.5	S	15 09.3 +00.0	30 05.8 +02.4	S	19 20.4 +00.0	21			
22	155 45.5 +00.9	S	07 21.1 +00.6	29 33.9 +02.5	S	15 09.3 +00.0	45 08.2 +02.5	S	19 20.4 +00.0	22			
23	170 46.4 +00.9	S	07 21.7 +00.7	44 36.4 +02.5	S	15 09.3 +00.0	60 10.7 +02.4	S	19 20.4 +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 00'4 00'4 00'4 00'4 00'4 00'4			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 162° 162° 161° 161° 161° 161°			SHA 035° 035° 035° 035° 035° 035°			SHA 050° 050° 050° 050° 050° 050°						
	Greenwich Culmination Time: 11:37			Greenwich Culmination Time: 20:02			Greenwich Culmination Time: 18:59						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	183 35.8 +00.1	S	08 53.1 +00.9	137 42.4 -00.4	S	24 53.5 +00.5	52 00.8 -29.6	S	16 45.4 -11.5	00										
01	198 35.9 +00.2	S	08 54.0 +00.9	152 42.0 -00.4	S	24 54.0 +00.6	66 31.2 -29.6	S	16 33.9 -11.6	01										
02	213 36.1 +00.1	S	08 54.9 +00.9	167 41.6 -00.4	S	24 54.6 +00.5	81 01.6 -29.5	S	16 22.3 -11.7	02										
03	228 36.2 +00.1	S	08 55.8 +00.9	182 41.2 -00.4	S	24 55.1 +00.6	95 32.1 -29.4	S	16 10.6 -11.7	03										
04	243 36.3 +00.2	S	08 56.7 +01.0	197 40.8 -00.5	S	24 55.7 +00.5	110 02.7 -29.3	S	15 58.9 -11.8	04										
05	258 36.5 +00.1	S	08 57.7 +00.9	212 40.3 -00.4	S	24 56.2 +00.5	124 33.4 -29.2	S	15 47.1 -11.9	05										
06	273 36.6 +00.1	S	08 58.6 +00.9	227 39.9 -00.4	S	24 56.7 +00.6	139 04.2 -29.2	S	15 35.2 -11.9	06										
07	288 36.7 +00.2	S	08 59.5 +00.9	242 39.5 -00.4	S	24 57.3 +00.5	153 35.0 -29.0	S	15 23.3 -12.0	07										
08	303 36.9 +00.1	S	09 00.4 +00.9	257 39.1 -00.4	S	24 57.8 +00.6	168 06.0 -29.0	S	15 11.3 -12.1	08										
09	318 37.0 +00.1	S	09 01.3 +00.9	272 38.7 -00.4	S	24 58.4 +00.5	182 37.0 -28.9	S	14 59.2 -12.2	09										
10	333 37.1 +00.2	S	09 02.2 +01.0	287 38.3 -00.4	S	24 58.9 +00.5	197 08.1 -28.8	S	14 47.0 -12.2	10										
11	348 37.3 +00.1	S	09 03.2 +00.9	302 37.9 -00.5	S	24 59.4 +00.5	211 39.3 -28.8	S	14 34.8 -12.2	11										
12	3 37.4 +00.1	S	09 04.1 +00.9	317 37.4 -00.4	S	24 59.9 +00.6	226 10.5 -28.6	S	14 22.6 -12.3	12										
13	18 37.5 +00.1	S	09 05.0 +00.9	332 37.0 -00.4	S	25 00.5 +00.5	240 41.9 -28.6	S	14 10.3 -12.4	13										
14	33 37.6 +00.2	S	09 05.9 +00.9	347 36.6 -00.4	S	25 01.0 +00.5	255 13.3 -28.5	S	13 57.9 -12.5	14										
15	48 37.8 +00.1	S	09 06.8 +00.9	2 36.2 -00.4	S	25 01.5 +00.6	269 44.8 -28.4	S	13 45.4 -12.4	15										
16	63 37.9 +00.1	S	09 07.7 +01.0	17 35.8 -00.4	S	25 02.1 +00.5	284 16.4 -28.4	S	13 33.0 -12.6	16										
17	78 38.0 +00.2	S	09 08.7 +00.9	32 35.4 -00.4	S	25 02.6 +00.5	298 48.0 -28.3	S	13 20.4 -12.6	17										
18	93 38.2 +00.1	S	09 09.6 +00.9	47 35.0 -00.5	S	25 03.1 +00.5	313 19.7 -28.2	S	13 07.8 -12.6	18										
19	108 38.3 +00.1	S	09 10.5 +00.9	62 34.5 -00.4	S	25 03.6 +00.6	327 51.5 -28.1	S	12 55.2 -12.7	19										
20	123 38.4 +00.2	S	09 11.4 +00.9	77 34.1 -00.4	S	25 04.2 +00.5	342 23.4 -28.1	S	12 42.5 -12.8	20										
21	138 38.6 +00.1	S	09 12.3 +00.9	92 33.7 -00.4	S	25 04.7 +00.5	356 55.3 -27.9	S	12 29.7 -12.8	21										
22	153 38.7 +00.1	S	09 13.2 +00.9	107 33.3 -00.4	S	25 05.2 +00.5	11 27.4 -28.0	S	12 16.9 -12.9	22										
23	168 38.8 +00.2	S	09 14.1 +01.0	122 32.9 -00.4	S	25 05.7 +00.5	25 59.4 -27.8	S	12 04.0 -12.8	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16'0	16'0	16'0	16'0	16'0	16'0	SD	00'2	00'2	00'2	00'2	00'2	00'2	SD						
HP	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						
SHA	159°	159°	158°	158°	158°	158°	SHA	113°	113°	112°	112°	112°	112°	SHA						
Greenwich Culmination Time: 11:45							Greenwich Culmination Time: 14:49							Greenwich Culmination Time: 21:12						
UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	185 47.3 +01.0	S	07 22.4 +00.6	59 38.9 +02.5	S	15 09.3 +00.0	75 13.1 +02.5	S	19 20.4 -00.1	00										
01	200 48.3 +00.9	S	07 23.0 +00.6	74 41.4 +02.5	S	15 09.3 +00.0	90 15.6 +02.4	S	19 20.3 +00.0	01										
02	215 49.2 +00.9	S	07 23.6 +00.7	89 43.9 +02.4	S	15 09.3 +00.0	105 18.0 +02.5	S	19 20.3 +00.0	02										
03	230 50.1 +00.9	S	07 24.3 +00.6	104 46.3 +02.5	S	15 09.3 +00.0	120 20.5 +02.4	S	19 20.3 +00.0	03										
04	245 51.0 +00.9	S	07 24.9 +00.7	119 48.8 +02.5	S	15 09.3 +00.0	135 22.9 +02.4	S	19 20.3 +00.0	04										
05	260 51.9 +01.0	S	07 25.6 +00.6	134 51.3 +02.5	S	15 09.3 +00.0	150 25.3 +02.5	S	19 20.3 +00.0	05										
06	275 52.9 +00.9	S	07 26.2 +00.6	149 53.8 +02.5	S	15 09.3 +00.0	165 27.8 +02.4	S	19 20.3 +00.0	06										
07	290 53.8 +00.9	S	07 26.8 +00.7	164 56.3 +02.5	S	15 09.3 +00.0	180 30.2 +02.5	S	19 20.3 +00.0	07										
08	305 54.7 +00.9	S	07 27.5 +00.6	179 58.8 +02.4	S	15 09.3 +00.0	195 32.7 +02.4	S	19 20.3 +00.0	08										
09	320 55.6 +01.0	S	07 28.1 +00.7	195 01.2 +02.5	S	15 09.3 +00.0	210 35.1 +02.4	S	19 20.3 +00.0	09										
10	335 56.6 +00.9	S	07 28.8 +00.6	210 03.7 +02.5	S	15 09.3 +00.0	225 37.5 +02.5	S	19 20.3 +00.0	10										
11	350 57.5 +00.9	S	07 29.4 +00.6	225 06.2 +02.5	S	15 09.3 +00.0	240 40.0 +02.4	S	19 20.3 +00.0	11										
12	5 58.4 +00.9	S	07 30.0 +00.7	240 08.7 +02.5	S	15 09.3 +00.0	255 42.4 +02.5	S	19 20.3 +00.0	12										
13	20 59.3 +01.0	S	07 30.7 +00.6	255 11.2 +02.4	S	15 09.3 +00.0	270 44.9 +02.4	S	19 20.3 +00.0	13										
14	36 00.3 +00.9	S	07 31.3 +00.7	270 13.6 +02.5	S	15 09.3 +00.0	285 47.3 +02.5	S	19 20.3 +00.0	14										
15	51 01.2 +00.9	S	07 32.0 +00.6	285 16.1 +02.5	S	15 09.3 +00.0	300 49.8 +02.4	S	19 20.3 +00.0	15										
16	66 02.1 +00.9	S	07 32.6 +00.6	300 18.6 +02.5	S	15 09.3 +00.0	315 52.2 +02.4	S	19 20.3 +00.0	16										
17	81 03.0 +01.0	S	07 33.2 +00.7	315 21.1 +02.5	S	15 09.3 +00.0	330 54.6 +02.5	S	19 20.3 +00.0	17										
18	96 04.0 +00.9	S	07 33.9 +00.6	330 23.6 +02.4	S	15 09.3 +00.0	345 57.1 +02.4	S	19 20.3 -00.1	18										
19	111 04.9 +00.9	S	07 34.5 +00.7	345 26.0 +02.5	S	15 09.3 +00.0	0 59.5 +02.5	S	19 20.2 +00.0	19										
20	126 05.8 +00.9	S	07 35.2 +00.6	0 28.5 +02.5	S	15 09.3 +00.0	16 02.0 +02.4	S	19 20.2 +00.0	20										
21	141 06.7 +00.9	S	07 35.8 +00.6	15 31.0 +02.5	S	15 09.3 +00.0	31 04.4 +02.4	S	19 20.2 +00.0	21										
22	156 07.6 +01.0	S	07 36.4 +00.7	30 33.5 +02.4	S	15 09.3 +00.0	46 06.8 +02.5	S	19 20.2 +00.0	22										
23	171 08.6 +00.9	S	07 37.1 +00.6	45 35.9 +02.5	S	15 09.3 -00.1	61 09.3 +02.4	S	19 20.2 +00.0	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	00'4	00'4	00'4	00'4	00'4	00'4	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	161°	161°	161°	161°	161°	160°	SHA	035°	035°	035°	035°	035°	035°	SHA						
Greenwich Culmination Time: 11:36							Greenwich Culmination Time: 19:58							Greenwich Culmination Time: 18:56						

Sun					Venus					Moon					A: 41%					
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT							
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "								
00	183	39.0	+00.1	S 09 15.1	+00.9	137	32.5	-00.4	S 25 06.2	+00.6	40	31.6	-27.8	S 11 51.2	-13.0	00				
01	198	39.1	+00.1	S 09 16.0	+00.9	152	32.1	-00.4	S 25 06.8	+00.5	55	03.8	-27.7	S 11 38.2	-13.0	01				
02	213	39.2	+00.1	S 09 16.9	+00.9	167	31.7	-00.5	S 25 07.3	+00.5	69	36.1	-27.7	S 11 25.2	-13.0	02				
03	228	39.3	+00.2	S 09 17.8	+00.9	182	31.2	-00.4	S 25 07.8	+00.5	84	08.4	-27.5	S 11 12.2	-13.1	03				
04	243	39.5	+00.1	S 09 18.7	+00.9	197	30.8	-00.4	S 25 08.3	+00.5	98	40.9	-27.5	S 10 59.1	-13.1	04				
05	258	39.6	+00.1	S 09 19.6	+00.9	212	30.4	-00.4	S 25 08.8	+00.5	113	13.4	-27.5	S 10 46.0	-13.1	05				
06	273	39.7	+00.1	S 09 20.5	+01.0	227	30.0	-00.4	S 25 09.3	+00.6	127	45.9	-27.4	S 10 32.9	-13.2	06				
07	288	39.8	+00.2	S 09 21.5	+00.9	242	29.6	-00.4	S 25 09.9	+00.5	142	18.5	-27.3	S 10 19.7	-13.2	07				
08	303	40.0	+00.1	S 09 22.4	+00.9	257	29.2	-00.4	S 25 10.4	+00.5	156	51.2	-27.3	S 10 06.5	-13.3	08				
09	318	40.1	+00.1	S 09 23.3	+00.9	272	28.8	-00.5	S 25 10.9	+00.5	171	23.9	-27.2	S 09 53.2	-13.3	09				
10	333	40.2	+00.2	S 09 24.2	+00.9	287	28.3	-00.4	S 25 11.4	+00.5	185	56.7	-27.1	S 09 39.9	-13.3	10				
11	348	40.4	+00.1	S 09 25.1	+00.9	302	27.9	-00.4	S 25 11.9	+00.5	200	29.6	-27.1	S 09 26.6	-13.4	11				
12	3	40.5	+00.1	S 09 26.0	+00.9	317	27.5	-00.4	S 25 12.4	+00.5	215	02.5	-27.1	S 09 13.2	-13.4	12				
13	18	40.6	+00.1	S 09 26.9	+00.9	332	27.1	-00.4	S 25 12.9	+00.5	229	35.4	-26.9	S 08 59.8	-13.4	13				
14	33	40.7	+00.2	S 09 27.8	+00.9	347	26.7	-00.4	S 25 13.4	+00.5	244	08.5	-27.0	S 08 46.4	-13.4	14				
15	48	40.9	+00.1	S 09 28.7	+01.0	2	26.3	-00.4	S 25 13.9	+00.5	258	41.5	-26.8	S 08 33.0	-13.5	15				
16	63	41.0	+00.1	S 09 29.7	+00.9	17	25.9	-00.4	S 25 14.4	+00.5	273	14.7	-26.8	S 08 19.5	-13.5	16				
17	78	41.1	+00.1	S 09 30.6	+00.9	32	25.5	-00.4	S 25 14.9	+00.5	287	47.9	-26.8	S 08 06.0	-13.6	17				
18	93	41.2	+00.2	S 09 31.5	+00.9	47	25.1	-00.5	S 25 15.4	+00.5	302	21.1	-26.7	S 07 52.4	-13.5	18				
19	108	41.4	+00.1	S 09 32.4	+00.9	62	24.6	-00.4	S 25 15.9	+00.5	316	54.4	-26.7	S 07 38.9	-13.6	19				
20	123	41.5	+00.1	S 09 33.3	+00.9	77	24.2	-00.4	S 25 16.4	+00.5	331	27.7	-26.6	S 07 25.3	-13.6	20				
21	138	41.6	+00.1	S 09 34.2	+00.9	92	23.8	-00.4	S 25 16.9	+00.5	346	01.1	-26.6	S 07 11.7	-13.6	21				
22	153	41.7	+00.1	S 09 35.1	+00.9	107	23.4	-00.4	S 25 17.4	+00.5	0	34.5	-26.5	S 06 58.1	-13.7	22				
23	168	41.8	+00.2	S 09 36.0	+00.9	122	23.0	-00.4	S 25 17.9	+00.5	15	08.0	-26.5	S 06 44.4	-13.7	23				
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT	02	06	10	14	18	22
SD	16°0	16°0	16°0	16°1	16°1	16°1	SD	00°2	00°2	00°2	00°2	00°2	00°2	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°2	00°2	00°2	00°2	00°2	00°2	HP	56°4	56°4	56°3	56°2	56°1	56°0
SHA	158°	158°	158°	157°	157°	157°	SHA	112°	112°	111°	111°	111°	111°	SHA	014°	012°	010°	008°	006°	004°
Greenwich Culmination Time: 11:45							Greenwich Culmination Time: 14:50							Greenwich Culmination Time: 21:57						

Mars					Jupiter					Saturn					UT					
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT							
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "								
00	186	09.5	+00.9	S 07 37.7	+00.7	60	38.4	+02.5	S 15 09.2	+00.0	76	11.7	+02.4	S 19 20.2	+00.0	00				
01	201	10.4	+00.9	S 07 38.4	+00.6	75	40.9	+02.5	S 15 09.2	+00.0	91	14.1	+02.5	S 19 20.2	+00.0	01				
02	216	11.3	+00.9	S 07 39.0	+00.6	90	43.4	+02.4	S 15 09.2	+00.0	106	16.6	+02.4	S 19 20.2	+00.0	02				
03	231	12.2	+01.0	S 07 39.6	+00.7	105	45.8	+02.5	S 15 09.2	+00.0	121	19.0	+02.5	S 19 20.2	+00.0	03				
04	246	13.2	+00.9	S 07 40.3	+00.6	120	48.3	+02.5	S 15 09.2	+00.0	136	21.5	+02.4	S 19 20.2	+00.0	04				
05	261	14.1	+00.9	S 07 40.9	+00.7	135	50.8	+02.5	S 15 09.2	+00.0	151	23.9	+02.4	S 19 20.2	+00.0	05				
06	276	15.0	+00.9	S 07 41.6	+00.6	150	53.3	+02.4	S 15 09.2	+00.0	166	26.3	+02.5	S 19 20.2	+00.0	06				
07	291	15.9	+00.9	S 07 42.2	+00.6	165	55.7	+02.5	S 15 09.2	+00.0	181	28.8	+02.4	S 19 20.2	+00.0	07				
08	306	16.8	+01.0	S 07 42.8	+00.7	180	58.2	+02.5	S 15 09.2	+00.0	196	31.2	+02.5	S 19 20.2	+00.0	08				
09	321	17.8	+00.9	S 07 43.5	+00.6	196	00.7	+02.5	S 15 09.2	+00.0	211	33.7	+02.4	S 19 20.2	-00.1	09				
10	336	18.7	+00.9	S 07 44.1	+00.7	211	03.2	+02.4	S 15 09.2	+00.0	226	36.1	+02.4	S 19 20.1	+00.0	10				
11	351	19.6	+00.9	S 07 44.8	+00.6	226	05.6	+02.5	S 15 09.2	+00.0	241	38.5	+02.5	S 19 20.1	+00.0	11				
12	6	20.5	+00.9	S 07 45.4	+00.6	241	08.1	+02.5	S 15 09.2	+00.0	256	41.0	+02.4	S 19 20.1	+00.0	12				
13	21	21.4	+01.0	S 07 46.0	+00.7	256	10.6	+02.4	S 15 09.2	+00.0	271	43.4	+02.4	S 19 20.1	+00.0	13				
14	36	22.4	+00.9	S 07 46.7	+00.6	271	13.0	+02.5	S 15 09.2	+00.0	286	45.8	+02.5	S 19 20.1	+00.0	14				
15	51	23.3	+00.9	S 07 47.3	+00.6	286	15.5	+02.5	S 15 09.2	+00.0	301	48.3	+02.4	S 19 20.1	+00.0	15				
16	66	24.2	+00.9	S 07 47.9	+00.7	301	18.0	+02.5	S 15 09.2	+00.0	316	50.7	+02.4	S 19 20.1	+00.0	16				
17	81	25.1	+00.9	S 07 48.6	+00.6	316	20.5	+02.4	S 15 09.2	+00.0	331	53.1	+02.5	S 19 20.1	+00.0	17				
18	96	26.0	+01.0	S 07 49.2	+00.7	331	22.9	+02.5	S 15 09.2	+00.0	346	55.6	+02.4	S 19 20.1	+00.0	18				
19	111	27.0	+00.9	S 07 49.9	+00.6	346	25.4	+02.5	S 15 09.2	+00.0	1	58.0	+02.4	S 19 20.1	+00.0	19				
20	126	27.9	+00.9	S 07 50.5	+00.6	1	27.9	+02.4	S 15 09.2	+00.0	17	00.4	+02.5	S 19 20.1	+00.0	20				
21	141	28.8	+00.9	S 07 51.1	+00.7	16	30.3	+02.5	S 15 09.2	+00.0	32	02.9	+02.4	S 19 20.1	+00.0	21				
22	156	29.7	+00.9	S 07 51.8	+00.6	31	32.8	+02.5	S 15 09.2	+00.0	47	05.3	+02.5	S 19 20.1	+00.0	22				
23	171	30.6	+01.0	S 07 52.4	+00.6	46	35.3	+02.4	S 15 09.2	+00.0	62	07.8	+02.4	S 19 20.1	-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°0	00°0	00°0	00°0	00°0	00°0	SD	00°4	00°4	00°4	00°4	00°4	00°4	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	160°	160°	160°	160°	160°	160°	SHA	035°	035°	035°	035°	035°	035°	SHA	050°	050°	050°	050°	050°	050°
Greenwich Culmination Time: 11:34							Greenwich Culmination Time: 19:54							Greenwich Culmination Time: 18:52						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 42.0 +00.1	S	09 36.9 +00.9	137 22.6 -00.4	S	25 18.4 +00.5	29 41.5 -26.4	S	06 30.7 -13.6	00			
01	198 42.1 +00.1	S	09 37.8 +00.9	152 22.2 -00.4	S	25 18.9 +00.5	44 15.1 -26.4	S	06 17.1 -13.8	01			
02	213 42.2 +00.1	S	09 38.7 +00.9	167 21.8 -00.4	S	25 19.4 +00.5	58 48.7 -26.3	S	06 03.3 -13.7	02			
03	228 42.3 +00.2	S	09 39.6 +01.0	182 21.4 -00.5	S	25 19.9 +00.5	73 22.4 -26.3	S	05 49.6 -13.7	03			
04	243 42.5 +00.1	S	09 40.6 +00.9	197 20.9 -00.4	S	25 20.4 +00.5	87 56.1 -26.3	S	05 35.9 -13.8	04			
05	258 42.6 +00.1	S	09 41.5 +00.9	212 20.5 -00.4	S	25 20.9 +00.5	102 29.8 -26.2	S	05 22.1 -13.7	05			
06	273 42.7 +00.1	S	09 42.4 +00.9	227 20.1 -00.4	S	25 21.4 +00.4	117 03.6 -26.2	S	05 08.4 -13.8	06			
07	288 42.8 +00.1	S	09 43.3 +00.9	242 19.7 -00.4	S	25 21.8 +00.5	131 37.4 -26.1	S	04 54.6 -13.8	07			
08	303 42.9 +00.2	S	09 44.2 +00.9	257 19.3 -00.4	S	25 22.3 +00.5	146 11.3 -26.1	S	04 40.8 -13.8	08			
09	318 43.1 +00.1	S	09 45.1 +00.9	272 18.9 -00.4	S	25 22.8 +00.5	160 45.2 -26.1	S	04 27.0 -13.8	09			
10	333 43.2 +00.1	S	09 46.0 +00.9	287 18.5 -00.4	S	25 23.3 +00.5	175 19.1 -26.0	S	04 13.2 -13.8	10			
11	348 43.3 +00.1	S	09 46.9 +00.9	302 18.1 -00.4	S	25 23.8 +00.5	189 53.1 -26.0	S	03 59.4 -13.9	11			
12	3 43.4 +00.1	S	09 47.8 +00.9	317 17.7 -00.5	S	25 24.3 +00.4	204 27.1 -26.0	S	03 45.5 -13.8	12			
13	18 43.5 +00.2	S	09 48.7 +00.9	332 17.2 -00.4	S	25 24.7 +00.5	219 01.1 -25.9	S	03 31.7 -13.8	13			
14	33 43.7 +00.1	S	09 49.6 +00.9	347 16.8 -00.4	S	25 25.2 +00.5	233 35.2 -25.9	S	03 17.9 -13.9	14			
15	48 43.8 +00.1	S	09 50.5 +00.9	2 16.4 -00.4	S	25 25.7 +00.5	248 09.3 -25.9	S	03 04.0 -13.8	15			
16	63 43.9 +00.1	S	09 51.4 +00.9	17 16.0 -00.4	S	25 26.2 +00.5	262 43.4 -25.9	S	02 50.2 -13.9	16			
17	78 44.0 +00.1	S	09 52.3 +00.9	32 15.6 -00.4	S	25 26.7 +00.4	277 17.5 -25.8	S	02 36.3 -13.9	17			
18	93 44.1 +00.2	S	09 53.2 +00.9	47 15.2 -00.4	S	25 27.1 +00.5	291 51.7 -25.8	S	02 22.4 -13.8	18			
19	108 44.3 +00.1	S	09 54.1 +00.9	62 14.8 -00.4	S	25 27.6 +00.5	306 25.9 -25.7	S	02 08.6 -13.9	19			
20	123 44.4 +00.1	S	09 55.0 +00.9	77 14.4 -00.4	S	25 28.1 +00.5	321 00.2 -25.8	S	01 54.7 -13.8	20			
21	138 44.5 +00.1	S	09 55.9 +00.9	92 14.0 -00.4	S	25 28.6 +00.4	335 34.4 -25.7	S	01 40.9 -13.9	21			
22	153 44.6 +00.1	S	09 56.8 +00.9	107 13.6 -00.4	S	25 29.0 +00.5	350 08.7 -25.7	S	01 27.0 -13.8	22			
23	168 44.7 +00.1	S	09 57.7 +01.0	122 13.2 -00.5	S	25 29.5 +00.5	4 43.0 -25.6	S	01 13.2 -13.9	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 00'2 00'2 00'2 00'2 00'2 00'2			SD 15'2 15'2 15'2 15'2 15'2 15'1						
	HP 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 55'9 55'9 55'8 55'7 55'6 55'6						
	SHA 157° 157° 157° 156° 156° 156°			SHA 111° 110° 110° 110° 110° 110°			SHA 002° 000° 358° 356° 354° 353°						
	Greenwich Culmination Time: 11:45			Greenwich Culmination Time: 14:50			Greenwich Culmination Time: 22:40						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	186 31.6 +00.9	S	07 53.0 +00.7	61 37.7 +02.5	S	15 09.2 +00.0	77 10.2 +02.4	S	19 20.0 +00.0	00			
01	201 32.5 +00.9	S	07 53.7 +00.6	76 40.2 +02.5	S	15 09.2 +00.0	92 12.6 +02.5	S	19 20.0 +00.0	01			
02	216 33.4 +00.9	S	07 54.3 +00.7	91 42.7 +02.4	S	15 09.2 +00.0	107 15.1 +02.4	S	19 20.0 +00.0	02			
03	231 34.3 +00.9	S	07 55.0 +00.6	106 45.1 +02.5	S	15 09.2 +00.0	122 17.5 +02.4	S	19 20.0 +00.0	03			
04	246 35.2 +00.9	S	07 55.6 +00.6	121 47.6 +02.5	S	15 09.2 -00.1	137 19.9 +02.5	S	19 20.0 +00.0	04			
05	261 36.1 +01.0	S	07 56.2 +00.7	136 50.1 +02.4	S	15 09.1 +00.0	152 22.4 +02.4	S	19 20.0 +00.0	05			
06	276 37.1 +00.9	S	07 56.9 +00.6	151 52.5 +02.5	S	15 09.1 +00.0	167 24.8 +02.4	S	19 20.0 +00.0	06			
07	291 38.0 +00.9	S	07 57.5 +00.6	166 55.0 +02.5	S	15 09.1 +00.0	182 27.2 +02.5	S	19 20.0 +00.0	07			
08	306 38.9 +00.9	S	07 58.1 +00.7	181 57.5 +02.4	S	15 09.1 +00.0	197 29.7 +02.4	S	19 20.0 +00.0	08			
09	321 39.8 +00.9	S	07 58.8 +00.6	196 59.9 +02.5	S	15 09.1 +00.0	212 32.1 +02.4	S	19 20.0 +00.0	09			
10	336 40.7 +01.0	S	07 59.4 +00.7	212 02.4 +02.5	S	15 09.1 +00.0	227 34.5 +02.5	S	19 20.0 +00.0	10			
11	351 41.7 +00.9	S	08 00.1 +00.6	227 04.9 +02.4	S	15 09.1 +00.0	242 37.0 +02.4	S	19 20.0 +00.0	11			
12	6 42.6 +00.9	S	08 00.7 +00.6	242 07.3 +02.5	S	15 09.1 +00.0	257 39.4 +02.4	S	19 20.0 -00.1	12			
13	21 43.5 +00.9	S	08 01.3 +00.7	257 09.8 +02.5	S	15 09.1 +00.0	272 41.8 +02.5	S	19 19.9 +00.0	13			
14	36 44.4 +00.9	S	08 02.0 +00.6	272 12.3 +02.4	S	15 09.1 +00.0	287 44.3 +02.4	S	19 19.9 +00.0	14			
15	51 45.3 +00.9	S	08 02.6 +00.6	287 14.7 +02.5	S	15 09.1 +00.0	302 46.7 +02.4	S	19 19.9 +00.0	15			
16	66 46.2 +01.0	S	08 03.2 +00.7	302 17.2 +02.4	S	15 09.1 +00.0	317 49.1 +02.4	S	19 19.9 +00.0	16			
17	81 47.2 +00.9	S	08 03.9 +00.6	317 19.6 +02.5	S	15 09.1 +00.0	332 51.5 +02.5	S	19 19.9 +00.0	17			
18	96 48.1 +00.9	S	08 04.5 +00.6	332 22.1 +02.5	S	15 09.1 +00.0	347 54.0 +02.4	S	19 19.9 +00.0	18			
19	111 49.0 +00.9	S	08 05.1 +00.7	347 24.6 +02.4	S	15 09.1 +00.0	2 56.4 +02.4	S	19 19.9 +00.0	19			
20	126 49.9 +00.9	S	08 05.8 +00.6	2 27.0 +02.5	S	15 09.1 +00.0	17 58.8 +02.5	S	19 19.9 +00.0	20			
21	141 50.8 +00.9	S	08 06.4 +00.7	17 29.5 +02.4	S	15 09.1 -00.1	33 01.3 +02.4	S	19 19.9 +00.0	21			
22	156 51.7 +00.9	S	08 07.1 +00.6	32 31.9 +02.5	S	15 09.0 +00.0	48 03.7 +02.4	S	19 19.9 +00.0	22			
23	171 52.6 +01.0	S	08 07.7 +00.6	47 34.4 +02.5	S	15 09.0 +00.0	63 06.1 +02.5	S	19 19.9 +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 00'0 00'0 00'0 00'0 00'0 00'0			SD 00'4 00'4 00'4 00'4 00'4 00'4			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 160° 160° 160° 159° 159° 159°			SHA 035° 035° 035° 035° 035° 035°			SHA 050° 050° 050° 050° 050° 050°						
	Greenwich Culmination Time: 11:33			Greenwich Culmination Time: 19:50			Greenwich Culmination Time: 18:48						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 44.8 +00.2	S	09 58.7 +00.9	137 12.7 -00.4	S	25 30.0 +00.4	19 17.4 -25.7	S	00 59.3 -13.8	00			
01	198 45.0 +00.1	S	09 59.6 +00.9	152 12.3 -00.4	S	25 30.4 +00.5	33 51.7 -25.6	S	00 45.5 -13.9	01			
02	213 45.1 +00.1	S	10 00.5 +00.9	167 11.9 -00.4	S	25 30.9 +00.5	48 26.1 -25.6	S	00 31.6 -13.8	02			
03	228 45.2 +00.1	S	10 01.4 +00.9	182 11.5 -00.4	S	25 31.4 +00.4	63 00.5 -25.6	S	00 17.8 -13.8	03			
04	243 45.3 +00.1	S	10 02.3 +00.9	197 11.1 -00.4	S	25 31.8 +00.5	77 34.9 -25.6	S	00 04.0 -13.9	04			
05	258 45.4 +00.1	S	10 03.2 +00.9	212 10.7 -00.4	S	25 32.3 +00.5	92 09.3 -25.6	N	00 09.9 +13.8	05			
06	273 45.5 +00.1	S	10 04.1 +00.9	227 10.3 -00.4	S	25 32.8 +00.4	106 43.7 -25.5	N	00 23.7 +13.8	06			
07	288 45.6 +00.2	S	10 05.0 +00.9	242 09.9 -00.4	S	25 33.2 +00.5	121 18.2 -25.5	N	00 37.5 +13.8	07			
08	303 45.8 +00.1	S	10 05.9 +00.9	257 09.5 -00.4	S	25 33.7 +00.5	135 52.7 -25.5	N	00 51.3 +13.7	08			
09	318 45.9 +00.1	S	10 06.8 +00.9	272 09.1 -00.4	S	25 34.2 +00.4	150 27.2 -25.5	N	01 05.0 +13.8	09			
10	333 46.0 +00.1	S	10 07.7 +00.9	287 08.7 -00.4	S	25 34.6 +00.5	165 01.7 -25.5	N	01 18.8 +13.8	10			
11	348 46.1 +00.1	S	10 08.6 +00.9	302 08.3 -00.4	S	25 35.1 +00.4	179 36.2 -25.5	N	01 32.6 +13.7	11			
12	3 46.2 +00.1	S	10 09.5 +00.9	317 07.9 -00.5	S	25 35.5 +00.5	194 10.7 -25.5	N	01 46.3 +13.7	12			
13	18 46.3 +00.1	S	10 10.4 +00.9	332 07.4 -00.4	S	25 36.0 +00.4	208 45.2 -25.4	N	02 00.0 +13.7	13			
14	33 46.4 +00.2	S	10 11.3 +00.9	347 07.0 -00.4	S	25 36.4 +00.5	223 19.8 -25.5	N	02 13.7 +13.7	14			
15	48 46.6 +00.1	S	10 12.2 +00.9	2 06.6 -00.4	S	25 36.9 +00.4	237 54.3 -25.4	N	02 27.4 +13.7	15			
16	63 46.7 +00.1	S	10 13.1 +00.9	17 06.2 -00.4	S	25 37.3 +00.5	252 28.9 -25.5	N	02 41.1 +13.7	16			
17	78 46.8 +00.1	S	10 14.0 +00.8	32 05.8 -00.4	S	25 37.8 +00.5	267 03.4 -25.4	N	02 54.8 +13.6	17			
18	93 46.9 +00.1	S	10 14.8 +00.9	47 05.4 -00.4	S	25 38.3 +00.4	281 38.0 -25.4	N	03 08.4 +13.6	18			
19	108 47.0 +00.1	S	10 15.7 +00.9	62 05.0 -00.4	S	25 38.7 +00.4	296 12.6 -25.5	N	03 22.0 +13.6	19			
20	123 47.1 +00.1	S	10 16.6 +00.9	77 04.6 -00.4	S	25 39.1 +00.5	310 47.1 -25.4	N	03 35.6 +13.6	20			
21	138 47.2 +00.1	S	10 17.5 +00.9	92 04.2 -00.4	S	25 39.6 +00.4	325 21.7 -25.4	N	03 49.2 +13.5	21			
22	153 47.3 +00.1	S	10 18.4 +00.9	107 03.8 -00.4	S	25 40.0 +00.5	339 56.3 -25.4	N	04 02.7 +13.6	22			
23	168 47.4 +00.2	S	10 19.3 +00.9	122 03.4 -00.4	S	25 40.5 +00.4	354 30.9 -25.4	N	04 16.3 +13.5	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 00'2 00'2 00'2 00'2 00'2 00'2				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 00'2 00'2 00'2 00'2 00'2 00'2				HP 55'5 55'4 55'3 55'3 55'2 55'1					
	SHA 156° 156° 156° 156° 155° 155°			SHA 109° 109° 109° 109° 109° 108°				SHA 351° 349° 347° 345° 343° 341°					
	Greenwich Culmination Time: 11:44			Greenwich Culmination Time: 14:51				Greenwich Culmination Time: 23:22					

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	186 53.6 +00.9	S	08 08.3 +00.7	62 36.9 +02.4	S	15 09.0 +00.0	78 08.6 +02.4	S	19 19.9 -00.1	00			
01	201 54.5 +00.9	S	08 09.0 +00.6	77 39.3 +02.5	S	15 09.0 +00.0	93 11.0 +02.4	S	19 19.8 +00.0	01			
02	216 55.4 +00.9	S	08 09.6 +00.6	92 41.8 +02.4	S	15 09.0 +00.0	108 13.4 +02.5	S	19 19.8 +00.0	02			
03	231 56.3 +00.9	S	08 10.2 +00.7	107 44.2 +02.5	S	15 09.0 +00.0	123 15.9 +02.4	S	19 19.8 +00.0	03			
04	246 57.2 +00.9	S	08 10.9 +00.6	122 46.7 +02.5	S	15 09.0 +00.0	138 18.3 +02.4	S	19 19.8 +00.0	04			
05	261 58.1 +00.9	S	08 11.5 +00.6	137 49.2 +02.4	S	15 09.0 +00.0	153 20.7 +02.4	S	19 19.8 +00.0	05			
06	276 59.0 +01.0	S	08 12.1 +00.7	152 51.6 +02.5	S	15 09.0 +00.0	168 23.1 +02.5	S	19 19.8 +00.0	06			
07	291 60.0 +00.9	S	08 12.8 +00.6	167 54.1 +02.4	S	15 09.0 +00.0	183 25.6 +02.4	S	19 19.8 +00.0	07			
08	307 00.9 +00.9	S	08 13.4 +00.6	182 56.5 +02.5	S	15 09.0 +00.0	198 28.0 +02.4	S	19 19.8 +00.0	08			
09	322 01.8 +00.9	S	08 14.0 +00.7	197 59.0 +02.4	S	15 09.0 +00.0	213 30.4 +02.5	S	19 19.8 +00.0	09			
10	337 02.7 +00.9	S	08 14.7 +00.6	213 01.4 +02.5	S	15 09.0 -00.1	228 32.9 +02.4	S	19 19.8 +00.0	10			
11	352 03.6 +00.9	S	08 15.3 +00.7	228 03.9 +02.5	S	15 08.9 +00.0	243 35.3 +02.4	S	19 19.8 -00.1	11			
12	7 04.5 +00.9	S	08 16.0 +00.6	243 06.4 +02.4	S	15 08.9 +00.0	258 37.7 +02.4	S	19 19.7 +00.0	12			
13	22 05.4 +01.0	S	08 16.6 +00.6	258 08.8 +02.5	S	15 08.9 +00.0	273 40.1 +02.5	S	19 19.7 +00.0	13			
14	37 06.4 +00.9	S	08 17.2 +00.7	273 11.3 +02.4	S	15 08.9 +00.0	288 42.6 +02.4	S	19 19.7 +00.0	14			
15	52 07.3 +00.9	S	08 17.9 +00.6	288 13.7 +02.5	S	15 08.9 +00.0	303 45.0 +02.4	S	19 19.7 +00.0	15			
16	67 08.2 +00.9	S	08 18.5 +00.6	303 16.2 +02.4	S	15 08.9 +00.0	318 47.4 +02.4	S	19 19.7 +00.0	16			
17	82 09.1 +00.9	S	08 19.1 +00.7	318 18.6 +02.5	S	15 08.9 +00.0	333 49.8 +02.5	S	19 19.7 +00.0	17			
18	97 10.0 +00.9	S	08 19.8 +00.6	333 21.1 +02.4	S	15 08.9 +00.0	348 52.3 +02.4	S	19 19.7 +00.0	18			
19	112 10.9 +00.9	S	08 20.4 +00.6	348 23.5 +02.5	S	15 08.9 +00.0	3 54.7 +02.4	S	19 19.7 +00.0	19			
20	127 11.8 +00.9	S	08 21.0 +00.7	3 26.0 +02.4	S	15 08.9 +00.0	18 57.1 +02.5	S	19 19.7 +00.0	20			
21	142 12.7 +01.0	S	08 21.7 +00.6	18 28.4 +02.5	S	15 08.9 -00.1	33 59.6 +02.4	S	19 19.7 +00.0	21			
22	157 13.7 +00.9	S	08 22.3 +00.6	33 30.9 +02.4	S	15 08.8 +00.0	49 02.0 +02.4	S	19 19.7 -00.1	22			
23	172 14.6 +00.9	S	08 22.9 +00.7	48 33.3 +02.5	S	15 08.8 +00.0	64 04.4 +02.4	S	19 19.6 +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 00'4 00'4 00'4 00'4 00'4 00'4				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 159° 159° 159° 159° 159° 159°			SHA 035° 035° 035° 035° 035° 035°				SHA 050° 050° 050° 050° 050° 050°					
	Greenwich Culmination Time: 11:31			Greenwich Culmination Time: 19:46				Greenwich Culmination Time: 18:44					

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 47.6 +00.1	S 10	20.2 +00.9	137 03.0 -00.4	S 25	40.9 +00.5	9 05.5 -25.5	N 04	29.8 +13.5	00			
01	198 47.7 +00.1	S 10	21.1 +00.9	152 02.6 -00.4	S 25	41.4 +00.4	23 40.0 -25.4	N 04	43.3 +13.4	01			
02	213 47.8 +00.1	S 10	22.0 +00.9	167 02.2 -00.4	S 25	41.8 +00.5	38 14.6 -25.4	N 04	56.7 +13.4	02			
03	228 47.9 +00.1	S 10	22.9 +00.9	182 01.8 -00.4	S 25	42.3 +00.4	52 49.2 -25.4	N 05	10.1 +13.4	03			
04	243 48.0 +00.1	S 10	23.8 +00.9	197 01.4 -00.4	S 25	42.7 +00.4	67 23.8 -25.5	N 05	23.5 +13.4	04			
05	258 48.1 +00.1	S 10	24.7 +00.9	212 01.0 -00.4	S 25	43.1 +00.5	81 58.3 -25.4	N 05	36.9 +13.3	05			
06	273 48.2 +00.1	S 10	25.6 +00.9	227 00.6 -00.4	S 25	43.6 +00.4	96 32.9 -25.5	N 05	50.2 +13.4	06			
07	288 48.3 +00.1	S 10	26.5 +00.9	242 00.2 -00.4	S 25	44.0 +00.5	111 07.4 -25.4	N 06	03.6 +13.2	07			
08	303 48.4 +00.1	S 10	27.4 +00.9	256 59.8 -00.4	S 25	44.5 +00.4	125 42.0 -25.5	N 06	16.8 +13.3	08			
09	318 48.5 +00.1	S 10	28.3 +00.9	271 59.4 -00.5	S 25	44.9 +00.4	140 16.5 -25.4	N 06	30.1 +13.2	09			
10	333 48.6 +00.1	S 10	29.2 +00.9	286 58.9 -00.4	S 25	45.3 +00.5	154 51.1 -25.5	N 06	43.3 +13.2	10			
11	348 48.7 +00.1	S 10	30.1 +00.9	301 58.5 -00.4	S 25	45.8 +00.4	169 25.6 -25.5	N 06	56.5 +13.1	11			
12	3 48.8 +00.2	S 10	31.0 +00.9	316 58.1 -00.4	S 25	46.2 +00.4	184 00.1 -25.5	N 07	09.6 +13.1	12			
13	18 49.0 +00.1	S 10	31.9 +00.8	331 57.7 -00.4	S 25	46.6 +00.5	198 34.6 -25.5	N 07	22.7 +13.1	13			
14	33 49.1 +00.1	S 10	32.7 +00.9	346 57.3 -00.4	S 25	47.1 +00.4	213 09.1 -25.5	N 07	35.8 +13.0	14			
15	48 49.2 +00.1	S 10	33.6 +00.9	1 56.9 -00.4	S 25	47.5 +00.4	227 43.6 -25.6	N 07	48.8 +13.0	15			
16	63 49.3 +00.1	S 10	34.5 +00.9	16 56.5 -00.4	S 25	47.9 +00.4	242 18.0 -25.5	N 08	01.8 +13.0	16			
17	78 49.4 +00.1	S 10	35.4 +00.9	31 56.1 -00.4	S 25	48.3 +00.5	256 52.5 -25.6	N 08	14.8 +12.9	17			
18	93 49.5 +00.1	S 10	36.3 +00.9	46 55.7 -00.4	S 25	48.8 +00.4	271 26.9 -25.6	N 08	27.7 +12.9	18			
19	108 49.6 +00.1	S 10	37.2 +00.9	61 55.3 -00.4	S 25	49.2 +00.4	286 01.3 -25.6	N 08	40.6 +12.8	19			
20	123 49.7 +00.1	S 10	38.1 +00.9	76 54.9 -00.4	S 25	49.6 +00.4	300 35.7 -25.6	N 08	53.4 +12.8	20			
21	138 49.8 +00.1	S 10	39.0 +00.9	91 54.5 -00.4	S 25	50.0 +00.5	315 10.1 -25.6	N 09	06.2 +12.8	21			
22	153 49.9 +00.1	S 10	39.9 +00.9	106 54.1 -00.4	S 25	50.5 +00.4	329 44.5 -25.7	N 09	19.0 +12.7	22			
23	168 50.0 +00.1	S 10	40.8 +00.9	121 53.7 -00.4	S 25	50.9 +00.4	344 18.8 -25.7	N 09	31.7 +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 16'1 16'1 16'1 16'1 16'1 16'1			SD 00'2 00'2 00'2 00'2 00'2 00'2			SD 15'0 15'0 15'0 15'0 14'9 14'9						
	HP 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 55'1 55'0 54'9 54'9 54'8 54'8						
	SHA 155° 155° 155° 155° 154° 154°			SHA 108° 108° 108° 108° 108° 107°			SHA 339° 338° 336° 334° 332° 330°						
	Greenwich Culmination Time: 11:44			Greenwich Culmination Time: 14:52			Greenwich Culmination Time: -1:00						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	187 15.5 +00.9	S 08	23.6 +00.6	63 35.8 +02.5	S 15	08.8 +00.0	79 06.8 +02.5	S 19	19.6 +00.0	00			
01	202 16.4 +00.9	S 08	24.2 +00.6	78 38.3 +02.4	S 15	08.8 +00.0	94 09.3 +02.4	S 19	19.6 +00.0	01			
02	217 17.3 +00.9	S 08	24.8 +00.7	93 40.7 +02.5	S 15	08.8 +00.0	109 11.7 +02.4	S 19	19.6 +00.0	02			
03	232 18.2 +00.9	S 08	25.5 +00.6	108 43.2 +02.4	S 15	08.8 +00.0	124 14.1 +02.4	S 19	19.6 +00.0	03			
04	247 19.1 +00.9	S 08	26.1 +00.6	123 45.6 +02.5	S 15	08.8 +00.0	139 16.5 +02.5	S 19	19.6 +00.0	04			
05	262 20.0 +00.9	S 08	26.7 +00.7	138 48.1 +02.4	S 15	08.8 +00.0	154 19.0 +02.4	S 19	19.6 +00.0	05			
06	277 20.9 +01.0	S 08	27.4 +00.6	153 50.5 +02.5	S 15	08.8 -00.1	169 21.4 +02.4	S 19	19.6 +00.0	06			
07	292 21.9 +00.9	S 08	28.0 +00.6	168 53.0 +02.4	S 15	08.7 +00.0	184 23.8 +02.4	S 19	19.6 +00.0	07			
08	307 22.8 +00.9	S 08	28.6 +00.7	183 55.4 +02.4	S 15	08.7 +00.0	199 26.2 +02.5	S 19	19.6 -00.1	08			
09	322 23.7 +00.9	S 08	29.3 +00.6	198 57.8 +02.5	S 15	08.7 +00.0	214 28.7 +02.4	S 19	19.5 +00.0	09			
10	337 24.6 +00.9	S 08	29.9 +00.6	214 00.3 +02.4	S 15	08.7 +00.0	229 31.1 +02.4	S 19	19.5 +00.0	10			
11	352 25.5 +00.9	S 08	30.5 +00.7	229 02.7 +02.5	S 15	08.7 +00.0	244 33.5 +02.4	S 19	19.5 +00.0	11			
12	7 26.4 +00.9	S 08	31.2 +00.6	244 05.2 +02.4	S 15	08.7 +00.0	259 35.9 +02.5	S 19	19.5 +00.0	12			
13	22 27.3 +00.9	S 08	31.8 +00.6	259 07.6 +02.5	S 15	08.7 +00.0	274 38.4 +02.4	S 19	19.5 +00.0	13			
14	37 28.2 +00.9	S 08	32.4 +00.7	274 10.1 +02.4	S 15	08.7 +00.0	289 40.8 +02.4	S 19	19.5 +00.0	14			
15	52 29.1 +00.9	S 08	33.1 +00.6	289 12.5 +02.5	S 15	08.7 -00.1	304 43.2 +02.4	S 19	19.5 +00.0	15			
16	67 30.0 +01.0	S 08	33.7 +00.6	304 15.0 +02.4	S 15	08.6 +00.0	319 45.6 +02.4	S 19	19.5 +00.0	16			
17	82 31.0 +00.9	S 08	34.3 +00.7	319 17.4 +02.5	S 15	08.6 +00.0	334 48.0 +02.5	S 19	19.5 +00.0	17			
18	97 31.9 +00.9	S 08	35.0 +00.6	334 19.9 +02.4	S 15	08.6 +00.0	349 50.5 +02.4	S 19	19.5 -00.1	18			
19	112 32.8 +00.9	S 08	35.6 +00.6	349 22.3 +02.5	S 15	08.6 +00.0	4 52.9 +02.4	S 19	19.4 +00.0	19			
20	127 33.7 +00.9	S 08	36.2 +00.7	4 24.8 +02.4	S 15	08.6 +00.0	19 55.3 +02.4	S 19	19.4 +00.0	20			
21	142 34.6 +00.9	S 08	36.9 +00.6	19 27.2 +02.4	S 15	08.6 +00.0	34 57.7 +02.5	S 19	19.4 +00.0	21			
22	157 35.5 +00.9	S 08	37.5 +00.6	34 29.6 +02.5	S 15	08.6 +00.0	50 00.2 +02.4	S 19	19.4 +00.0	22			
23	172 36.4 +00.9	S 08	38.1 +00.6	49 32.1 +02.4	S 15	08.6 -00.1	65 02.6 +02.4	S 19	19.4 +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 00'4 00'4 00'4 00'4 00'4 00'4			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 159° 158° 158° 158° 158° 158°			SHA 035° 035° 035° 035° 035° 035°			SHA 050° 050° 050° 050° 050° 050°						
	Greenwich Culmination Time: 11:30			Greenwich Culmination Time: 19:42			Greenwich Culmination Time: 18:40						

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	183 50.1 +00.1	S 10	41.7 +00.8	136 53.3 -00.4	S 25	51.3 +00.4	358 53.1 -25.7	N 09	44.4 +12.6	00										
01	198 50.2 +00.1	S 10	42.5 +00.9	151 52.9 -00.4	S 25	51.7 +00.4	13 27.4 -25.7	N 09	57.0 +12.6	01										
02	213 50.3 +00.1	S 10	43.4 +00.9	166 52.5 -00.4	S 25	52.1 +00.5	28 01.7 -25.7	N 10	09.6 +12.5	02										
03	228 50.4 +00.1	S 10	44.3 +00.9	181 52.1 -00.4	S 25	52.6 +00.4	42 36.0 -25.8	N 10	22.1 +12.5	03										
04	243 50.5 +00.1	S 10	45.2 +00.9	196 51.7 -00.4	S 25	53.0 +00.4	57 10.2 -25.8	N 10	34.6 +12.4	04										
05	258 50.6 +00.1	S 10	46.1 +00.9	211 51.3 -00.4	S 25	53.4 +00.4	71 44.4 -25.8	N 10	47.0 +12.4	05										
06	273 50.7 +00.1	S 10	47.0 +00.9	226 50.9 -00.4	S 25	53.8 +00.4	86 18.6 -25.8	N 10	59.4 +12.4	06										
07	288 50.8 +00.1	S 10	47.9 +00.9	241 50.5 -00.4	S 25	54.2 +00.4	100 52.8 -25.8	N 11	11.8 +12.3	07										
08	303 50.9 +00.1	S 10	48.8 +00.9	256 50.1 -00.4	S 25	54.6 +00.4	115 27.0 -25.9	N 11	24.1 +12.2	08										
09	318 51.0 +00.1	S 10	49.7 +00.8	271 49.7 -00.4	S 25	55.0 +00.4	130 01.1 -25.9	N 11	36.3 +12.2	09										
10	333 51.1 +00.1	S 10	50.5 +00.9	286 49.3 -00.4	S 25	55.4 +00.4	144 35.2 -26.0	N 11	48.5 +12.1	10										
11	348 51.2 +00.1	S 10	51.4 +00.9	301 48.9 -00.4	S 25	55.8 +00.5	159 09.2 -25.9	N 12	00.6 +12.1	11										
12	3 51.3 +00.1	S 10	52.3 +00.9	316 48.5 -00.4	S 25	56.3 +00.4	173 43.3 -26.0	N 12	12.7 +12.0	12										
13	18 51.4 +00.1	S 10	53.2 +00.9	331 48.1 -00.4	S 25	56.7 +00.4	188 17.3 -26.1	N 12	24.7 +12.0	13										
14	33 51.5 +00.1	S 10	54.1 +00.9	346 47.7 -00.4	S 25	57.1 +00.4	202 51.2 -26.0	N 12	36.7 +11.9	14										
15	48 51.6 +00.1	S 10	55.0 +00.9	1 47.3 -00.4	S 25	57.5 +00.4	217 25.2 -26.1	N 12	48.6 +11.8	15										
16	63 51.7 +00.1	S 10	55.9 +00.8	16 46.9 -00.4	S 25	57.9 +00.4	231 59.1 -26.1	N 13	00.4 +11.8	16										
17	78 51.8 +00.1	S 10	56.7 +00.9	31 46.5 -00.3	S 25	58.3 +00.4	246 33.0 -26.2	N 13	12.2 +11.8	17										
18	93 51.9 +00.1	S 10	57.6 +00.9	46 46.2 -00.4	S 25	58.7 +00.4	261 06.8 -26.1	N 13	24.0 +11.7	18										
19	108 52.0 +00.1	S 10	58.5 +00.9	61 45.8 -00.4	S 25	59.1 +00.4	275 40.7 -26.2	N 13	35.7 +11.6	19										
20	123 52.1 +00.1	S 10	59.4 +00.9	76 45.4 -00.4	S 25	59.5 +00.4	290 14.5 -26.3	N 13	47.3 +11.5	20										
21	138 52.2 +00.1	S 11	00.3 +00.9	91 45.0 -00.4	S 25	59.9 +00.4	304 48.2 -26.3	N 13	58.8 +11.5	21										
22	153 52.3 +00.1	S 11	01.2 +00.8	106 44.6 -00.4	S 26	00.3 +00.4	319 21.9 -26.3	N 14	10.3 +11.5	22										
23	168 52.4 +00.1	S 11	02.0 +00.9	121 44.2 -00.4	S 26	00.7 +00.4	333 55.6 -26.3	N 14	21.8 +11.3	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°2	00°2	00°2	00°2	00°2	00°2	SD						
HP	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						
SHA	154°	154°	154°	154°	153°	153°	SHA	107°	107°	107°	107°	106°	106°	SHA						
Greenwich Culmination Time: 11:44							Greenwich Culmination Time: 14:52							Greenwich Culmination Time: 00:04						

UT	Mars				Jupiter				Saturn				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	187 37.3 +00.9	S 08	38.7 +00.7	64 34.5 +02.5	S 15	08.5 +00.0	80 05.0 +02.4	S 19	19.4 +00.0	00										
01	202 38.2 +00.9	S 08	39.4 +00.6	79 37.0 +02.4	S 15	08.5 +00.0	95 07.4 +02.4	S 19	19.4 +00.0	01										
02	217 39.1 +00.9	S 08	40.0 +00.6	94 39.4 +02.5	S 15	08.5 +00.0	110 09.8 +02.5	S 19	19.4 +00.0	02										
03	232 40.0 +00.9	S 08	40.6 +00.7	109 41.9 +02.4	S 15	08.5 +00.0	125 12.3 +02.4	S 19	19.4 -00.1	03										
04	247 40.9 +01.0	S 08	41.3 +00.6	124 44.3 +02.4	S 15	08.5 +00.0	140 14.7 +02.4	S 19	19.3 +00.0	04										
05	262 41.9 +00.9	S 08	41.9 +00.6	139 46.7 +02.5	S 15	08.5 +00.0	155 17.1 +02.4	S 19	19.3 +00.0	05										
06	277 42.8 +00.9	S 08	42.5 +00.7	154 49.2 +02.4	S 15	08.5 +00.0	170 19.5 +02.5	S 19	19.3 +00.0	06										
07	292 43.7 +00.9	S 08	43.2 +00.6	169 51.6 +02.5	S 15	08.5 -00.1	185 22.0 +02.4	S 19	19.3 +00.0	07										
08	307 44.6 +00.9	S 08	43.8 +00.6	184 54.1 +02.4	S 15	08.4 +00.0	200 24.4 +02.4	S 19	19.3 +00.0	08										
09	322 45.5 +00.9	S 08	44.4 +00.7	199 56.5 +02.5	S 15	08.4 +00.0	215 26.8 +02.4	S 19	19.3 +00.0	09										
10	337 46.4 +00.9	S 08	45.1 +00.6	214 59.0 +02.4	S 15	08.4 +00.0	230 29.2 +02.4	S 19	19.3 +00.0	10										
11	352 47.3 +00.9	S 08	45.7 +00.6	230 01.4 +02.4	S 15	08.4 +00.0	245 31.6 +02.5	S 19	19.3 +00.0	11										
12	7 48.2 +00.9	S 08	46.3 +00.7	245 03.8 +02.5	S 15	08.4 +00.0	260 34.1 +02.4	S 19	19.3 -00.1	12										
13	22 49.1 +00.9	S 08	47.0 +00.6	260 06.3 +02.4	S 15	08.4 +00.0	275 36.5 +02.4	S 19	19.2 +00.0	13										
14	37 50.0 +00.9	S 08	47.6 +00.6	275 08.7 +02.4	S 15	08.4 -00.1	290 38.9 +02.4	S 19	19.2 +00.0	14										
15	52 50.9 +00.9	S 08	48.2 +00.6	290 11.1 +02.5	S 15	08.3 +00.0	305 41.3 +02.4	S 19	19.2 +00.0	15										
16	67 51.8 +00.9	S 08	48.8 +00.7	305 13.6 +02.4	S 15	08.3 +00.0	320 43.7 +02.4	S 19	19.2 +00.0	16										
17	82 52.7 +00.9	S 08	49.5 +00.6	320 16.0 +02.5	S 15	08.3 +00.0	335 46.1 +02.5	S 19	19.2 +00.0	17										
18	97 53.6 +00.9	S 08	50.1 +00.6	335 18.5 +02.4	S 15	08.3 +00.0	350 48.6 +02.4	S 19	19.2 +00.0	18										
19	112 54.5 +00.9	S 08	50.7 +00.7	350 20.9 +02.4	S 15	08.3 +00.0	5 51.0 +02.4	S 19	19.2 +00.0	19										
20	127 55.4 +01.0	S 08	51.4 +00.6	5 23.3 +02.5	S 15	08.3 -00.1	20 53.4 +02.4	S 19	19.2 -00.1	20										
21	142 56.4 +00.9	S 08	52.0 +00.6	20 25.8 +02.4	S 15	08.2 +00.0	35 55.8 +02.4	S 19	19.1 +00.0	21										
22	157 57.3 +00.9	S 08	52.6 +00.7	35 28.2 +02.4	S 15	08.2 +00.0	50 58.2 +02.5	S 19	19.1 +00.0	22										
23	172 58.2 +00.9	S 08	53.3 +00.6	50 30.6 +02.5	S 15	08.2 +00.0	66 00.7 +02.4	S 19	19.1 +00.0	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°4	00°4	00°4	00°4	00°4	00°4	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	158°	158°	158°	158°	157°	157°	SHA	035°	035°	035°	035°	035°	035°	SHA						
Greenwich Culmination Time: 11:28							Greenwich Culmination Time: 19:38							Greenwich Culmination Time: 18:36						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 52.5 +00.1	S	11 02.9 +00.9	136 43.8 -00.4	S	26 01.1 +00.4	348 29.3 -26.4	N	14 33.1 +11.4	00			
01	198 52.6 +00.1	S	11 03.8 +00.9	151 43.4 -00.4	S	26 01.5 +00.3	3 02.9 -26.4	N	14 44.5 +11.2	01			
02	213 52.7 +00.1	S	11 04.7 +00.9	166 43.0 -00.4	S	26 01.8 +00.4	17 36.5 -26.5	N	14 55.7 +11.2	02			
03	228 52.8 +00.1	S	11 05.6 +00.9	181 42.6 -00.4	S	26 02.2 +00.4	32 10.0 -26.5	N	15 06.9 +11.1	03			
04	243 52.9 +00.1	S	11 06.5 +00.8	196 42.2 -00.4	S	26 02.6 +00.4	46 43.5 -26.5	N	15 18.0 +11.0	04			
05	258 53.0 +00.1	S	11 07.3 +00.9	211 41.8 -00.4	S	26 03.0 +00.4	61 17.0 -26.6	N	15 29.0 +11.0	05			
06	273 53.1 +00.1	S	11 08.2 +00.9	226 41.4 -00.4	S	26 03.4 +00.4	75 50.4 -26.6	N	15 40.0 +10.9	06			
07	288 53.2 +00.0	S	11 09.1 +00.9	241 41.0 -00.4	S	26 03.8 +00.4	90 23.8 -26.7	N	15 50.9 +10.9	07			
08	303 53.2 +00.1	S	11 10.0 +00.9	256 40.6 -00.4	S	26 04.2 +00.4	104 57.1 -26.7	N	16 01.8 +10.7	08			
09	318 53.3 +00.1	S	11 10.9 +00.8	271 40.2 -00.4	S	26 04.6 +00.3	119 30.4 -26.7	N	16 12.5 +10.7	09			
10	333 53.4 +00.1	S	11 11.7 +00.9	286 39.8 -00.4	S	26 04.9 +00.4	134 03.7 -26.8	N	16 23.2 +10.7	10			
11	348 53.5 +00.1	S	11 12.6 +00.9	301 39.4 -00.3	S	26 05.3 +00.4	148 36.9 -26.8	N	16 33.9 +10.5	11			
12	3 53.6 +00.1	S	11 13.5 +00.9	316 39.1 -00.4	S	26 05.7 +00.4	163 10.1 -26.8	N	16 44.4 +10.5	12			
13	18 53.7 +00.1	S	11 14.4 +00.9	331 38.7 -00.4	S	26 06.1 +00.4	177 43.3 -26.9	N	16 54.9 +10.4	13			
14	33 53.8 +00.1	S	11 15.3 +00.8	346 38.3 -00.4	S	26 06.5 +00.3	192 16.4 -27.0	N	17 05.3 +10.3	14			
15	48 53.9 +00.1	S	11 16.1 +00.9	1 37.9 -00.4	S	26 06.8 +00.4	206 49.4 -27.0	N	17 15.6 +10.3	15			
16	63 54.0 +00.1	S	11 17.0 +00.9	16 37.5 -00.4	S	26 07.2 +00.4	221 22.4 -27.0	N	17 25.9 +10.2	16			
17	78 54.1 +00.1	S	11 17.9 +00.9	31 37.1 -00.4	S	26 07.6 +00.4	235 55.4 -27.1	N	17 36.1 +10.1	17			
18	93 54.2 +00.1	S	11 18.8 +00.8	46 36.7 -00.4	S	26 08.0 +00.4	250 28.3 -27.1	N	17 46.2 +10.0	18			
19	108 54.3 +00.1	S	11 19.6 +00.9	61 36.3 -00.4	S	26 08.4 +00.3	265 01.2 -27.1	N	17 56.2 +10.0	19			
20	123 54.4 +00.0	S	11 20.5 +00.9	76 35.9 -00.4	S	26 08.7 +00.4	279 34.1 -27.2	N	18 06.2 +09.8	20			
21	138 54.4 +00.1	S	11 21.4 +00.9	91 35.5 -00.4	S	26 09.1 +00.4	294 06.9 -27.3	N	18 16.0 +09.8	21			
22	153 54.5 +00.1	S	11 22.3 +00.9	106 35.1 -00.3	S	26 09.5 +00.3	308 39.6 -27.3	N	18 25.8 +09.7	22			
23	168 54.6 +00.1	S	11 23.2 +00.8	121 34.8 -00.4	S	26 09.8 +00.4	323 12.3 -27.3	N	18 35.5 +09.7	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°2 00°2 00°2 00°2 00°2 00°2			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°2 00°2 00°2 00°2 00°2 00°2			HP 54°4 54°4 54°3 54°3 54°2 54°2						
	SHA 153° 153° 153° 153° 153° 152°			SHA 106° 106° 106° 105° 105° 105°			SHA 317° 315° 313° 311° 309° 307°						
	Greenwich Culmination Time: 11:44			Greenwich Culmination Time: 14:53			Greenwich Culmination Time: 00:47						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	187 59.1 +00.9	S	08 53.9 +00.6	65 33.1 +02.4	S	15 08.2 +00.0	81 03.1 +02.4	S	19 19.1 +00.0	00			
01	202 60.0 +00.9	S	08 54.5 +00.6	80 35.5 +02.4	S	15 08.2 +00.0	96 05.5 +02.4	S	19 19.1 +00.0	01			
02	218 00.9 +00.9	S	08 55.1 +00.7	95 37.9 +02.5	S	15 08.2 +00.0	111 07.9 +02.4	S	19 19.1 +00.0	02			
03	233 01.8 +00.9	S	08 55.8 +00.6	110 40.4 +02.4	S	15 08.2 -00.1	126 10.3 +02.4	S	19 19.1 +00.0	03			
04	248 02.7 +00.9	S	08 56.4 +00.6	125 42.8 +02.4	S	15 08.1 +00.0	141 12.7 +02.5	S	19 19.1 +00.0	04			
05	263 03.6 +00.9	S	08 57.0 +00.7	140 45.2 +02.5	S	15 08.1 +00.0	156 15.2 +02.4	S	19 19.1 -00.1	05			
06	278 04.5 +00.9	S	08 57.7 +00.6	155 47.7 +02.4	S	15 08.1 +00.0	171 17.6 +02.4	S	19 19.0 +00.0	06			
07	293 05.4 +00.9	S	08 58.3 +00.6	170 50.1 +02.4	S	15 08.1 +00.0	186 20.0 +02.4	S	19 19.0 +00.0	07			
08	308 06.3 +00.9	S	08 58.9 +00.6	185 52.5 +02.5	S	15 08.1 +00.0	201 22.4 +02.4	S	19 19.0 +00.0	08			
09	323 07.2 +00.9	S	08 59.5 +00.7	200 55.0 +02.4	S	15 08.1 -00.1	216 24.8 +02.4	S	19 19.0 +00.0	09			
10	338 08.1 +00.9	S	09 00.2 +00.6	215 57.4 +02.4	S	15 08.0 +00.0	231 27.2 +02.5	S	19 19.0 +00.0	10			
11	353 09.0 +00.9	S	09 00.8 +00.6	230 59.8 +02.5	S	15 08.0 +00.0	246 29.7 +02.4	S	19 19.0 +00.0	11			
12	8 09.9 +00.9	S	09 01.4 +00.7	246 02.3 +02.4	S	15 08.0 +00.0	261 32.1 +02.4	S	19 19.0 +00.0	12			
13	23 10.8 +00.9	S	09 02.1 +00.6	261 04.7 +02.4	S	15 08.0 +00.0	276 34.5 +02.4	S	19 19.0 -00.1	13			
14	38 11.7 +00.9	S	09 02.7 +00.6	276 07.1 +02.5	S	15 08.0 +00.0	291 36.9 +02.4	S	19 18.9 +00.0	14			
15	53 12.6 +00.9	S	09 03.3 +00.6	291 09.6 +02.4	S	15 08.0 -00.1	306 39.3 +02.4	S	19 18.9 +00.0	15			
16	68 13.5 +00.9	S	09 03.9 +00.7	306 12.0 +02.4	S	15 07.9 +00.0	321 41.7 +02.4	S	19 18.9 +00.0	16			
17	83 14.4 +00.9	S	09 04.6 +00.6	321 14.4 +02.5	S	15 07.9 +00.0	336 44.1 +02.5	S	19 18.9 +00.0	17			
18	98 15.3 +00.9	S	09 05.2 +00.6	336 16.9 +02.4	S	15 07.9 +00.0	351 46.6 +02.4	S	19 18.9 +00.0	18			
19	113 16.2 +00.9	S	09 05.8 +00.7	351 19.3 +02.4	S	15 07.9 +00.0	6 49.0 +02.4	S	19 18.9 +00.0	19			
20	128 17.1 +00.9	S	09 06.5 +00.6	6 21.7 +02.4	S	15 07.9 -00.1	21 51.4 +02.4	S	19 18.9 +00.0	20			
21	143 18.0 +00.9	S	09 07.1 +00.6	21 24.1 +02.5	S	15 07.8 +00.0	36 53.8 +02.4	S	19 18.9 -00.1	21			
22	158 18.9 +00.9	S	09 07.7 +00.6	36 26.6 +02.4	S	15 07.8 +00.0	51 56.2 +02.4	S	19 18.8 +00.0	22			
23	173 19.8 +00.9	S	09 08.3 +00.7	51 29.0 +02.4	S	15 07.8 +00.0	66 58.6 +02.4	S	19 18.8 +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°4 00°4 00°4 00°4 00°4 00°4			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 157° 157° 157° 157° 157° 157°			SHA 035° 035° 035° 035° 035° 035°			SHA 050° 050° 050° 050° 050° 050°						
	Greenwich Culmination Time: 11:27			Greenwich Culmination Time: 19:34			Greenwich Culmination Time: 18:32						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 54.7 +00.1	S	11 24.0 +00.9	136 34.4 -00.4	S	26 10.2 +00.4	337 45.0 -27.4	N	18 45.2 +09.5	00			
01	198 54.8 +00.1	S	11 24.9 +00.9	151 34.0 -00.4	S	26 10.6 +00.3	352 17.6 -27.4	N	18 54.7 +09.5	01			
02	213 54.9 +00.1	S	11 25.8 +00.9	166 33.6 -00.4	S	26 10.9 +00.4	6 50.2 -27.5	N	19 04.2 +09.4	02			
03	228 55.0 +00.1	S	11 26.7 +00.8	181 33.2 -00.4	S	26 11.3 +00.4	21 22.7 -27.5	N	19 13.6 +09.3	03			
04	243 55.1 +00.0	S	11 27.5 +00.9	196 32.8 -00.4	S	26 11.7 +00.3	35 55.2 -27.6	N	19 22.9 +09.2	04			
05	258 55.1 +00.1	S	11 28.4 +00.9	211 32.4 -00.4	S	26 12.0 +00.4	50 27.6 -27.6	N	19 32.1 +09.1	05			
06	273 55.2 +00.1	S	11 29.3 +00.9	226 32.0 -00.4	S	26 12.4 +00.4	65 00.0 -27.7	N	19 41.2 +09.0	06			
07	288 55.3 +00.1	S	11 30.2 +00.8	241 31.6 -00.3	S	26 12.8 +00.3	79 32.3 -27.7	N	19 50.2 +09.0	07			
08	303 55.4 +00.1	S	11 31.0 +00.9	256 31.3 -00.4	S	26 13.1 +00.4	94 04.6 -27.7	N	19 59.2 +08.9	08			
09	318 55.5 +00.1	S	11 31.9 +00.9	271 30.9 -00.4	S	26 13.5 +00.3	108 36.9 -27.8	N	20 08.1 +08.7	09			
10	333 55.6 +00.1	S	11 32.8 +00.8	286 30.5 -00.4	S	26 13.8 +00.4	123 09.1 -27.9	N	20 16.8 +08.7	10			
11	348 55.7 +00.1	S	11 33.6 +00.9	301 30.1 -00.4	S	26 14.2 +00.4	137 41.2 -27.9	N	20 25.5 +08.6	11			
12	3 55.8 +00.0	S	11 34.5 +00.9	316 29.7 -00.4	S	26 14.6 +00.3	152 13.3 -27.9	N	20 34.1 +08.5	12			
13	18 55.8 +00.1	S	11 35.4 +00.9	331 29.3 -00.4	S	26 14.9 +00.4	166 45.4 -28.0	N	20 42.6 +08.4	13			
14	33 55.9 +00.1	S	11 36.3 +00.8	346 28.9 -00.3	S	26 15.3 +00.3	181 17.4 -28.1	N	20 51.0 +08.4	14			
15	48 56.0 +00.1	S	11 37.1 +00.9	1 28.6 -00.4	S	26 15.6 +00.4	195 49.3 -28.1	N	20 59.4 +08.2	15			
16	63 56.1 +00.1	S	11 38.0 +00.9	16 28.2 -00.4	S	26 16.0 +00.3	210 21.2 -28.1	N	21 07.6 +08.1	16			
17	78 56.2 +00.1	S	11 38.9 +00.8	31 27.8 -00.4	S	26 16.3 +00.4	224 53.1 -28.2	N	21 15.7 +08.1	17			
18	93 56.3 +00.0	S	11 39.7 +00.9	46 27.4 -00.4	S	26 16.7 +00.3	239 24.9 -28.2	N	21 23.8 +07.9	18			
19	108 56.3 +00.1	S	11 40.6 +00.9	61 27.0 -00.4	S	26 17.0 +00.4	253 56.7 -28.3	N	21 31.7 +07.9	19			
20	123 56.4 +00.1	S	11 41.5 +00.9	76 26.6 -00.3	S	26 17.4 +00.3	268 28.4 -28.3	N	21 39.6 +07.7	20			
21	138 56.5 +00.1	S	11 42.4 +00.8	91 26.3 -00.4	S	26 17.7 +00.4	283 00.1 -28.4	N	21 47.3 +07.7	21			
22	153 56.6 +00.1	S	11 43.2 +00.9	106 25.9 -00.4	S	26 18.1 +00.3	297 31.7 -28.5	N	21 55.0 +07.6	22			
23	168 56.7 +00.1	S	11 44.1 +00.9	121 25.5 -00.4	S	26 18.4 +00.4	312 03.2 -28.4	N	22 02.6 +07.4	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 00'2 00'2 00'2 00'2 00'2 00'2			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 00'2 00'2 00'2 00'2 00'2 00'2			HP 54'2 54'2 54'1 54'1 54'1 54'1						
	SHA 152° 152° 152° 152° 152° 151°			SHA 105° 105° 104° 104° 104° 104°			SHA 305° 303° 301° 299° 297° 295°						
	Greenwich Culmination Time: 11:44			Greenwich Culmination Time: 14:54			Greenwich Culmination Time: 01:31						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	188 20.7 +00.9	S	09 09.0 +00.6	66 31.4 +02.4	S	15 07.8 +00.0	82 01.0 +02.5	S	19 18.8 +00.0	00			
01	203 21.6 +00.9	S	09 09.6 +00.6	81 33.8 +02.5	S	15 07.8 +00.0	97 03.5 +02.4	S	19 18.8 +00.0	01			
02	218 22.5 +00.9	S	09 10.2 +00.7	96 36.3 +02.4	S	15 07.8 -00.1	112 05.9 +02.4	S	19 18.8 +00.0	02			
03	233 23.4 +00.9	S	09 10.9 +00.6	111 38.7 +02.4	S	15 07.7 +00.0	127 08.3 +02.4	S	19 18.8 +00.0	03			
04	248 24.3 +00.9	S	09 11.5 +00.6	126 41.1 +02.4	S	15 07.7 +00.0	142 10.7 +02.4	S	19 18.8 +00.0	04			
05	263 25.2 +00.9	S	09 12.1 +00.6	141 43.5 +02.5	S	15 07.7 +00.0	157 13.1 +02.4	S	19 18.8 -00.1	05			
06	278 26.1 +00.9	S	09 12.7 +00.7	156 46.0 +02.4	S	15 07.7 +00.0	172 15.5 +02.4	S	19 18.7 +00.0	06			
07	293 27.0 +00.9	S	09 13.4 +00.6	171 48.4 +02.4	S	15 07.7 -00.1	187 17.9 +02.4	S	19 18.7 +00.0	07			
08	308 27.9 +00.9	S	09 14.0 +00.6	186 50.8 +02.4	S	15 07.6 +00.0	202 20.3 +02.4	S	19 18.7 +00.0	08			
09	323 28.8 +00.9	S	09 14.6 +00.6	201 53.2 +02.5	S	15 07.6 +00.0	217 22.7 +02.5	S	19 18.7 +00.0	09			
10	338 29.7 +00.9	S	09 15.2 +00.7	216 55.7 +02.4	S	15 07.6 +00.0	232 25.2 +02.4	S	19 18.7 +00.0	10			
11	353 30.6 +00.9	S	09 15.9 +00.6	231 58.1 +02.4	S	15 07.6 +00.0	247 27.6 +02.4	S	19 18.7 +00.0	11			
12	8 31.5 +00.9	S	09 16.5 +00.6	247 00.5 +02.4	S	15 07.6 -00.1	262 30.0 +02.4	S	19 18.7 -00.1	12			
13	23 32.4 +00.9	S	09 17.1 +00.6	262 02.9 +02.5	S	15 07.5 +00.0	277 32.4 +02.4	S	19 18.6 +00.0	13			
14	38 33.3 +00.9	S	09 17.7 +00.7	277 05.4 +02.4	S	15 07.5 +00.0	292 34.8 +02.4	S	19 18.6 +00.0	14			
15	53 34.2 +00.9	S	09 18.4 +00.6	292 07.8 +02.4	S	15 07.5 +00.0	307 37.2 +02.4	S	19 18.6 +00.0	15			
16	68 35.1 +00.9	S	09 19.0 +00.6	307 10.2 +02.4	S	15 07.5 +00.0	322 39.6 +02.4	S	19 18.6 +00.0	16			
17	83 36.0 +00.9	S	09 19.6 +00.7	322 12.6 +02.4	S	15 07.5 -00.1	337 42.0 +02.4	S	19 18.6 +00.0	17			
18	98 36.9 +00.9	S	09 20.3 +00.6	337 15.0 +02.5	S	15 07.4 +00.0	352 44.4 +02.5	S	19 18.6 +00.0	18			
19	113 37.8 +00.9	S	09 20.9 +00.6	352 17.5 +02.4	S	15 07.4 +00.0	7 46.9 +02.4	S	19 18.6 -00.1	19			
20	128 38.7 +00.9	S	09 21.5 +00.6	7 19.9 +02.4	S	15 07.4 +00.0	22 49.3 +02.4	S	19 18.5 +00.0	20			
21	143 39.6 +00.9	S	09 22.1 +00.7	22 22.3 +02.4	S	15 07.4 +00.0	37 51.7 +02.4	S	19 18.5 +00.0	21			
22	158 40.5 +00.9	S	09 22.8 +00.6	37 24.7 +02.4	S	15 07.4 -00.1	52 54.1 +02.4	S	19 18.5 +00.0	22			
23	173 41.4 +00.9	S	09 23.4 +00.6	52 27.1 +02.5	S	15 07.3 +00.0	67 56.5 +02.4	S	19 18.5 +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 00'0 00'0 00'0 00'0 00'0 00'0			SD 00'4 00'4 00'4 00'4 00'4 00'4			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 157° 157° 156° 156° 156° 156°			SHA 035° 035° 035° 035° 035° 035°			SHA 050° 050° 050° 050° 050° 050°						
	Greenwich Culmination Time: 11:25			Greenwich Culmination Time: 19:30			Greenwich Culmination Time: 18:28						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 56.8 +00.0	S 11 45.0 +00.8	136 25.1 -00.4	S 26 18.8 +00.3	326 34.8 -28.6	N 22 10.0 +07.4	00						
01	198 56.8 +00.1	S 11 45.8 +00.9	151 24.7 -00.3	S 26 19.1 +00.3	341 06.2 -28.5	N 22 17.4 +07.3	01						
02	213 56.9 +00.1	S 11 46.7 +00.9	166 24.4 -00.4	S 26 19.4 +00.4	355 37.7 -28.6	N 22 24.7 +07.1	02						
03	228 57.0 +00.1	S 11 47.6 +00.8	181 24.0 -00.4	S 26 19.8 +00.3	10 09.1 -28.7	N 22 31.8 +07.1	03						
04	243 57.1 +00.1	S 11 48.4 +00.9	196 23.6 -00.4	S 26 20.1 +00.4	24 40.4 -28.7	N 22 38.9 +07.0	04						
05	258 57.2 +00.0	S 11 49.3 +00.9	211 23.2 -00.4	S 26 20.5 +00.3	39 11.7 -28.8	N 22 45.9 +06.8	05						
06	273 57.2 +00.1	S 11 50.2 +00.8	226 22.8 -00.4	S 26 20.8 +00.3	53 42.9 -28.8	N 22 52.7 +06.8	06						
07	288 57.3 +00.1	S 11 51.0 +00.9	241 22.4 -00.3	S 26 21.1 +00.4	68 14.1 -28.8	N 22 59.5 +06.6	07						
08	303 57.4 +00.1	S 11 51.9 +00.9	256 22.1 -00.4	S 26 21.5 +00.3	82 45.3 -29.0	N 23 06.1 +06.6	08						
09	318 57.5 +00.1	S 11 52.8 +00.8	271 21.7 -00.4	S 26 21.8 +00.3	97 16.3 -28.9	N 23 12.7 +06.4	09						
10	333 57.6 +00.0	S 11 53.6 +00.9	286 21.3 -00.4	S 26 22.1 +00.4	111 47.4 -29.0	N 23 19.1 +06.4	10						
11	348 57.6 +00.1	S 11 54.5 +00.9	301 20.9 -00.3	S 26 22.5 +00.3	126 18.4 -29.0	N 23 25.5 +06.2	11						
12	3 57.7 +00.1	S 11 55.4 +00.8	316 20.6 -00.4	S 26 22.8 +00.3	140 49.4 -29.1	N 23 31.7 +06.1	12						
13	18 57.8 +00.1	S 11 56.2 +00.9	331 20.2 -00.4	S 26 23.1 +00.4	155 20.3 -29.2	N 23 37.8 +06.1	13						
14	33 57.9 +00.0	S 11 57.1 +00.9	346 19.8 -00.4	S 26 23.5 +00.3	169 51.1 -29.1	N 23 43.9 +05.9	14						
15	48 57.9 +00.1	S 11 58.0 +00.8	1 19.4 -00.4	S 26 23.8 +00.3	184 22.0 -29.2	N 23 49.8 +05.8	15						
16	63 58.0 +00.1	S 11 58.8 +00.9	16 19.0 -00.3	S 26 24.1 +00.3	198 52.8 -29.3	N 23 55.6 +05.7	16						
17	78 58.1 +00.1	S 11 59.7 +00.8	31 18.7 -00.4	S 26 24.4 +00.4	213 23.5 -29.3	N 24 01.3 +05.6	17						
18	93 58.2 +00.0	S 12 00.5 +00.9	46 18.3 -00.4	S 26 24.8 +00.3	227 54.2 -29.4	N 24 06.9 +05.5	18						
19	108 58.2 +00.1	S 12 01.4 +00.9	61 17.9 -00.4	S 26 25.1 +00.3	242 24.8 -29.4	N 24 12.4 +05.3	19						
20	123 58.3 +00.1	S 12 02.3 +00.8	76 17.5 -00.3	S 26 25.4 +00.3	256 55.4 -29.4	N 24 17.7 +05.3	20						
21	138 58.4 +00.1	S 12 03.1 +00.9	91 17.2 -00.4	S 26 25.7 +00.3	271 26.0 -29.5	N 24 23.0 +05.1	21						
22	153 58.5 +00.0	S 12 04.0 +00.9	106 16.8 -00.4	S 26 26.0 +00.4	285 56.5 -29.5	N 24 28.1 +05.1	22						
23	168 58.5 +00.1	S 12 04.9 +00.8	121 16.4 -00.4	S 26 26.4 +00.3	300 27.0 -29.6	N 24 33.2 +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 16'1 16'1 16'1 16'1 16'1 16'1		SD 00'2 00'2 00'2 00'2 00'2 00'2		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 00'2 00'2 00'2 00'2 00'2 00'2		HP 54'1 54'0 54'0 54'0 54'0 54'0								
	SHA 151° 151° 151° 151° 151° 150°		SHA 104° 104° 103° 103° 103° 103°		SHA 293° 291° 289° 287° 285° 282°								
	Greenwich Culmination Time: 11:44		Greenwich Culmination Time: 14:54		Greenwich Culmination Time: 02:18								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	188 42.3 +00.9	S 09 24.0 +00.6	67 29.6 +02.4	S 15 07.3 +00.0	82 58.9 +02.4	S 19 18.5 +00.0	00						
01	203 43.2 +00.9	S 09 24.6 +00.7	82 32.0 +02.4	S 15 07.3 +00.0	98 01.3 +02.4	S 19 18.5 +00.0	01						
02	218 44.1 +00.9	S 09 25.3 +00.6	97 34.4 +02.4	S 15 07.3 +00.0	113 03.7 +02.4	S 19 18.5 +00.0	02						
03	233 45.0 +00.9	S 09 25.9 +00.6	112 36.8 +02.4	S 15 07.3 -00.1	128 06.1 +02.4	S 19 18.5 -00.1	03						
04	248 45.9 +00.9	S 09 26.5 +00.6	127 39.2 +02.5	S 15 07.2 +00.0	143 08.5 +02.4	S 19 18.4 +00.0	04						
05	263 46.8 +00.9	S 09 27.1 +00.7	142 41.7 +02.4	S 15 07.2 +00.0	158 10.9 +02.4	S 19 18.4 +00.0	05						
06	278 47.7 +00.9	S 09 27.8 +00.6	157 44.1 +02.4	S 15 07.2 +00.0	173 13.3 +02.5	S 19 18.4 +00.0	06						
07	293 48.6 +00.9	S 09 28.4 +00.6	172 46.5 +02.4	S 15 07.2 -00.1	188 15.8 +02.4	S 19 18.4 +00.0	07						
08	308 49.5 +00.9	S 09 29.0 +00.6	187 48.9 +02.4	S 15 07.1 +00.0	203 18.2 +02.4	S 19 18.4 +00.0	08						
09	323 50.4 +00.9	S 09 29.6 +00.7	202 51.3 +02.4	S 15 07.1 +00.0	218 20.6 +02.4	S 19 18.4 +00.0	09						
10	338 51.3 +00.9	S 09 30.3 +00.6	217 53.7 +02.5	S 15 07.1 +00.0	233 23.0 +02.4	S 19 18.4 -00.1	10						
11	353 52.2 +00.9	S 09 30.9 +00.6	232 56.2 +02.4	S 15 07.1 +00.0	248 25.4 +02.4	S 19 18.3 +00.0	11						
12	8 53.1 +00.9	S 09 31.5 +00.6	247 58.6 +02.4	S 15 07.1 -00.1	263 27.8 +02.4	S 19 18.3 +00.0	12						
13	23 54.0 +00.9	S 09 32.1 +00.6	263 01.0 +02.4	S 15 07.0 +00.0	278 30.2 +02.4	S 19 18.3 +00.0	13						
14	38 54.9 +00.9	S 09 32.7 +00.7	278 03.4 +02.4	S 15 07.0 +00.0	293 32.6 +02.4	S 19 18.3 +00.0	14						
15	53 55.8 +00.8	S 09 33.4 +00.6	293 05.8 +02.4	S 15 07.0 +00.0	308 35.0 +02.4	S 19 18.3 +00.0	15						
16	68 56.6 +00.9	S 09 34.0 +00.6	308 08.2 +02.4	S 15 07.0 -00.1	323 37.4 +02.4	S 19 18.3 -00.1	16						
17	83 57.5 +00.9	S 09 34.6 +00.6	323 10.6 +02.4	S 15 06.9 +00.0	338 39.8 +02.4	S 19 18.2 +00.0	17						
18	98 58.4 +00.9	S 09 35.2 +00.7	338 13.0 +02.5	S 15 06.9 +00.0	353 42.2 +02.4	S 19 18.2 +00.0	18						
19	113 59.3 +00.9	S 09 35.9 +00.6	353 15.5 +02.4	S 15 06.9 +00.0	8 44.6 +02.4	S 19 18.2 +00.0	19						
20	129 00.2 +00.9	S 09 36.5 +00.6	8 17.9 +02.4	S 15 06.9 -00.1	23 47.0 +02.4	S 19 18.2 +00.0	20						
21	144 01.1 +00.9	S 09 37.1 +00.6	23 20.3 +02.4	S 15 06.8 +00.0	38 49.4 +02.5	S 19 18.2 +00.0	21						
22	159 02.0 +00.9	S 09 37.7 +00.7	38 22.7 +02.4	S 15 06.8 +00.0	53 51.9 +02.4	S 19 18.2 +00.0	22						
23	174 02.9 +00.9	S 09 38.4 +00.6	53 25.1 +02.4	S 15 06.8 +00.0	68 54.3 +02.4	S 19 18.2 -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 00'0 00'0 00'0 00'0 00'0 00'0		SD 00'4 00'4 00'4 00'4 00'4 00'4		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 156° 156° 156° 156° 156° 156°		SHA 035° 035° 035° 035° 035° 035°		SHA 050° 050° 050° 050° 050° 050°								
	Greenwich Culmination Time: 11:24		Greenwich Culmination Time: 19:26		Greenwich Culmination Time: 18:25								

Sun					Venus					Moon					A: 65%					
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT							
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "								
00	183 58.6 +00.1	S	12 05.7 +00.9		136 16.0 -00.3	S	26 26.7 +00.3		314 57.4 -29.6	N	24 38.1 +04.8		00							
01	198 58.7 +00.1	S	12 06.6 +00.8		151 15.7 -00.4	S	26 27.0 +00.3		329 27.8 -29.6	N	24 42.9 +04.7		01							
02	213 58.8 +00.0	S	12 07.4 +00.9		166 15.3 -00.4	S	26 27.3 +00.3		343 58.2 -29.7	N	24 47.6 +04.6		02							
03	228 58.8 +00.1	S	12 08.3 +00.9		181 14.9 -00.3	S	26 27.6 +00.3		358 28.5 -29.7	N	24 52.2 +04.4		03							
04	243 58.9 +00.1	S	12 09.2 +00.8		196 14.6 -00.4	S	26 27.9 +00.4		12 58.8 -29.8	N	24 56.6 +04.4		04							
05	258 59.0 +00.1	S	12 10.0 +00.9		211 14.2 -00.4	S	26 28.3 +00.3		27 29.0 -29.8	N	25 01.0 +04.2		05							
06	273 59.1 +00.0	S	12 10.9 +00.8		226 13.8 -00.4	S	26 28.6 +00.3		41 59.2 -29.9	N	25 05.2 +04.1		06							
07	288 59.1 +00.1	S	12 11.7 +00.9		241 13.4 -00.3	S	26 28.9 +00.3		56 29.3 -29.8	N	25 09.3 +04.0		07							
08	303 59.2 +00.1	S	12 12.6 +00.9		256 13.1 -00.4	S	26 29.2 +00.3		70 59.5 -29.9	N	25 13.3 +03.9		08							
09	318 59.3 +00.0	S	12 13.5 +00.8		271 12.7 -00.4	S	26 29.5 +00.3		85 29.6 -30.0	N	25 17.2 +03.8		09							
10	333 59.3 +00.1	S	12 14.3 +00.9		286 12.3 -00.3	S	26 29.8 +00.3		99 59.6 -30.0	N	25 21.0 +03.6		10							
11	348 59.4 +00.1	S	12 15.2 +00.8		301 12.0 -00.4	S	26 30.1 +00.3		114 29.6 -30.0	N	25 24.6 +03.6		11							
12	3 59.5 +00.1	S	12 16.0 +00.9		316 11.6 -00.4	S	26 30.4 +00.3		128 59.6 -30.1	N	25 28.2 +03.4		12							
13	18 59.6 +00.0	S	12 16.9 +00.8		331 11.2 -00.4	S	26 30.7 +00.3		143 29.5 -30.1	N	25 31.6 +03.3		13							
14	33 59.6 +00.1	S	12 17.7 +00.9		346 10.8 -00.3	S	26 31.0 +00.3		157 59.4 -30.1	N	25 34.9 +03.2		14							
15	48 59.7 +00.1	S	12 18.6 +00.9		1 10.5 -00.4	S	26 31.3 +00.3		172 29.3 -30.1	N	25 38.1 +03.0		15							
16	63 59.8 +00.0	S	12 19.5 +00.8		16 10.1 -00.4	S	26 31.6 +00.3		186 59.2 -30.2	N	25 41.1 +02.9		16							
17	78 59.8 +00.1	S	12 20.3 +00.9		31 09.7 -00.3	S	26 31.9 +00.3		201 29.0 -30.2	N	25 44.0 +02.9		17							
18	93 59.9 +00.1	S	12 21.2 +00.8		46 09.4 -00.4	S	26 32.2 +00.3		215 58.8 -30.3	N	25 46.9 +02.6		18							
19	108 60.0 +00.0	S	12 22.0 +00.9		61 09.0 -00.4	S	26 32.5 +00.3		230 28.5 -30.3	N	25 49.5 +02.6		19							
20	124 00.0 +00.1	S	12 22.9 +00.8		76 08.6 -00.3	S	26 32.8 +00.3		244 58.2 -30.3	N	25 52.1 +02.5		20							
21	139 00.1 +00.1	S	12 23.7 +00.9		91 08.3 -00.4	S	26 33.1 +00.3		259 27.9 -30.3	N	25 54.6 +02.3		21							
22	154 00.2 +00.0	S	12 24.6 +00.8		106 07.9 -00.4	S	26 33.4 +00.3		273 57.6 -30.4	N	25 56.9 +02.2		22							
23	169 00.2 +00.1	S	12 25.4 +00.9		121 07.5 -00.3	S	26 33.7 +00.3		288 27.2 -30.4	N	25 59.1 +02.1		23							
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	00'2	00'2	00'2	00'2	00'2	00'2					
HP	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					
SHA	150°	150°	150°	150°	150°	149°			SHA	103°	102°	102°	102°	102°	102°					
Greenwich Culmination Time: 11:44							Greenwich Culmination Time: 14:55							Greenwich Culmination Time: 03:06						

Mars					Jupiter					Saturn										
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT							
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "								
00	189 03.8 +00.9	S	09 39.0 +00.6		68 27.5 +02.4	S	15 06.8 -00.1		83 56.7 +02.4	S	19 18.1 +00.0		00							
01	204 04.7 +00.9	S	09 39.6 +00.6		83 29.9 +02.4	S	15 06.7 +00.0		98 59.1 +02.4	S	19 18.1 +00.0		01							
02	219 05.6 +00.9	S	09 40.2 +00.7		98 32.3 +02.5	S	15 06.7 +00.0		114 01.5 +02.4	S	19 18.1 +00.0		02							
03	234 06.5 +00.9	S	09 40.9 +00.6		113 34.8 +02.4	S	15 06.7 +00.0		129 03.9 +02.4	S	19 18.1 +00.0		03							
04	249 07.4 +00.9	S	09 41.5 +00.6		128 37.2 +02.4	S	15 06.7 +00.0		144 06.3 +02.4	S	19 18.1 +00.0		04							
05	264 08.3 +00.9	S	09 42.1 +00.6		143 39.6 +02.4	S	15 06.7 -00.1		159 08.7 +02.4	S	19 18.1 +00.0		05							
06	279 09.2 +00.9	S	09 42.7 +00.6		158 42.0 +02.4	S	15 06.6 +00.0		174 11.1 +02.4	S	19 18.1 -00.1		06							
07	294 10.1 +00.8	S	09 43.3 +00.7		173 44.4 +02.4	S	15 06.6 +00.0		189 13.5 +02.4	S	19 18.0 +00.0		07							
08	309 10.9 +00.9	S	09 44.0 +00.6		188 46.8 +02.4	S	15 06.6 +00.0		204 15.9 +02.4	S	19 18.0 +00.0		08							
09	324 11.8 +00.9	S	09 44.6 +00.6		203 49.2 +02.4	S	15 06.6 -00.1		219 18.3 +02.4	S	19 18.0 +00.0		09							
10	339 12.7 +00.9	S	09 45.2 +00.6		218 51.6 +02.4	S	15 06.5 +00.0		234 20.7 +02.4	S	19 18.0 +00.0		10							
11	354 13.6 +00.9	S	09 45.8 +00.6		233 54.0 +02.4	S	15 06.5 +00.0		249 23.1 +02.4	S	19 18.0 +00.0		11							
12	9 14.5 +00.9	S	09 46.4 +00.7		248 56.4 +02.4	S	15 06.5 +00.0		264 25.5 +02.4	S	19 18.0 -00.1		12							
13	24 15.4 +00.9	S	09 47.1 +00.6		263 58.8 +02.4	S	15 06.5 -00.1		279 27.9 +02.4	S	19 17.9 +00.0		13							
14	39 16.3 +00.9	S	09 47.7 +00.6		279 01.2 +02.4	S	15 06.4 +00.0		294 30.3 +02.4	S	19 17.9 +00.0		14							
15	54 17.2 +00.9	S	09 48.3 +00.6		294 03.6 +02.4	S	15 06.4 +00.0		309 32.7 +02.4	S	19 17.9 +00.0		15							
16	69 18.1 +00.9	S	09 48.9 +00.7		309 06.0 +02.5	S	15 06.4 -00.1		324 35.1 +02.4	S	19 17.9 +00.0		16							
17	84 19.0 +00.9	S	09 49.6 +00.6		324 08.5 +02.4	S	15 06.3 +00.0		339 37.5 +02.4	S	19 17.9 +00.0		17							
18	99 19.9 +00.9	S	09 50.2 +00.6		339 10.9 +02.4	S	15 06.3 +00.0		354 39.9 +02.4	S	19 17.9 -00.1		18							
19	114 20.8 +00.8	S	09 50.8 +00.6		354 13.3 +02.4	S	15 06.3 +00.0		9 42.3 +02.4	S	19 17.8 +00.0		19							
20	129 21.6 +00.9	S	09 51.4 +00.6		9 15.7 +02.4	S	15 06.3 -00.1		24 44.7 +02.4	S	19 17.8 +00.0		20							
21	144 22.5 +00.9	S	09 52.0 +00.7		24 18.1 +02.4	S	15 06.2 +00.0		39 47.1 +02.4	S	19 17.8 +00.0		21							
22	159 23.4 +00.9	S	09 52.7 +00.6		39 20.5 +02.4	S	15 06.2 +00.0		54 49.5 +02.4	S	19 17.8 +00.0		22							
23	174 24.3 +00.9	S	09 53.3 +00.6		54 22.9 +02.4	S	15 06.2 +00.0		69 51.9 +02.4	S	19 17.8 +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	00'4	00'4	00'4	00'4	00'4	00'4					
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	155°	155°	155°	155°	155°	155°			SHA	050°	050°	050°	050°	050°	050°					
Greenwich Culmination Time: 11:23							Greenwich Culmination Time: 19:23							Greenwich Culmination Time: 18:21						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184 00.3 +00.1	S	12 26.3 +00.8	136 07.2 -00.4	S	26 34.0 +00.3	302 56.8 -30.4	N	26 01.2 +01.9	00			
01	199 00.4 +00.0	S	12 27.1 +00.9	151 06.8 -00.4	S	26 34.3 +00.3	317 26.4 -30.4	N	26 03.1 +01.9	01			
02	214 00.4 +00.1	S	12 28.0 +00.9	166 06.4 -00.3	S	26 34.6 +00.3	331 56.0 -30.5	N	26 05.0 +01.7	02			
03	229 00.5 +00.1	S	12 28.9 +00.8	181 06.1 -00.4	S	26 34.9 +00.3	346 25.5 -30.5	N	26 06.7 +01.6	03			
04	244 00.6 +00.0	S	12 29.7 +00.9	196 05.7 -00.3	S	26 35.2 +00.3	0 55.0 -30.5	N	26 08.3 +01.4	04			
05	259 00.6 +00.1	S	12 30.6 +00.8	211 05.4 -00.4	S	26 35.5 +00.2	15 24.5 -30.5	N	26 09.7 +01.4	05			
06	274 00.7 +00.1	S	12 31.4 +00.9	226 05.0 -00.4	S	26 35.7 +00.3	29 54.0 -30.6	N	26 11.1 +01.2	06			
07	289 00.8 +00.0	S	12 32.3 +00.8	241 04.6 -00.3	S	26 36.0 +00.3	44 23.4 -30.5	N	26 12.3 +01.0	07			
08	304 00.8 +00.1	S	12 33.1 +00.9	256 04.3 -00.4	S	26 36.3 +00.3	58 52.9 -30.6	N	26 13.3 +01.0	08			
09	319 00.9 +00.1	S	12 34.0 +00.8	271 03.9 -00.4	S	26 36.6 +00.3	73 22.3 -30.7	N	26 14.3 +00.8	09			
10	334 01.0 +00.0	S	12 34.8 +00.9	286 03.5 -00.3	S	26 36.9 +00.3	87 51.6 -30.6	N	26 15.1 +00.8	10			
11	349 01.0 +00.1	S	12 35.7 +00.8	301 03.2 -00.4	S	26 37.2 +00.2	102 21.0 -30.6	N	26 15.9 +00.5	11			
12	4 01.1 +00.0	S	12 36.5 +00.9	316 02.8 -00.3	S	26 37.4 +00.3	116 50.4 -30.7	N	26 16.4 +00.5	12			
13	19 01.1 +00.1	S	12 37.4 +00.8	331 02.5 -00.4	S	26 37.7 +00.3	131 19.7 -30.7	N	26 16.9 +00.3	13			
14	34 01.2 +00.1	S	12 38.2 +00.9	346 02.1 -00.4	S	26 38.0 +00.3	145 49.0 -30.7	N	26 17.2 +00.2	14			
15	49 01.3 +00.0	S	12 39.1 +00.8	1 01.7 -00.3	S	26 38.3 +00.2	160 18.3 -30.7	N	26 17.4 +00.1	15			
16	64 01.3 +00.1	S	12 39.9 +00.9	16 01.4 -00.4	S	26 38.5 +00.3	174 47.6 -30.7	N	26 17.5 -00.1	16			
17	79 01.4 +00.0	S	12 40.8 +00.8	31 01.0 -00.3	S	26 38.8 +00.3	189 16.9 -30.7	N	26 17.4 -00.1	17			
18	94 01.4 +00.1	S	12 41.6 +00.8	46 00.7 -00.4	S	26 39.1 +00.3	203 46.2 -30.8	N	26 17.3 -00.3	18			
19	109 01.5 +00.1	S	12 42.4 +00.9	61 00.3 -00.3	S	26 39.4 +00.2	218 15.4 -30.7	N	26 17.0 -00.5	19			
20	124 01.6 +00.0	S	12 43.3 +00.8	75 60.0 -00.4	S	26 39.6 +00.3	232 44.7 -30.8	N	26 16.5 -00.5	20			
21	139 01.6 +00.1	S	12 44.1 +00.9	90 59.6 -00.4	S	26 39.9 +00.3	247 13.9 -30.8	N	26 16.0 -00.7	21			
22	154 01.7 +00.0	S	12 45.0 +00.8	105 59.2 -00.3	S	26 40.2 +00.2	261 43.1 -30.8	N	26 15.3 -00.8	22			
23	169 01.7 +00.1	S	12 45.8 +00.9	120 58.9 -00.4	S	26 40.4 +00.3	276 12.3 -30.8	N	26 14.5 -01.0	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 00'2 00'2 00'2 00'2 00'2 00'2			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 00'2 00'2 00'2 00'2 00'2 00'2			HP 54'2 54'2 54'3 54'3 54'3 54'4						
	SHA 149° 149° 149° 149° 149° 149°			SHA 101° 101° 101° 101° 101° 100°			SHA 267° 265° 263° 261° 258° 256°						
	Greenwich Culmination Time: 11:43			Greenwich Culmination Time: 14:55			Greenwich Culmination Time: 03:56						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	189 25.2 +00.9	S	09 53.9 +00.6	69 25.3 +02.4	S	15 06.2 -00.1	84 54.3 +02.4	S	19 17.8 +00.0	00			
01	204 26.1 +00.9	S	09 54.5 +00.6	84 27.7 +02.4	S	15 06.1 +00.0	99 56.7 +02.4	S	19 17.8 -00.1	01			
02	219 27.0 +00.9	S	09 55.1 +00.7	99 30.1 +02.4	S	15 06.1 +00.0	114 59.1 +02.4	S	19 17.7 +00.0	02			
03	234 27.9 +00.9	S	09 55.8 +00.6	114 32.5 +02.4	S	15 06.1 +00.0	130 01.5 +02.4	S	19 17.7 +00.0	03			
04	249 28.8 +00.8	S	09 56.4 +00.6	129 34.9 +02.4	S	15 06.1 -00.1	145 03.9 +02.4	S	19 17.7 +00.0	04			
05	264 29.6 +00.9	S	09 57.0 +00.6	144 37.3 +02.4	S	15 06.0 +00.0	160 06.3 +02.4	S	19 17.7 +00.0	05			
06	279 30.5 +00.9	S	09 57.6 +00.6	159 39.7 +02.4	S	15 06.0 +00.0	175 08.7 +02.4	S	19 17.7 +00.0	06			
07	294 31.4 +00.9	S	09 58.2 +00.7	174 42.1 +02.4	S	15 06.0 -00.1	190 11.1 +02.4	S	19 17.7 -00.1	07			
08	309 32.3 +00.9	S	09 58.9 +00.6	189 44.5 +02.4	S	15 05.9 +00.0	205 13.5 +02.4	S	19 17.6 +00.0	08			
09	324 33.2 +00.9	S	09 59.5 +00.6	204 46.9 +02.4	S	15 05.9 +00.0	220 15.9 +02.4	S	19 17.6 +00.0	09			
10	339 34.1 +00.9	S	10 00.1 +00.6	219 49.3 +02.4	S	15 05.9 +00.0	235 18.3 +02.4	S	19 17.6 +00.0	10			
11	354 35.0 +00.9	S	10 00.7 +00.6	234 51.7 +02.4	S	15 05.9 -00.1	250 20.7 +02.4	S	19 17.6 +00.0	11			
12	9 35.9 +00.9	S	10 01.3 +00.7	249 54.1 +02.4	S	15 05.8 +00.0	265 23.1 +02.4	S	19 17.6 +00.0	12			
13	24 36.8 +00.8	S	10 02.0 +00.6	264 56.5 +02.4	S	15 05.8 +00.0	280 25.5 +02.4	S	19 17.6 -00.1	13			
14	39 37.6 +00.9	S	10 02.6 +00.6	279 58.9 +02.4	S	15 05.8 +00.0	295 27.9 +02.4	S	19 17.5 +00.0	14			
15	54 38.5 +00.9	S	10 03.2 +00.6	295 01.3 +02.4	S	15 05.8 -00.1	310 30.3 +02.4	S	19 17.5 +00.0	15			
16	69 39.4 +00.9	S	10 03.8 +00.6	310 03.7 +02.4	S	15 05.7 +00.0	325 32.7 +02.4	S	19 17.5 +00.0	16			
17	84 40.3 +00.9	S	10 04.4 +00.7	325 06.1 +02.4	S	15 05.7 +00.0	340 35.1 +02.4	S	19 17.5 +00.0	17			
18	99 41.2 +00.9	S	10 05.1 +00.6	340 08.5 +02.4	S	15 05.7 -00.1	355 37.5 +02.4	S	19 17.5 +00.0	18			
19	114 42.1 +00.9	S	10 05.7 +00.6	355 10.9 +02.4	S	15 05.6 +00.0	10 39.9 +02.4	S	19 17.5 -00.1	19			
20	129 43.0 +00.8	S	10 06.3 +00.6	10 13.3 +02.4	S	15 05.6 +00.0	25 42.3 +02.4	S	19 17.4 +00.0	20			
21	144 43.8 +00.9	S	10 06.9 +00.6	25 15.7 +02.4	S	15 05.6 -00.1	40 44.7 +02.4	S	19 17.4 +00.0	21			
22	159 44.7 +00.9	S	10 07.5 +00.6	40 18.1 +02.3	S	15 05.5 +00.0	55 47.1 +02.4	S	19 17.4 +00.0	22			
23	174 45.6 +00.9	S	10 08.1 +00.7	55 20.4 +02.4	S	15 05.5 +00.0	70 49.5 +02.4	S	19 17.4 +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 00'4 00'4 00'4 00'4 00'4 00'4			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 155° 155° 155° 154° 154° 154°			SHA 035° 035° 035° 035° 035° 035°			SHA 050° 050° 050° 050° 050° 050°						
	Greenwich Culmination Time: 11:21			Greenwich Culmination Time: 19:19			Greenwich Culmination Time: 18:17						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184 01.8 +00.1	S 12 46.7 +00.8	135 58.5 -00.3	S 26 40.7 +00.3	290 41.5 -30.8	N 26 13.5 -01.1	00						
01	199 01.9 +00.0	S 12 47.5 +00.9	150 58.2 -00.4	S 26 41.0 +00.2	305 10.7 -30.8	N 26 12.4 -01.2	01						
02	214 01.9 +00.1	S 12 48.4 +00.8	165 57.8 -00.3	S 26 41.2 +00.3	319 39.9 -30.8	N 26 11.2 -01.3	02						
03	229 02.0 +00.0	S 12 49.2 +00.9	180 57.5 -00.4	S 26 41.5 +00.3	334 09.1 -30.8	N 26 09.9 -01.5	03						
04	244 02.0 +00.1	S 12 50.1 +00.8	195 57.1 -00.3	S 26 41.8 +00.2	348 38.3 -30.8	N 26 08.4 -01.5	04						
05	259 02.1 +00.0	S 12 50.9 +00.8	210 56.8 -00.4	S 26 42.0 +00.3	3 07.5 -30.8	N 26 06.9 -01.7	05						
06	274 02.1 +00.1	S 12 51.7 +00.9	225 56.4 -00.3	S 26 42.3 +00.3	17 36.7 -30.8	N 26 05.2 -01.9	06						
07	289 02.2 +00.1	S 12 52.6 +00.8	240 56.1 -00.4	S 26 42.6 +00.2	32 05.9 -30.8	N 26 03.3 -02.0	07						
08	304 02.3 +00.0	S 12 53.4 +00.9	255 55.7 -00.3	S 26 42.8 +00.3	46 35.1 -30.8	N 26 01.3 -02.1	08						
09	319 02.3 +00.1	S 12 54.3 +00.8	270 55.4 -00.4	S 26 43.1 +00.2	61 04.3 -30.9	N 25 59.2 -02.2	09						
10	334 02.4 +00.0	S 12 55.1 +00.9	285 55.0 -00.3	S 26 43.3 +00.3	75 33.4 -30.8	N 25 57.0 -02.3	10						
11	349 02.4 +00.1	S 12 56.0 +00.8	300 54.7 -00.4	S 26 43.6 +00.2	90 02.6 -30.8	N 25 54.7 -02.5	11						
12	4 02.5 +00.0	S 12 56.8 +00.8	315 54.3 -00.3	S 26 43.8 +00.3	104 31.8 -30.8	N 25 52.2 -02.6	12						
13	19 02.5 +00.1	S 12 57.6 +00.9	330 54.0 -00.4	S 26 44.1 +00.2	119 01.0 -30.8	N 25 49.6 -02.8	13						
14	34 02.6 +00.0	S 12 58.5 +00.8	345 53.6 -00.3	S 26 44.3 +00.3	133 30.2 -30.8	N 25 46.8 -02.8	14						
15	49 02.6 +00.1	S 12 59.3 +00.9	0 53.3 -00.4	S 26 44.6 +00.2	147 59.4 -30.8	N 25 44.0 -03.0	15						
16	64 02.7 +00.0	S 13 00.2 +00.8	15 52.9 -00.3	S 26 44.8 +00.3	162 28.6 -30.8	N 25 41.0 -03.1	16						
17	79 02.7 +00.1	S 13 01.0 +00.8	30 52.6 -00.4	S 26 45.1 +00.2	176 57.8 -30.8	N 25 37.9 -03.3	17						
18	94 02.8 +00.1	S 13 01.8 +00.9	45 52.2 -00.3	S 26 45.3 +00.3	191 27.0 -30.7	N 25 34.6 -03.4	18						
19	109 02.9 +00.0	S 13 02.7 +00.8	60 51.9 -00.4	S 26 45.6 +00.2	205 56.3 -30.8	N 25 31.2 -03.5	19						
20	124 02.9 +00.1	S 13 03.5 +00.9	75 51.5 -00.3	S 26 45.8 +00.3	220 25.5 -30.8	N 25 27.7 -03.6	20						
21	139 03.0 +00.0	S 13 04.4 +00.8	90 51.2 -00.4	S 26 46.1 +00.2	234 54.7 -30.7	N 25 24.1 -03.8	21						
22	154 03.0 +00.1	S 13 05.2 +00.8	105 50.8 -00.3	S 26 46.3 +00.3	249 24.0 -30.7	N 25 20.3 -03.8	22						
23	169 03.1 +00.0	S 13 06.0 +00.9	120 50.5 -00.3	S 26 46.6 +00.2	263 53.3 -30.7	N 25 16.5 -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°2 00°2 00°2 00°2 00°2 00°2		SD	14°8 14°9 14°9 14°9 14°9 14°9						
HP	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	54°5 54°5 54°6 54°7 54°7 54°8						
SHA	148° 148° 148° 148° 148° 148°		SHA	100° 100° 100° 100° 100° 099°		SHA	254° 252° 250° 247° 245° 243°						
Greenwich Culmination Time: 11:43			Greenwich Culmination Time: 14:56			Greenwich Culmination Time: 04:47							

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	189 46.5 +00.9	S 10 08.8 +00.6	70 22.8 +02.4	S 15 05.5 +00.0	85 51.9 +02.4	S 19 17.4 +00.0	00						
01	204 47.4 +00.9	S 10 09.4 +00.6	85 25.2 +02.4	S 15 05.5 -00.1	100 54.3 +02.4	S 19 17.4 -00.1	01						
02	219 48.3 +00.9	S 10 10.0 +00.6	100 27.6 +02.4	S 15 05.4 +00.0	115 56.7 +02.4	S 19 17.3 +00.0	02						
03	234 49.2 +00.8	S 10 10.6 +00.6	115 30.0 +02.4	S 15 05.4 +00.0	130 59.1 +02.4	S 19 17.3 +00.0	03						
04	249 50.0 +00.9	S 10 11.2 +00.7	130 32.4 +02.4	S 15 05.4 -00.1	146 01.5 +02.4	S 19 17.3 +00.0	04						
05	264 50.9 +00.9	S 10 11.9 +00.6	145 34.8 +02.4	S 15 05.3 +00.0	161 03.9 +02.3	S 19 17.3 +00.0	05						
06	279 51.8 +00.9	S 10 12.5 +00.6	160 37.2 +02.4	S 15 05.3 +00.0	176 06.2 +02.4	S 19 17.3 -00.1	06						
07	294 52.7 +00.9	S 10 13.1 +00.6	175 39.6 +02.4	S 15 05.3 +00.0	191 08.6 +02.4	S 19 17.2 +00.0	07						
08	309 53.6 +00.9	S 10 13.7 +00.6	190 42.0 +02.4	S 15 05.3 -00.1	206 11.0 +02.4	S 19 17.2 +00.0	08						
09	324 54.5 +00.9	S 10 14.3 +00.6	205 44.4 +02.4	S 15 05.2 +00.0	221 13.4 +02.4	S 19 17.2 +00.0	09						
10	339 55.4 +00.8	S 10 14.9 +00.7	220 46.8 +02.4	S 15 05.2 +00.0	236 15.8 +02.4	S 19 17.2 +00.0	10						
11	354 56.2 +00.9	S 10 15.6 +00.6	235 49.2 +02.4	S 15 05.2 -00.1	251 18.2 +02.4	S 19 17.2 +00.0	11						
12	9 57.1 +00.9	S 10 16.2 +00.6	250 51.6 +02.3	S 15 05.1 +00.0	266 20.6 +02.4	S 19 17.2 -00.1	12						
13	24 58.0 +00.9	S 10 16.8 +00.6	265 53.9 +02.4	S 15 05.1 +00.0	281 23.0 +02.4	S 19 17.1 +00.0	13						
14	39 58.9 +00.9	S 10 17.4 +00.6	280 56.3 +02.4	S 15 05.1 -00.1	296 25.4 +02.4	S 19 17.1 +00.0	14						
15	54 59.8 +00.9	S 10 18.0 +00.6	295 58.7 +02.4	S 15 05.0 +00.0	311 27.8 +02.4	S 19 17.1 +00.0	15						
16	70 00.7 +00.8	S 10 18.6 +00.7	311 01.1 +02.4	S 15 05.0 +00.0	326 30.2 +02.4	S 19 17.1 +00.0	16						
17	85 01.5 +00.9	S 10 19.3 +00.6	326 03.5 +02.4	S 15 05.0 -00.1	341 32.6 +02.4	S 19 17.1 +00.0	17						
18	100 02.4 +00.9	S 10 19.9 +00.6	341 05.9 +02.4	S 15 04.9 +00.0	356 35.0 +02.4	S 19 17.1 -00.1	18						
19	115 03.3 +00.9	S 10 20.5 +00.6	356 08.3 +02.4	S 15 04.9 +00.0	11 37.4 +02.4	S 19 17.0 +00.0	19						
20	130 04.2 +00.9	S 10 21.1 +00.6	11 10.7 +02.3	S 15 04.9 -00.1	26 39.8 +02.4	S 19 17.0 +00.0	20						
21	145 05.1 +00.9	S 10 21.7 +00.6	26 13.0 +02.4	S 15 04.8 +00.0	41 42.2 +02.3	S 19 17.0 +00.0	21						
22	160 06.0 +00.8	S 10 22.3 +00.7	41 15.4 +02.4	S 15 04.8 +00.0	56 44.5 +02.4	S 19 17.0 +00.0	22						
23	175 06.8 +00.9	S 10 23.0 +00.6	56 17.8 +02.4	S 15 04.8 +00.0	71 46.9 +02.4	S 19 17.0 -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°4 00°4 00°4 00°4 00°4 00°4		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	154° 154° 154° 154° 154° 154°		SHA	035° 035° 035° 035° 035° 035°		SHA	050° 050° 050° 050° 050° 050°						
Greenwich Culmination Time: 11:20			Greenwich Culmination Time: 19:15			Greenwich Culmination Time: 18:13							

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184	03.1 +00.1	S 13 06.9 +00.8		135	50.2 -00.4	S 26 46.8 +00.2		278	22.6 -30.8	N 25 12.4 -04.1		00
01	199	03.2 +00.0	S 13 07.7 +00.8		150	49.8 -00.3	S 26 47.0 +00.3		292	51.8 -30.7	N 25 08.3 -04.3		01
02	214	03.2 +00.1	S 13 08.5 +00.9		165	49.5 -00.4	S 26 47.3 +00.2		307	21.1 -30.6	N 25 04.0 -04.3		02
03	229	03.3 +00.0	S 13 09.4 +00.8		180	49.1 -00.3	S 26 47.5 +00.3		321	50.5 -30.7	N 24 59.7 -04.6		03
04	244	03.3 +00.1	S 13 10.2 +00.8		195	48.8 -00.4	S 26 47.8 +00.2		336	19.8 -30.7	N 24 55.1 -04.6		04
05	259	03.4 +00.0	S 13 11.0 +00.9		210	48.4 -00.3	S 26 48.0 +00.2		350	49.1 -30.6	N 24 50.5 -04.8		05
06	274	03.4 +00.1	S 13 11.9 +00.8		225	48.1 -00.3	S 26 48.2 +00.3		5	18.5 -30.6	N 24 45.7 -04.9		06
07	289	03.5 +00.0	S 13 12.7 +00.9		240	47.8 -00.4	S 26 48.5 +00.2		19	47.9 -30.6	N 24 40.8 -05.0		07
08	304	03.5 +00.1	S 13 13.6 +00.8		255	47.4 -00.3	S 26 48.7 +00.2		34	17.3 -30.6	N 24 35.8 -05.1		08
09	319	03.6 +00.0	S 13 14.4 +00.8		270	47.1 -00.4	S 26 48.9 +00.3		48	46.7 -30.6	N 24 30.7 -05.3		09
10	334	03.6 +00.0	S 13 15.2 +00.9		285	46.7 -00.3	S 26 49.2 +00.2		63	16.1 -30.6	N 24 25.4 -05.4		10
11	349	03.6 +00.1	S 13 16.1 +00.8		300	46.4 -00.3	S 26 49.4 +00.2		77	45.5 -30.5	N 24 20.0 -05.5		11
12	4	03.7 +00.0	S 13 16.9 +00.8		315	46.1 -00.4	S 26 49.6 +00.3		92	15.0 -30.5	N 24 14.5 -05.6		12
13	19	03.7 +00.1	S 13 17.7 +00.8		330	45.7 -00.3	S 26 49.9 +00.2		106	44.5 -30.5	N 24 08.9 -05.8		13
14	34	03.8 +00.0	S 13 18.5 +00.9		345	45.4 -00.3	S 26 50.1 +00.2		121	14.0 -30.5	N 24 03.1 -05.9		14
15	49	03.8 +00.1	S 13 19.4 +00.8		0	45.1 -00.4	S 26 50.3 +00.2		135	43.5 -30.5	N 23 57.2 -06.0		15
16	64	03.9 +00.0	S 13 20.2 +00.8		15	44.7 -00.3	S 26 50.5 +00.3		150	13.0 -30.4	N 23 51.2 -06.1		16
17	79	03.9 +00.1	S 13 21.0 +00.9		30	44.4 -00.4	S 26 50.8 +00.2		164	42.6 -30.4	N 23 45.1 -06.2		17
18	94	04.0 +00.0	S 13 21.9 +00.8		45	44.0 -00.3	S 26 51.0 +00.2		179	12.2 -30.4	N 23 38.9 -06.4		18
19	109	04.0 +00.1	S 13 22.7 +00.8		60	43.7 -00.3	S 26 51.2 +00.2		193	41.8 -30.4	N 23 32.5 -06.5		19
20	124	04.1 +00.0	S 13 23.5 +00.9		75	43.4 -00.4	S 26 51.4 +00.2		208	11.4 -30.3	N 23 26.0 -06.6		20
21	139	04.1 +00.0	S 13 24.4 +00.8		90	43.0 -00.3	S 26 51.6 +00.3		222	41.1 -30.4	N 23 19.4 -06.7		21
22	154	04.1 +00.1	S 13 25.2 +00.8		105	42.7 -00.3	S 26 51.9 +00.2		237	10.7 -30.3	N 23 12.7 -06.9		22
23	169	04.2 +00.0	S 13 26.0 +00.8		120	42.4 -00.4	S 26 52.1 +00.2		251	40.4 -30.3	N 23 05.8 -07.0		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°2 00°2 00°2 00°2 00°2 00°2				SD 15°0 15°0 15°0 15°0 15°1 15°1				
	HP 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 54°9 55°0 55°1 55°2 55°3 55°4				
	SHA 147° 147° 147° 147° 147° 147°				SHA 099° 099° 099° 099° 098° 098°				SHA 241° 239° 236° 234° 232° 230°				
	Greenwich Culmination Time: 11:43				Greenwich Culmination Time: 14:56				Greenwich Culmination Time: 05:38				

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	190	07.7 +00.9	S 10 23.6 +00.6		71	20.2 +02.4	S 15 04.8 -00.1		86	49.3 +02.4	S 19 16.9 +00.0		00
01	205	08.6 +00.9	S 10 24.2 +00.6		86	22.6 +02.4	S 15 04.7 +00.0		101	51.7 +02.4	S 19 16.9 +00.0		01
02	220	09.5 +00.9	S 10 24.8 +00.6		101	25.0 +02.4	S 15 04.7 +00.0		116	54.1 +02.4	S 19 16.9 +00.0		02
03	235	10.4 +00.8	S 10 25.4 +00.6		116	27.4 +02.4	S 15 04.7 -00.1		131	56.5 +02.4	S 19 16.9 +00.0		03
04	250	11.2 +00.9	S 10 26.0 +00.6		131	29.8 +02.3	S 15 04.6 +00.0		146	58.9 +02.4	S 19 16.9 +00.0		04
05	265	12.1 +00.9	S 10 26.6 +00.7		146	32.1 +02.4	S 15 04.6 +00.0		162	01.3 +02.4	S 19 16.9 -00.1		05
06	280	13.0 +00.9	S 10 27.3 +00.6		161	34.5 +02.4	S 15 04.6 -00.1		177	03.7 +02.4	S 19 16.8 +00.0		06
07	295	13.9 +00.9	S 10 27.9 +00.6		176	36.9 +02.4	S 15 04.5 +00.0		192	06.1 +02.4	S 19 16.8 +00.0		07
08	310	14.8 +00.8	S 10 28.5 +00.6		191	39.3 +02.4	S 15 04.5 +00.0		207	08.5 +02.4	S 19 16.8 +00.0		08
09	325	15.6 +00.9	S 10 29.1 +00.6		206	41.7 +02.4	S 15 04.5 -00.1		222	10.9 +02.3	S 19 16.8 +00.0		09
10	340	16.5 +00.9	S 10 29.7 +00.6		221	44.1 +02.3	S 15 04.4 +00.0		237	13.2 +02.4	S 19 16.8 -00.1		10
11	355	17.4 +00.9	S 10 30.3 +00.6		236	46.4 +02.4	S 15 04.4 +00.0		252	15.6 +02.4	S 19 16.7 +00.0		11
12	10	18.3 +00.9	S 10 30.9 +00.7		251	48.8 +02.4	S 15 04.4 -00.1		267	18.0 +02.4	S 19 16.7 +00.0		12
13	25	19.2 +00.8	S 10 31.6 +00.6		266	51.2 +02.4	S 15 04.3 +00.0		282	20.4 +02.4	S 19 16.7 +00.0		13
14	40	20.0 +00.9	S 10 32.2 +00.6		281	53.6 +02.4	S 15 04.3 +00.0		297	22.8 +02.4	S 19 16.7 +00.0		14
15	55	20.9 +00.9	S 10 32.8 +00.6		296	56.0 +02.3	S 15 04.3 -00.1		312	25.2 +02.4	S 19 16.7 -00.1		15
16	70	21.8 +00.9	S 10 33.4 +00.6		311	58.3 +02.4	S 15 04.2 +00.0		327	27.6 +02.4	S 19 16.6 +00.0		16
17	85	22.7 +00.9	S 10 34.0 +00.6		327	00.7 +02.4	S 15 04.2 +00.0		342	30.0 +02.4	S 19 16.6 +00.0		17
18	100	23.6 +00.8	S 10 34.6 +00.6		342	03.1 +02.4	S 15 04.2 -00.1		357	32.4 +02.3	S 19 16.6 +00.0		18
19	115	24.4 +00.9	S 10 35.2 +00.7		357	05.5 +02.4	S 15 04.1 +00.0		12	34.7 +02.4	S 19 16.6 +00.0		19
20	130	25.3 +00.9	S 10 35.9 +00.6		12	07.9 +02.4	S 15 04.1 +00.0		27	37.1 +02.4	S 19 16.6 +00.0		20
21	145	26.2 +00.9	S 10 36.5 +00.6		27	10.3 +02.3	S 15 04.1 -00.1		42	39.5 +02.4	S 19 16.6 -00.1		21
22	160	27.1 +00.9	S 10 37.1 +00.6		42	12.6 +02.4	S 15 04.0 +00.0		57	41.9 +02.4	S 19 16.5 +00.0		22
23	175	28.0 +00.8	S 10 37.7 +00.6		57	15.0 +02.4	S 15 04.0 -00.1		72	44.3 +02.4	S 19 16.5 +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°0 00°0 00°0 00°0 00°0 00°0				SD 00°4 00°4 00°4 00°4 00°4 00°4				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 154° 153° 153° 153° 153° 153°				SHA 035° 035° 035° 035° 035° 035°				SHA 050° 050° 050° 050° 050° 050°				
	Greenwich Culmination Time: 11:18				Greenwich Culmination Time: 19:11				Greenwich Culmination Time: 18:09				

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184 04.2 +00.1	S 13 26.8 +00.9	135 42.0 -00.3	S 26 52.3 +00.2	266 10.1 -30.2	N 22 58.8 -07.1	00						
01	199 04.3 +00.0	S 13 27.7 +00.8	150 41.7 -00.3	S 26 52.5 +00.2	280 39.9 -30.3	N 22 51.7 -07.2	01						
02	214 04.3 +00.1	S 13 28.5 +00.8	165 41.4 -00.3	S 26 52.7 +00.2	295 09.6 -30.2	N 22 44.5 -07.3	02						
03	229 04.4 +00.0	S 13 29.3 +00.9	180 41.1 -00.4	S 26 52.9 +00.2	309 39.4 -30.2	N 22 37.2 -07.4	03						
04	244 04.4 +00.0	S 13 30.2 +00.8	195 40.7 -00.3	S 26 53.1 +00.3	324 09.2 -30.1	N 22 29.8 -07.6	04						
05	259 04.4 +00.1	S 13 31.0 +00.8	210 40.4 -00.3	S 26 53.4 +00.2	338 39.1 -30.2	N 22 22.2 -07.7	05						
06	274 04.5 +00.0	S 13 31.8 +00.8	225 40.1 -00.4	S 26 53.6 +00.2	353 08.9 -30.1	N 22 14.5 -07.8	06						
07	289 04.5 +00.1	S 13 32.6 +00.9	240 39.7 -00.3	S 26 53.8 +00.2	7 38.8 -30.1	N 22 06.7 -07.9	07						
08	304 04.6 +00.0	S 13 33.5 +00.8	255 39.4 -00.3	S 26 54.0 +00.2	22 08.7 -30.0	N 21 58.8 -08.0	08						
09	319 04.6 +00.0	S 13 34.3 +00.8	270 39.1 -00.3	S 26 54.2 +00.2	36 38.7 -30.1	N 21 50.8 -08.2	09						
10	334 04.6 +00.1	S 13 35.1 +00.8	285 38.8 -00.4	S 26 54.4 +00.2	51 08.6 -30.0	N 21 42.6 -08.2	10						
11	349 04.7 +00.0	S 13 35.9 +00.9	300 38.4 -00.3	S 26 54.6 +00.2	65 38.6 -30.0	N 21 34.4 -08.4	11						
12	4 04.7 +00.0	S 13 36.8 +00.8	315 38.1 -00.3	S 26 54.8 +00.2	80 08.6 -29.9	N 21 26.0 -08.5	12						
13	19 04.7 +00.1	S 13 37.6 +00.8	330 37.8 -00.3	S 26 55.0 +00.2	94 38.7 -30.0	N 21 17.5 -08.6	13						
14	34 04.8 +00.0	S 13 38.4 +00.8	345 37.5 -00.4	S 26 55.2 +00.2	109 08.7 -29.9	N 21 08.9 -08.7	14						
15	49 04.8 +00.1	S 13 39.2 +00.9	0 37.1 -00.3	S 26 55.4 +00.2	123 38.8 -29.9	N 21 00.2 -08.8	15						
16	64 04.9 +00.0	S 13 40.1 +00.8	15 36.8 -00.3	S 26 55.6 +00.2	138 08.9 -29.8	N 20 51.4 -09.0	16						
17	79 04.9 +00.0	S 13 40.9 +00.8	30 36.5 -00.3	S 26 55.8 +00.2	152 39.1 -29.9	N 20 42.4 -09.0	17						
18	94 04.9 +00.1	S 13 41.7 +00.8	45 36.2 -00.4	S 26 56.0 +00.2	167 09.2 -29.8	N 20 33.4 -09.2	18						
19	109 05.0 +00.0	S 13 42.5 +00.8	60 35.8 -00.3	S 26 56.2 +00.2	181 39.4 -29.8	N 20 24.2 -09.2	19						
20	124 05.0 +00.0	S 13 43.3 +00.9	75 35.5 -00.3	S 26 56.4 +00.2	196 09.6 -29.7	N 20 15.0 -09.4	20						
21	139 05.0 +00.1	S 13 44.2 +00.8	90 35.2 -00.3	S 26 56.6 +00.2	210 39.9 -29.7	N 20 05.6 -09.5	21						
22	154 05.1 +00.0	S 13 45.0 +00.8	105 34.9 -00.3	S 26 56.8 +00.2	225 10.2 -29.7	N 19 56.1 -09.6	22						
23	169 05.1 +00.0	S 13 45.8 +00.8	120 34.6 -00.4	S 26 57.0 +00.2	239 40.5 -29.7	N 19 46.5 -09.7	23						
UT	02 06 10 14 18 22	SD 16'1 16'1 16'1 16'1 16'1 16'1	UT	02 06 10 14 18 22	SD 00'2 00'2 00'2 00'2 00'2 00'2	UT	02 06 10 14 18 22	SD 15'1 15'2 15'2 15'2 15'3 15'3					
	HP 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 55'5 55'6 55'8 55'9 56'0 56'1		HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 146° 146° 146° 146° 146° 146°		SHA 098° 098° 098° 098° 097° 097°		SHA 228° 225° 223° 221° 219° 217°		SHA 050° 050° 050° 050° 050° 050°						
	Greenwich Culmination Time: 11:43		Greenwich Culmination Time: 14:57		Greenwich Culmination Time: 06:28								
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	190 28.8 +00.9	S 10 38.3 +00.6	72 17.4 +02.4	S 15 03.9 +00.0	87 46.7 +02.4	S 19 16.5 +00.0	00						
01	205 29.7 +00.9	S 10 38.9 +00.6	87 19.8 +02.3	S 15 03.9 +00.0	102 49.1 +02.4	S 19 16.5 +00.0	01						
02	220 30.6 +00.9	S 10 39.5 +00.6	102 22.1 +02.4	S 15 03.9 -00.1	117 51.5 +02.3	S 19 16.5 -00.1	02						
03	235 31.5 +00.8	S 10 40.1 +00.7	117 24.5 +02.4	S 15 03.8 +00.0	132 53.8 +02.4	S 19 16.4 +00.0	03						
04	250 32.3 +00.9	S 10 40.8 +00.6	132 26.9 +02.4	S 15 03.8 +00.0	147 56.2 +02.4	S 19 16.4 +00.0	04						
05	265 33.2 +00.9	S 10 41.4 +00.6	147 29.3 +02.4	S 15 03.8 -00.1	162 58.6 +02.4	S 19 16.4 +00.0	05						
06	280 34.1 +00.9	S 10 42.0 +00.6	162 31.7 +02.3	S 15 03.7 +00.0	178 01.0 +02.4	S 19 16.4 +00.0	06						
07	295 35.0 +00.8	S 10 42.6 +00.6	177 34.0 +02.4	S 15 03.7 +00.0	193 03.4 +02.4	S 19 16.4 -00.1	07						
08	310 35.8 +00.9	S 10 43.2 +00.6	192 36.4 +02.4	S 15 03.7 -00.1	208 05.8 +02.4	S 19 16.3 +00.0	08						
09	325 36.7 +00.9	S 10 43.8 +00.6	207 38.8 +02.4	S 15 03.6 +00.0	223 08.2 +02.4	S 19 16.3 +00.0	09						
10	340 37.6 +00.9	S 10 44.4 +00.6	222 41.2 +02.3	S 15 03.6 +00.0	238 10.6 +02.3	S 19 16.3 +00.0	10						
11	355 38.5 +00.9	S 10 45.0 +00.7	237 43.5 +02.4	S 15 03.6 -00.1	253 12.9 +02.4	S 19 16.3 +00.0	11						
12	10 39.4 +00.8	S 10 45.7 +00.6	252 45.9 +02.4	S 15 03.5 +00.0	268 15.3 +02.4	S 19 16.3 -00.1	12						
13	25 40.2 +00.9	S 10 46.3 +00.6	267 48.3 +02.4	S 15 03.5 -00.1	283 17.7 +02.4	S 19 16.2 +00.0	13						
14	40 41.1 +00.9	S 10 46.9 +00.6	282 50.7 +02.3	S 15 03.4 +00.0	298 20.1 +02.4	S 19 16.2 +00.0	14						
15	55 42.0 +00.9	S 10 47.5 +00.6	297 53.0 +02.4	S 15 03.4 +00.0	313 22.5 +02.4	S 19 16.2 +00.0	15						
16	70 42.9 +00.8	S 10 48.1 +00.6	312 55.4 +02.4	S 15 03.4 -00.1	328 24.9 +02.4	S 19 16.2 +00.0	16						
17	85 43.7 +00.9	S 10 48.7 +00.6	327 57.8 +02.3	S 15 03.3 +00.0	343 27.3 +02.3	S 19 16.2 -00.1	17						
18	100 44.6 +00.9	S 10 49.3 +00.6	343 00.1 +02.4	S 15 03.3 +00.0	358 29.6 +02.4	S 19 16.1 +00.0	18						
19	115 45.5 +00.9	S 10 49.9 +00.6	358 02.5 +02.4	S 15 03.3 -00.1	13 32.0 +02.4	S 19 16.1 +00.0	19						
20	130 46.4 +00.8	S 10 50.5 +00.7	13 04.9 +02.4	S 15 03.2 +00.0	28 34.4 +02.4	S 19 16.1 +00.0	20						
21	145 47.2 +00.9	S 10 51.2 +00.6	28 07.3 +02.3	S 15 03.2 +00.0	43 36.8 +02.4	S 19 16.1 +00.0	21						
22	160 48.1 +00.9	S 10 51.8 +00.6	43 09.6 +02.4	S 15 03.2 -00.1	58 39.2 +02.4	S 19 16.1 -00.1	22						
23	175 49.0 +00.8	S 10 52.4 +00.6	58 12.0 +02.4	S 15 03.1 +00.0	73 41.6 +02.3	S 19 16.0 +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 00'4 00'4 00'4 00'4 00'4 00'4	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 153° 153° 153° 153° 152° 152°		SHA 035° 035° 035° 035° 035° 035°		SHA 050° 050° 050° 050° 050° 050°								
	Greenwich Culmination Time: 11:17		Greenwich Culmination Time: 19:07		Greenwich Culmination Time: 18:06								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184 05.1 +00.1	S 13 46.6 +00.8	135 34.2 -00.3	S 26 57.2 +00.2	254 10.8 -29.7	N 19 36.8 -09.8	00						
01	199 05.2 +00.0	S 13 47.4 +00.9	150 33.9 -00.3	S 26 57.4 +00.1	268 41.1 -29.6	N 19 27.0 -09.9	01						
02	214 05.2 +00.0	S 13 48.3 +00.8	165 33.6 -00.3	S 26 57.5 +00.2	283 11.5 -29.6	N 19 17.1 -10.1	02						
03	229 05.2 +00.1	S 13 49.1 +00.8	180 33.3 -00.3	S 26 57.7 +00.2	297 41.9 -29.6	N 19 07.0 -10.1	03						
04	244 05.3 +00.0	S 13 49.9 +00.8	195 33.0 -00.3	S 26 57.9 +00.2	312 12.3 -29.6	N 18 56.9 -10.2	04						
05	259 05.3 +00.0	S 13 50.7 +00.8	210 32.7 -00.4	S 26 58.1 +00.2	326 42.7 -29.5	N 18 46.7 -10.4	05						
06	274 05.3 +00.1	S 13 51.5 +00.9	225 32.3 -00.3	S 26 58.3 +00.2	341 13.2 -29.5	N 18 36.3 -10.4	06						
07	289 05.4 +00.0	S 13 52.4 +00.8	240 32.0 -00.3	S 26 58.5 +00.2	355 43.7 -29.5	N 18 25.9 -10.5	07						
08	304 05.4 +00.0	S 13 53.2 +00.8	255 31.7 -00.3	S 26 58.7 +00.1	10 14.2 -29.4	N 18 15.4 -10.7	08						
09	319 05.4 +00.1	S 13 54.0 +00.8	270 31.4 -00.3	S 26 58.8 +00.2	24 44.8 -29.5	N 18 04.7 -10.7	09						
10	334 05.5 +00.0	S 13 54.8 +00.8	285 31.1 -00.3	S 26 59.0 +00.2	39 15.3 -29.4	N 17 54.0 -10.9	10						
11	349 05.5 +00.0	S 13 55.6 +00.8	300 30.8 -00.3	S 26 59.2 +00.2	53 45.9 -29.4	N 17 43.1 -10.9	11						
12	4 05.5 +00.1	S 13 56.4 +00.8	315 30.5 -00.4	S 26 59.4 +00.2	68 16.5 -29.4	N 17 32.2 -11.1	12						
13	19 05.6 +00.0	S 13 57.2 +00.9	330 30.1 -00.3	S 26 59.6 +00.1	82 47.1 -29.3	N 17 21.1 -11.1	13						
14	34 05.6 +00.0	S 13 58.1 +00.8	345 29.8 -00.3	S 26 59.7 +00.2	97 17.8 -29.3	N 17 10.0 -11.3	14						
15	49 05.6 +00.0	S 13 58.9 +00.8	0 29.5 -00.3	S 26 59.9 +00.2	111 48.5 -29.4	N 16 58.7 -11.3	15						
16	64 05.6 +00.1	S 13 59.7 +00.8	15 29.2 -00.3	S 27 00.1 +00.1	126 19.1 -29.2	N 16 47.4 -11.4	16						
17	79 05.7 +00.0	S 14 00.5 +00.8	30 28.9 -00.3	S 27 00.2 +00.2	140 49.9 -29.3	N 16 36.0 -11.6	17						
18	94 05.7 +00.0	S 14 01.3 +00.8	45 28.6 -00.3	S 27 00.4 +00.2	155 20.6 -29.3	N 16 24.4 -11.6	18						
19	109 05.7 +00.1	S 14 02.1 +00.8	60 28.3 -00.3	S 27 00.6 +00.2	169 51.3 -29.2	N 16 12.8 -11.7	19						
20	124 05.8 +00.0	S 14 02.9 +00.8	75 28.0 -00.3	S 27 00.8 +00.1	184 22.1 -29.2	N 16 01.1 -11.8	20						
21	139 05.8 +00.0	S 14 03.7 +00.9	90 27.7 -00.3	S 27 00.9 +00.2	198 52.9 -29.2	N 15 49.3 -12.0	21						
22	154 05.8 +00.0	S 14 04.6 +00.8	105 27.4 -00.3	S 27 01.1 +00.2	213 23.7 -29.2	N 15 37.3 -12.0	22						
23	169 05.8 +00.1	S 14 05.4 +00.8	120 27.1 -00.3	S 27 01.3 +00.1	227 54.5 -29.1	N 15 25.3 -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 16'1 16'1 16'1 16'1 16'1 16'1		SD 00'2 00'2 00'2 00'2 00'2 00'2		SD 15'3 15'4 15'4 15'4 15'5 15'5								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'2 00'2 00'2 00'2 00'2 00'2		HP 56'3 56'4 56'6 56'7 56'8 57'0								
	SHA 145° 145° 145° 145° 145° 145°		SHA 097° 097° 097° 096° 096° 096°		SHA 215° 212° 210° 208° 206° 204°								
	Greenwich Culmination Time: 11:43		Greenwich Culmination Time: 14:58		Greenwich Culmination Time: 07:17								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	190 49.8 +00.9	S 10 53.0 +00.6	73 14.4 +02.3	S 15 03.1 -00.1	88 43.9 +02.4	S 19 16.0 +00.0	00						
01	205 50.7 +00.9	S 10 53.6 +00.6	88 16.7 +02.4	S 15 03.0 +00.0	103 46.3 +02.4	S 19 16.0 +00.0	01						
02	220 51.6 +00.9	S 10 54.2 +00.6	103 19.1 +02.4	S 15 03.0 +00.0	118 48.7 +02.4	S 19 16.0 +00.0	02						
03	235 52.5 +00.8	S 10 54.8 +00.6	118 21.5 +02.3	S 15 03.0 -00.1	133 51.1 +02.4	S 19 16.0 -00.1	03						
04	250 53.3 +00.9	S 10 55.4 +00.6	133 23.8 +02.4	S 15 02.9 +00.0	148 53.5 +02.4	S 19 15.9 +00.0	04						
05	265 54.2 +00.9	S 10 56.0 +00.6	148 26.2 +02.4	S 15 02.9 +00.0	163 55.9 +02.3	S 19 15.9 +00.0	05						
06	280 55.1 +00.9	S 10 56.6 +00.7	163 28.6 +02.4	S 15 02.9 -00.1	178 58.2 +02.4	S 19 15.9 +00.0	06						
07	295 56.0 +00.8	S 10 57.3 +00.6	178 31.0 +02.3	S 15 02.8 +00.0	194 00.6 +02.4	S 19 15.9 +00.0	07						
08	310 56.8 +00.9	S 10 57.9 +00.6	193 33.3 +02.4	S 15 02.8 -00.1	209 03.0 +02.4	S 19 15.9 -00.1	08						
09	325 57.7 +00.9	S 10 58.5 +00.6	208 35.7 +02.4	S 15 02.7 +00.0	224 05.4 +02.4	S 19 15.8 +00.0	09						
10	340 58.6 +00.8	S 10 59.1 +00.6	223 38.1 +02.3	S 15 02.7 +00.0	239 07.8 +02.4	S 19 15.8 +00.0	10						
11	355 59.4 +00.9	S 10 59.7 +00.6	238 40.4 +02.4	S 15 02.7 -00.1	254 10.2 +02.3	S 19 15.8 +00.0	11						
12	11 00.3 +00.9	S 11 00.3 +00.6	253 42.8 +02.4	S 15 02.6 +00.0	269 12.5 +02.4	S 19 15.8 +00.0	12						
13	26 01.2 +00.9	S 11 00.9 +00.6	268 45.2 +02.3	S 15 02.6 -00.1	284 14.9 +02.4	S 19 15.8 -00.1	13						
14	41 02.1 +00.8	S 11 01.5 +00.6	283 47.5 +02.4	S 15 02.5 +00.0	299 17.3 +02.4	S 19 15.7 +00.0	14						
15	56 02.9 +00.9	S 11 02.1 +00.6	298 49.9 +02.4	S 15 02.5 +00.0	314 19.7 +02.4	S 19 15.7 +00.0	15						
16	71 03.8 +00.9	S 11 02.7 +00.6	313 52.3 +02.3	S 15 02.5 -00.1	329 22.1 +02.3	S 19 15.7 +00.0	16						
17	86 04.7 +00.8	S 11 03.3 +00.6	328 54.6 +02.4	S 15 02.4 +00.0	344 24.4 +02.4	S 19 15.7 -00.1	17						
18	101 05.5 +00.9	S 11 03.9 +00.7	343 57.0 +02.3	S 15 02.4 -00.1	359 26.8 +02.4	S 19 15.6 +00.0	18						
19	116 06.4 +00.9	S 11 04.6 +00.6	358 59.3 +02.4	S 15 02.3 +00.0	14 29.2 +02.4	S 19 15.6 +00.0	19						
20	131 07.3 +00.9	S 11 05.2 +00.6	14 01.7 +02.4	S 15 02.3 +00.0	29 31.6 +02.4	S 19 15.6 +00.0	20						
21	146 08.2 +00.8	S 11 05.8 +00.6	29 04.1 +02.3	S 15 02.3 -00.1	44 34.0 +02.3	S 19 15.6 +00.0	21						
22	161 09.0 +00.9	S 11 06.4 +00.6	44 06.4 +02.4	S 15 02.2 +00.0	59 36.3 +02.4	S 19 15.6 -00.1	22						
23	176 09.9 +00.9	S 11 07.0 +00.6	59 08.8 +02.4	S 15 02.2 -00.1	74 38.7 +02.4	S 19 15.5 +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 00'0 00'0 00'0 00'0 00'0 00'0		SD 00'4 00'4 00'4 00'4 00'4 00'4		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 152° 152° 152° 152° 152° 152°		SHA 035° 035° 035° 035° 035° 035°		SHA 050° 050° 050° 050° 050° 050°								
	Greenwich Culmination Time: 11:16		Greenwich Culmination Time: 19:04		Greenwich Culmination Time: 18:02								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184 05.9 +00.0	S 14 06.2 +00.8	135 26.8 -00.3	S 27 01.4 +00.2	242 25.4 -29.2	N 15 13.2 -12.1	00						
01	199 05.9 +00.0	S 14 07.0 +00.8	150 26.5 -00.3	S 27 01.6 +00.2	256 56.2 -29.1	N 15 01.1 -12.3	01						
02	214 05.9 +00.0	S 14 07.8 +00.8	165 26.2 -00.3	S 27 01.8 +00.1	271 27.1 -29.1	N 14 48.8 -12.4	02						
03	229 05.9 +00.1	S 14 08.6 +00.8	180 25.9 -00.3	S 27 01.9 +00.2	285 58.0 -29.1	N 14 36.4 -12.4	03						
04	244 06.0 +00.0	S 14 09.4 +00.8	195 25.6 -00.3	S 27 02.1 +00.1	300 28.9 -29.1	N 14 24.0 -12.6	04						
05	259 06.0 +00.0	S 14 10.2 +00.8	210 25.3 -00.4	S 27 02.2 +00.2	314 59.8 -29.0	N 14 11.4 -12.6	05						
06	274 06.0 +00.0	S 14 11.0 +00.8	225 24.9 -00.3	S 27 02.4 +00.2	329 30.8 -29.1	N 13 58.8 -12.7	06						
07	289 06.0 +00.1	S 14 11.8 +00.9	240 24.6 -00.3	S 27 02.6 +00.1	344 01.7 -29.0	N 13 46.1 -12.8	07						
08	304 06.1 +00.0	S 14 12.7 +00.8	255 24.3 -00.2	S 27 02.7 +00.2	358 32.7 -29.0	N 13 33.3 -12.9	08						
09	319 06.1 +00.0	S 14 13.5 +00.8	270 24.1 -00.3	S 27 02.9 +00.1	13 03.7 -29.1	N 13 20.4 -12.9	09						
10	334 06.1 +00.0	S 14 14.3 +00.8	285 23.8 -00.3	S 27 03.0 +00.2	27 34.6 -29.0	N 13 07.5 -13.1	10						
11	349 06.1 +00.0	S 14 15.1 +00.8	300 23.5 -00.3	S 27 03.2 +00.1	42 05.6 -29.0	N 12 54.4 -13.1	11						
12	4 06.1 +00.1	S 14 15.9 +00.8	315 23.2 -00.3	S 27 03.3 +00.2	56 36.6 -29.0	N 12 41.3 -13.2	12						
13	19 06.2 +00.0	S 14 16.7 +00.8	330 22.9 -00.3	S 27 03.5 +00.1	71 07.6 -28.9	N 12 28.1 -13.3	13						
14	34 06.2 +00.0	S 14 17.5 +00.8	345 22.6 -00.3	S 27 03.6 +00.2	85 38.7 -29.0	N 12 14.8 -13.4	14						
15	49 06.2 +00.0	S 14 18.3 +00.8	0 22.3 -00.3	S 27 03.8 +00.1	100 09.7 -29.0	N 12 01.4 -13.4	15						
16	64 06.2 +00.1	S 14 19.1 +00.8	15 22.0 -00.3	S 27 03.9 +00.2	114 40.7 -28.9	N 11 48.0 -13.6	16						
17	79 06.3 +00.0	S 14 19.9 +00.8	30 21.7 -00.3	S 27 04.1 +00.1	129 11.8 -29.0	N 11 34.4 -13.6	17						
18	94 06.3 +00.0	S 14 20.7 +00.8	45 21.4 -00.3	S 27 04.2 +00.2	143 42.8 -28.9	N 11 20.8 -13.6	18						
19	109 06.3 +00.0	S 14 21.5 +00.8	60 21.1 -00.3	S 27 04.4 +00.1	158 13.9 -29.0	N 11 07.2 -13.8	19						
20	124 06.3 +00.0	S 14 22.3 +00.8	75 20.8 -00.3	S 27 04.5 +00.2	172 44.9 -28.9	N 10 53.4 -13.8	20						
21	139 06.3 +00.0	S 14 23.1 +00.8	90 20.5 -00.3	S 27 04.7 +00.1	187 16.0 -28.9	N 10 39.6 -13.9	21						
22	154 06.3 +00.1	S 14 23.9 +00.8	105 20.2 -00.3	S 27 04.8 +00.1	201 47.1 -29.0	N 10 25.7 -14.0	22						
23	169 06.4 +00.0	S 14 24.7 +00.8	120 19.9 -00.3	S 27 04.9 +00.2	216 18.1 -28.9	N 10 11.7 -14.0	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	00'2 00'2 00'2 00'2 00'2 00'2		SD	15'6 15'6 15'7 15'7 15'7 15'8						
HP	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	57'1 57'3 57'5 57'6 57'8 57'9						
SHA	145° 144° 144° 144° 144° 144°		SHA	096° 096° 095° 095° 095° 095°		SHA	202° 200° 198° 196° 193° 191°						
Greenwich Culmination Time: 11:43			Greenwich Culmination Time: 14:58			Greenwich Culmination Time: 08:06							

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	191 10.8 +00.8	S 11 07.6 +00.6	74 11.2 +02.3	S 15 02.1 +00.0	89 41.1 +02.4	S 19 15.5 +00.0	00						
01	206 11.6 +00.9	S 11 08.2 +00.6	89 13.5 +02.4	S 15 02.1 +00.0	104 43.5 +02.4	S 19 15.5 +00.0	01						
02	221 12.5 +00.9	S 11 08.8 +00.6	104 15.9 +02.3	S 15 02.1 -00.1	119 45.9 +02.3	S 19 15.5 +00.0	02						
03	236 13.4 +00.8	S 11 09.4 +00.6	119 18.2 +02.4	S 15 02.0 +00.0	134 48.2 +02.4	S 19 15.5 -00.1	03						
04	251 14.2 +00.9	S 11 10.0 +00.6	134 20.6 +02.4	S 15 02.0 -00.1	149 50.6 +02.4	S 19 15.4 +00.0	04						
05	266 15.1 +00.9	S 11 10.6 +00.6	149 23.0 +02.3	S 15 01.9 +00.0	164 53.0 +02.4	S 19 15.4 +00.0	05						
06	281 16.0 +00.8	S 11 11.2 +00.6	164 25.3 +02.4	S 15 01.9 +00.0	179 55.4 +02.3	S 19 15.4 +00.0	06						
07	296 16.8 +00.9	S 11 11.8 +00.6	179 27.7 +02.3	S 15 01.9 -00.1	194 57.7 +02.4	S 19 15.4 -00.1	07						
08	311 17.7 +00.9	S 11 12.4 +00.7	194 30.0 +02.4	S 15 01.8 +00.0	210 00.1 +02.4	S 19 15.3 +00.0	08						
09	326 18.6 +00.8	S 11 13.1 +00.6	209 32.4 +02.4	S 15 01.8 -00.1	225 02.5 +02.4	S 19 15.3 +00.0	09						
10	341 19.4 +00.9	S 11 13.7 +00.6	224 34.8 +02.3	S 15 01.7 +00.0	240 04.9 +02.4	S 19 15.3 +00.0	10						
11	356 20.3 +00.9	S 11 14.3 +00.6	239 37.1 +02.4	S 15 01.7 +00.0	255 07.3 +02.3	S 19 15.3 +00.0	11						
12	11 21.2 +00.9	S 11 14.9 +00.6	254 39.5 +02.3	S 15 01.7 -00.1	270 09.6 +02.4	S 19 15.3 -00.1	12						
13	26 22.1 +00.8	S 11 15.5 +00.6	269 41.8 +02.4	S 15 01.6 +00.0	285 12.0 +02.4	S 19 15.2 +00.0	13						
14	41 22.9 +00.9	S 11 16.1 +00.6	284 44.2 +02.4	S 15 01.6 -00.1	300 14.4 +02.4	S 19 15.2 +00.0	14						
15	56 23.8 +00.9	S 11 16.7 +00.6	299 46.6 +02.3	S 15 01.5 +00.0	315 16.8 +02.3	S 19 15.2 +00.0	15						
16	71 24.7 +00.8	S 11 17.3 +00.6	314 48.9 +02.4	S 15 01.5 -00.1	330 19.1 +02.4	S 19 15.2 +00.0	16						
17	86 25.5 +00.9	S 11 17.9 +00.6	329 51.3 +02.3	S 15 01.4 +00.0	345 21.5 +02.4	S 19 15.2 -00.1	17						
18	101 26.4 +00.9	S 11 18.5 +00.6	344 53.6 +02.4	S 15 01.4 +00.0	0 23.9 +02.4	S 19 15.1 +00.0	18						
19	116 27.3 +00.8	S 11 19.1 +00.6	359 56.0 +02.3	S 15 01.4 -00.1	15 26.3 +02.3	S 19 15.1 +00.0	19						
20	131 28.1 +00.9	S 11 19.7 +00.6	14 58.3 +02.4	S 15 01.3 +00.0	30 28.6 +02.4	S 19 15.1 +00.0	20						
21	146 29.0 +00.8	S 11 20.3 +00.6	30 00.7 +02.4	S 15 01.3 -00.1	45 31.0 +02.4	S 19 15.1 -00.1	21						
22	161 29.8 +00.9	S 11 20.9 +00.6	45 03.1 +02.3	S 15 01.2 +00.0	60 33.4 +02.4	S 19 15.0 +00.0	22						
23	176 30.7 +00.9	S 11 21.5 +00.6	60 05.4 +02.4	S 15 01.2 -00.1	75 35.8 +02.4	S 19 15.0 +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	00'4 00'4 00'4 00'4 00'4 00'4		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	152° 152° 151° 151° 151° 151°		SHA	035° 035° 035° 035° 035° 035°		SHA	050° 050° 050° 050° 050° 050°						
Greenwich Culmination Time: 11:14			Greenwich Culmination Time: 19:00			Greenwich Culmination Time: 17:58							

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184 06.4 +00.0	S 14 25.5 +00.8	135 19.6 -00.2	S 27 05.1 +00.1	230 49.2 -29.0	N 09 57.7 -14.1	00						
01	199 06.4 +00.0	S 14 26.3 +00.8	150 19.4 -00.3	S 27 05.2 +00.2	245 20.2 -28.9	N 09 43.6 -14.2	01						
02	214 06.4 +00.0	S 14 27.1 +00.8	165 19.1 -00.3	S 27 05.4 +00.1	259 51.3 -28.9	N 09 29.4 -14.2	02						
03	229 06.4 +00.1	S 14 27.9 +00.8	180 18.8 -00.3	S 27 05.5 +00.1	274 22.4 -29.0	N 09 15.2 -14.3	03						
04	244 06.5 +00.0	S 14 28.7 +00.8	195 18.5 -00.3	S 27 05.6 +00.2	288 53.4 -28.9	N 09 00.9 -14.4	04						
05	259 06.5 +00.0	S 14 29.5 +00.8	210 18.2 -00.3	S 27 05.8 +00.1	303 24.5 -29.0	N 08 46.5 -14.4	05						
06	274 06.5 +00.0	S 14 30.3 +00.8	225 17.9 -00.3	S 27 05.9 +00.1	317 55.5 -28.9	N 08 32.1 -14.5	06						
07	289 06.5 +00.0	S 14 31.1 +00.8	240 17.6 -00.2	S 27 06.0 +00.2	332 26.6 -29.0	N 08 17.6 -14.6	07						
08	304 06.5 +00.0	S 14 31.9 +00.8	255 17.4 -00.3	S 27 06.2 +00.1	346 57.6 -29.0	N 08 03.0 -14.6	08						
09	319 06.5 +00.0	S 14 32.7 +00.8	270 17.1 -00.3	S 27 06.3 +00.1	1 28.6 -28.9	N 07 48.4 -14.7	09						
10	334 06.5 +00.1	S 14 33.5 +00.8	285 16.8 -00.3	S 27 06.4 +00.2	15 59.7 -29.0	N 07 33.7 -14.7	10						
11	349 06.6 +00.0	S 14 34.3 +00.8	300 16.5 -00.3	S 27 06.6 +00.1	30 30.7 -29.0	N 07 19.0 -14.8	11						
12	4 06.6 +00.0	S 14 35.1 +00.8	315 16.2 -00.3	S 27 06.7 +00.1	45 01.7 -29.0	N 07 04.2 -14.9	12						
13	19 06.6 +00.0	S 14 35.9 +00.8	330 15.9 -00.2	S 27 06.8 +00.1	59 32.7 -29.1	N 06 49.3 -14.9	13						
14	34 06.6 +00.0	S 14 36.7 +00.8	345 15.7 -00.3	S 27 06.9 +00.2	74 03.6 -29.0	N 06 34.4 -15.0	14						
15	49 06.6 +00.0	S 14 37.5 +00.8	0 15.4 -00.3	S 27 07.1 +00.1	88 34.6 -29.0	N 06 19.4 -15.0	15						
16	64 06.6 +00.0	S 14 38.3 +00.8	15 15.1 -00.3	S 27 07.2 +00.1	103 05.6 -29.1	N 06 04.4 -15.0	16						
17	79 06.6 +00.0	S 14 39.1 +00.8	30 14.8 -00.2	S 27 07.3 +00.1	117 36.5 -29.1	N 05 49.4 -15.2	17						
18	94 06.6 +00.1	S 14 39.9 +00.8	45 14.6 -00.3	S 27 07.4 +00.2	132 07.4 -29.1	N 05 34.2 -15.1	18						
19	109 06.7 +00.0	S 14 40.7 +00.8	60 14.3 -00.3	S 27 07.6 +00.1	146 38.3 -29.1	N 05 19.1 -15.2	19						
20	124 06.7 +00.0	S 14 41.5 +00.7	75 14.0 -00.3	S 27 07.7 +00.1	161 09.2 -29.1	N 05 03.9 -15.3	20						
21	139 06.7 +00.0	S 14 42.2 +00.8	90 13.7 -00.2	S 27 07.8 +00.1	175 40.1 -29.2	N 04 48.6 -15.3	21						
22	154 06.7 +00.0	S 14 43.0 +00.8	105 13.5 -00.3	S 27 07.9 +00.1	190 10.9 -29.2	N 04 33.3 -15.4	22						
23	169 06.7 +00.0	S 14 43.8 +00.8	120 13.2 -00.3	S 27 08.0 +00.1	204 41.7 -29.2	N 04 17.9 -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 00'2 00'2 00'2 00'2 00'2 00'2		SD 15'8 15'9 15'9 16'0 16'0 16'0								
	HP 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 58'1 58'2 58'4 58'6 58'7 58'9								
	SHA 144° 143° 143° 143° 143° 143°		SHA 095° 095° 094° 094° 094° 094°		SHA 189° 187° 185° 183° 181° 179°								
	Greenwich Culmination Time: 11:43		Greenwich Culmination Time: 14:58		Greenwich Culmination Time: 08:53								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	191 31.6 +00.8	S 11 22.1 +00.6	75 07.8 +02.3	S 15 01.1 +00.0	90 38.2 +02.3	S 19 15.0 +00.0	00						
01	206 32.4 +00.9	S 11 22.7 +00.6	90 10.1 +02.4	S 15 01.1 +00.0	105 40.5 +02.4	S 19 15.0 -00.1	01						
02	221 33.3 +00.9	S 11 23.3 +00.6	105 12.5 +02.3	S 15 01.1 -00.1	120 42.9 +02.4	S 19 14.9 +00.0	02						
03	236 34.2 +00.8	S 11 23.9 +00.7	120 14.8 +02.4	S 15 01.0 +00.0	135 45.3 +02.3	S 19 14.9 +00.0	03						
04	251 35.0 +00.9	S 11 24.6 +00.6	135 17.2 +02.3	S 15 01.0 -00.1	150 47.6 +02.4	S 19 14.9 +00.0	04						
05	266 35.9 +00.9	S 11 25.2 +00.6	150 19.5 +02.4	S 15 00.9 +00.0	165 50.0 +02.4	S 19 14.9 +00.0	05						
06	281 36.8 +00.8	S 11 25.8 +00.6	165 21.9 +02.3	S 15 00.9 -00.1	180 52.4 +02.4	S 19 14.9 -00.1	06						
07	296 37.6 +00.9	S 11 26.4 +00.6	180 24.2 +02.4	S 15 00.8 +00.0	195 54.8 +02.3	S 19 14.8 +00.0	07						
08	311 38.5 +00.9	S 11 27.0 +00.6	195 26.6 +02.3	S 15 00.8 +00.0	210 57.1 +02.4	S 19 14.8 +00.0	08						
09	326 39.4 +00.8	S 11 27.6 +00.6	210 28.9 +02.4	S 15 00.8 -00.1	225 59.5 +02.4	S 19 14.8 +00.0	09						
10	341 40.2 +00.9	S 11 28.2 +00.6	225 31.3 +02.3	S 15 00.7 +00.0	241 01.9 +02.4	S 19 14.8 -00.1	10						
11	356 41.1 +00.9	S 11 28.8 +00.6	240 33.6 +02.4	S 15 00.7 -00.1	256 04.3 +02.3	S 19 14.7 +00.0	11						
12	11 42.0 +00.8	S 11 29.4 +00.6	255 36.0 +02.3	S 15 00.6 +00.0	271 06.6 +02.4	S 19 14.7 +00.0	12						
13	26 42.8 +00.9	S 11 30.0 +00.6	270 38.3 +02.4	S 15 00.6 -00.1	286 09.0 +02.4	S 19 14.7 +00.0	13						
14	41 43.7 +00.8	S 11 30.6 +00.6	285 40.7 +02.3	S 15 00.5 +00.0	301 11.4 +02.4	S 19 14.7 +00.0	14						
15	56 44.5 +00.9	S 11 31.2 +00.6	300 43.0 +02.4	S 15 00.5 -00.1	316 13.8 +02.3	S 19 14.7 -00.1	15						
16	71 45.4 +00.9	S 11 31.8 +00.6	315 45.4 +02.3	S 15 00.4 +00.0	331 16.1 +02.4	S 19 14.6 +00.0	16						
17	86 46.3 +00.8	S 11 32.4 +00.6	330 47.7 +02.4	S 15 00.4 +00.0	346 18.5 +02.4	S 19 14.6 +00.0	17						
18	101 47.1 +00.9	S 11 33.0 +00.6	345 50.1 +02.3	S 15 00.4 -00.1	1 20.9 +02.3	S 19 14.6 +00.0	18						
19	116 48.0 +00.8	S 11 33.6 +00.6	0 52.4 +02.4	S 15 00.3 +00.0	16 23.2 +02.4	S 19 14.6 -00.1	19						
20	131 48.8 +00.9	S 11 34.2 +00.6	15 54.8 +02.3	S 15 00.3 -00.1	31 25.6 +02.4	S 19 14.5 +00.0	20						
21	146 49.7 +00.9	S 11 34.8 +00.6	30 57.1 +02.4	S 15 00.2 +00.0	46 28.0 +02.4	S 19 14.5 +00.0	21						
22	161 50.6 +00.8	S 11 35.4 +00.6	45 59.5 +02.3	S 15 00.2 -00.1	61 30.4 +02.3	S 19 14.5 +00.0	22						
23	176 51.4 +00.9	S 11 36.0 +00.6	61 01.8 +02.4	S 15 00.1 +00.0	76 32.7 +02.4	S 19 14.5 -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 00'0 00'0 00'0 00'0 00'0 00'0		SD 00'4 00'4 00'4 00'4 00'4 00'4		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 151° 151° 151° 151° 151° 150°		SHA 035° 035° 035° 035° 035° 035°		SHA 050° 050° 050° 050° 050° 050°								
	Greenwich Culmination Time: 11:13		Greenwich Culmination Time: 18:56		Greenwich Culmination Time: 17:54								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184 06.7 +00.0	S 14 44.6 +00.8	135 12.9 -00.3	S 27 08.1 +00.2	219 12.5 -29.2	N 04 02.5 -15.4	00						
01	199 06.7 +00.0	S 14 45.4 +00.8	150 12.6 -00.2	S 27 08.3 +00.1	233 43.3 -29.2	N 03 47.1 -15.5	01						
02	214 06.7 +00.0	S 14 46.2 +00.8	165 12.4 -00.3	S 27 08.4 +00.1	248 14.1 -29.3	N 03 31.6 -15.5	02						
03	229 06.7 +00.0	S 14 47.0 +00.8	180 12.1 -00.3	S 27 08.5 +00.1	262 44.8 -29.3	N 03 16.1 -15.6	03						
04	244 06.7 +00.0	S 14 47.8 +00.8	195 11.8 -00.2	S 27 08.6 +00.1	277 15.5 -29.3	N 03 00.5 -15.6	04						
05	259 06.7 +00.0	S 14 48.6 +00.8	210 11.6 -00.3	S 27 08.7 +00.1	291 46.2 -29.4	N 02 44.9 -15.6	05						
06	274 06.7 +00.1	S 14 49.4 +00.7	225 11.3 -00.3	S 27 08.8 +00.1	306 16.8 -29.4	N 02 29.3 -15.6	06						
07	289 06.8 +00.0	S 14 50.1 +00.8	240 11.0 -00.2	S 27 08.9 +00.1	320 47.4 -29.4	N 02 13.7 -15.7	07						
08	304 06.8 +00.0	S 14 50.9 +00.8	255 10.8 -00.3	S 27 09.0 +00.1	335 18.0 -29.4	N 01 58.0 -15.8	08						
09	319 06.8 +00.0	S 14 51.7 +00.8	270 10.5 -00.3	S 27 09.1 +00.1	349 48.6 -29.5	N 01 42.2 -15.7	09						
10	334 06.8 +00.0	S 14 52.5 +00.8	285 10.2 -00.2	S 27 09.2 +00.1	4 19.1 -29.5	N 01 26.5 -15.8	10						
11	349 06.8 +00.0	S 14 53.3 +00.8	300 10.0 -00.3	S 27 09.3 +00.1	18 49.6 -29.6	N 01 10.7 -15.8	11						
12	4 06.8 +00.0	S 14 54.1 +00.8	315 09.7 -00.3	S 27 09.4 +00.1	33 20.0 -29.6	N 00 54.9 -15.8	12						
13	19 06.8 +00.0	S 14 54.9 +00.8	330 09.4 -00.2	S 27 09.5 +00.1	47 50.4 -29.6	N 00 39.1 -15.9	13						
14	34 06.8 +00.0	S 14 55.7 +00.7	345 09.2 -00.3	S 27 09.6 +00.1	62 20.8 -29.6	N 00 23.2 -15.9	14						
15	49 06.8 +00.0	S 14 56.4 +00.8	0 08.9 -00.2	S 27 09.7 +00.1	76 51.2 -29.7	N 00 07.3 -15.9	15						
16	64 06.8 +00.0	S 14 57.2 +00.8	15 08.7 -00.3	S 27 09.8 +00.1	91 21.5 -29.8	S 00 08.6 +15.9	16						
17	79 06.8 +00.0	S 14 58.0 +00.8	30 08.4 -00.3	S 27 09.9 +00.1	105 51.7 -29.8	S 00 24.5 +15.9	17						
18	94 06.8 +00.0	S 14 58.8 +00.8	45 08.1 -00.2	S 27 10.0 +00.1	120 21.9 -29.8	S 00 40.4 +16.0	18						
19	109 06.8 +00.0	S 14 59.6 +00.8	60 07.9 -00.3	S 27 10.1 +00.1	134 52.1 -29.9	S 00 56.4 +16.0	19						
20	124 06.8 +00.0	S 15 00.4 +00.7	75 07.6 -00.2	S 27 10.2 +00.1	149 22.2 -29.9	S 01 12.4 +15.9	20						
21	139 06.8 +00.0	S 15 01.1 +00.8	90 07.4 -00.3	S 27 10.3 +00.1	163 52.3 -29.9	S 01 28.3 +16.0	21						
22	154 06.8 +00.0	S 15 01.9 +00.8	105 07.1 -00.3	S 27 10.4 +00.1	178 22.4 -30.1	S 01 44.3 +16.0	22						
23	169 06.8 +00.0	S 15 02.7 +00.8	120 06.8 -00.2	S 27 10.5 +00.1	192 52.3 -30.0	S 02 00.3 +16.1	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 00'2 00'2 00'2 00'2 00'2 00'2		SD 16'1 16'1 16'2 16'2 16'2 16'3								
	HP 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 59'0 59'2 59'3 59'5 59'6 59'7								
	SHA 143° 142° 142° 142° 142° 142°		SHA 094° 093° 093° 093° 093° 093°		SHA 177° 175° 172° 170° 168° 166°								
	Greenwich Culmination Time: 11:43		Greenwich Culmination Time: 14:59		Greenwich Culmination Time: 09:42								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	191 52.3 +00.9	S 11 36.6 +00.6	76 04.2 +02.3	S 15 00.1 -00.1	91 35.1 +02.4	S 19 14.4 +00.0	00						
01	206 53.2 +00.8	S 11 37.2 +00.6	91 06.5 +02.4	S 15 00.0 +00.0	106 37.5 +02.3	S 19 14.4 +00.0	01						
02	221 54.0 +00.9	S 11 37.8 +00.6	106 08.9 +02.3	S 14 60.0 -00.1	121 39.8 +02.4	S 19 14.4 +00.0	02						
03	236 54.9 +00.8	S 11 38.4 +00.6	121 11.2 +02.4	S 14 59.9 +00.0	136 42.2 +02.4	S 19 14.4 -00.1	03						
04	251 55.7 +00.9	S 11 39.0 +00.6	136 13.6 +02.3	S 14 59.9 +00.0	151 44.6 +02.4	S 19 14.3 +00.0	04						
05	266 56.6 +00.9	S 11 39.6 +00.6	151 15.9 +02.3	S 14 59.9 -00.1	166 47.0 +02.3	S 19 14.3 +00.0	05						
06	281 57.5 +00.8	S 11 40.2 +00.6	166 18.2 +02.4	S 14 59.8 +00.0	181 49.3 +02.4	S 19 14.3 +00.0	06						
07	296 58.3 +00.9	S 11 40.8 +00.6	181 20.6 +02.3	S 14 59.8 -00.1	196 51.7 +02.4	S 19 14.3 +00.0	07						
08	311 59.2 +00.8	S 11 41.4 +00.6	196 22.9 +02.4	S 14 59.7 +00.0	211 54.1 +02.3	S 19 14.3 -00.1	08						
09	327 00.0 +00.9	S 11 42.0 +00.6	211 25.3 +02.3	S 14 59.7 -00.1	226 56.4 +02.4	S 19 14.2 +00.0	09						
10	342 00.9 +00.9	S 11 42.6 +00.6	226 27.6 +02.4	S 14 59.6 +00.0	241 58.8 +02.4	S 19 14.2 +00.0	10						
11	357 01.8 +00.8	S 11 43.2 +00.6	241 30.0 +02.3	S 14 59.6 -00.1	257 01.2 +02.3	S 19 14.2 +00.0	11						
12	12 02.6 +00.9	S 11 43.8 +00.6	256 32.3 +02.3	S 14 59.5 +00.0	272 03.5 +02.4	S 19 14.2 -00.1	12						
13	27 03.5 +00.8	S 11 44.4 +00.6	271 34.6 +02.4	S 14 59.5 -00.1	287 05.9 +02.4	S 19 14.1 +00.0	13						
14	42 04.3 +00.9	S 11 45.0 +00.6	286 37.0 +02.3	S 14 59.4 +00.0	302 08.3 +02.4	S 19 14.1 +00.0	14						
15	57 05.2 +00.8	S 11 45.6 +00.6	301 39.3 +02.4	S 14 59.4 -00.1	317 10.7 +02.3	S 19 14.1 +00.0	15						
16	72 06.0 +00.9	S 11 46.2 +00.6	316 41.7 +02.3	S 14 59.3 +00.0	332 13.0 +02.4	S 19 14.1 -00.1	16						
17	87 06.9 +00.9	S 11 46.8 +00.6	331 44.0 +02.4	S 14 59.3 -00.1	347 15.4 +02.4	S 19 14.0 +00.0	17						
18	102 07.8 +00.8	S 11 47.4 +00.6	346 46.4 +02.3	S 14 59.2 +00.0	2 17.8 +02.3	S 19 14.0 +00.0	18						
19	117 08.6 +00.9	S 11 48.0 +00.6	1 48.7 +02.3	S 14 59.2 +00.0	17 20.1 +02.4	S 19 14.0 +00.0	19						
20	132 09.5 +00.8	S 11 48.6 +00.6	16 51.0 +02.4	S 14 59.2 -00.1	32 22.5 +02.4	S 19 14.0 -00.1	20						
21	147 10.3 +00.9	S 11 49.2 +00.6	31 53.4 +02.3	S 14 59.1 +00.0	47 24.9 +02.3	S 19 13.9 +00.0	21						
22	162 11.2 +00.9	S 11 49.8 +00.6	46 55.7 +02.4	S 14 59.1 -00.1	62 27.2 +02.4	S 19 13.9 +00.0	22						
23	177 12.1 +00.8	S 11 50.4 +00.6	61 58.1 +02.3	S 14 59.0 +00.0	77 29.6 +02.4	S 19 13.9 +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 00'0 00'0 00'0 00'0 00'0 00'0		SD 00'4 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 150° 150° 150° 150° 150° 150°		SHA 035° 035° 035° 035° 035° 035°		SHA 050° 050° 050° 050° 050° 050°								
	Greenwich Culmination Time: 11:11		Greenwich Culmination Time: 18:52		Greenwich Culmination Time: 17:50								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184 06.8 +00.0	S	15 03.5 +00.8	135 06.6 -00.3	S	27 10.6 +00.1	207 22.3 -30.1	S	02 16.4 +16.0	00			
01	199 06.8 +00.0	S	15 04.3 +00.7	150 06.3 -00.2	S	27 10.7 +00.1	221 52.2 -30.2	S	02 32.4 +16.0	01			
02	214 06.8 +00.0	S	15 05.0 +00.8	165 06.1 -00.3	S	27 10.8 +00.1	236 22.0 -30.2	S	02 48.4 +16.0	02			
03	229 06.8 +00.0	S	15 05.8 +00.8	180 05.8 -00.2	S	27 10.9 +00.0	250 51.8 -30.3	S	03 04.4 +16.0	03			
04	244 06.8 +00.0	S	15 06.6 +00.8	195 05.6 -00.3	S	27 10.9 +00.1	265 21.5 -30.3	S	03 20.4 +16.1	04			
05	259 06.8 +00.0	S	15 07.4 +00.8	210 05.3 -00.2	S	27 11.0 +00.1	279 51.2 -30.3	S	03 36.5 +16.0	05			
06	274 06.8 +00.0	S	15 08.2 +00.7	225 05.1 -00.3	S	27 11.1 +00.1	294 20.9 -30.5	S	03 52.5 +16.0	06			
07	289 06.8 +00.0	S	15 08.9 +00.8	240 04.8 -00.2	S	27 11.2 +00.1	308 50.4 -30.5	S	04 08.5 +16.0	07			
08	304 06.8 +00.0	S	15 09.7 +00.8	255 04.6 -00.3	S	27 11.3 +00.1	323 19.9 -30.5	S	04 24.5 +16.0	08			
09	319 06.8 +00.0	S	15 10.5 +00.8	270 04.3 -00.2	S	27 11.4 +00.0	337 49.4 -30.6	S	04 40.5 +16.0	09			
10	334 06.8 +00.0	S	15 11.3 +00.8	285 04.1 -00.3	S	27 11.4 +00.1	352 18.8 -30.7	S	04 56.5 +16.0	10			
11	349 06.8 +00.0	S	15 12.1 +00.7	300 03.8 -00.2	S	27 11.5 +00.1	6 48.1 -30.7	S	05 12.5 +16.0	11			
12	4 06.8 +00.0	S	15 12.8 +00.8	315 03.6 -00.2	S	27 11.6 +00.1	21 17.4 -30.8	S	05 28.5 +16.0	12			
13	19 06.8 +00.0	S	15 13.6 +00.8	330 03.4 -00.3	S	27 11.7 +00.0	35 46.6 -30.9	S	05 44.5 +15.9	13			
14	34 06.8 +00.0	S	15 14.4 +00.8	345 03.1 -00.2	S	27 11.7 +00.1	50 15.7 -30.9	S	06 00.4 +15.9	14			
15	49 06.8 +00.0	S	15 15.2 +00.7	0 02.9 -00.3	S	27 11.8 +00.1	64 44.8 -31.0	S	06 16.3 +16.0	15			
16	64 06.8 +00.0	S	15 15.9 +00.8	15 02.6 -00.2	S	27 11.9 +00.1	79 13.8 -31.0	S	06 32.3 +15.8	16			
17	79 06.8 +00.0	S	15 16.7 +00.8	30 02.4 -00.3	S	27 12.0 +00.0	93 42.8 -31.1	S	06 48.1 +15.9	17			
18	94 06.8 +00.0	S	15 17.5 +00.7	45 02.1 -00.2	S	27 12.0 +00.1	108 11.7 -31.2	S	07 04.0 +15.8	18			
19	109 06.8 -00.1	S	15 18.2 +00.8	60 01.9 -00.2	S	27 12.1 +00.1	122 40.5 -31.3	S	07 19.8 +15.9	19			
20	124 06.7 +00.0	S	15 19.0 +00.8	75 01.7 -00.3	S	27 12.2 +00.1	137 09.2 -31.3	S	07 35.7 +15.7	20			
21	139 06.7 +00.0	S	15 19.8 +00.8	90 01.4 -00.2	S	27 12.3 +00.0	151 37.9 -31.4	S	07 51.4 +15.8	21			
22	154 06.7 +00.0	S	15 20.6 +00.7	105 01.2 -00.2	S	27 12.3 +00.1	166 06.5 -31.5	S	08 07.2 +15.7	22			
23	169 06.7 +00.0	S	15 21.3 +00.8	120 01.0 -00.3	S	27 12.4 +00.1	180 35.0 -31.6	S	08 22.9 +15.7	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 00'2 00'2 00'2 00'2 00'2 00'2			SD 16'3 16'3 16'4 16'4 16'4 16'5						
	HP 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 59'9 60'0 60'1 60'2 60'4 60'5						
	SHA 142° 141° 141° 141° 141° 141°			SHA 093° 092° 092° 092° 092° 092°			SHA 164° 162° 159° 157° 155° 153°						
	Greenwich Culmination Time: 11:43			Greenwich Culmination Time: 14:59			Greenwich Culmination Time: 10:31						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	192 12.9 +00.9	S	11 51.0 +00.6	77 00.4 +02.3	S	14 59.0 -00.1	92 32.0 +02.3	S	19 13.9 -00.1	00			
01	207 13.8 +00.8	S	11 51.6 +00.6	92 02.7 +02.4	S	14 58.9 +00.0	107 34.3 +02.4	S	19 13.8 +00.0	01			
02	222 14.6 +00.9	S	11 52.2 +00.6	107 05.1 +02.3	S	14 58.9 -00.1	122 36.7 +02.4	S	19 13.8 +00.0	02			
03	237 15.5 +00.8	S	11 52.8 +00.6	122 07.4 +02.3	S	14 58.8 +00.0	137 39.1 +02.3	S	19 13.8 +00.0	03			
04	252 16.3 +00.9	S	11 53.4 +00.6	137 09.7 +02.4	S	14 58.8 -00.1	152 41.4 +02.4	S	19 13.8 -00.1	04			
05	267 17.2 +00.8	S	11 54.0 +00.6	152 12.1 +02.3	S	14 58.7 +00.0	167 43.8 +02.4	S	19 13.7 +00.0	05			
06	282 18.0 +00.9	S	11 54.6 +00.6	167 14.4 +02.4	S	14 58.7 -00.1	182 46.2 +02.3	S	19 13.7 +00.0	06			
07	297 18.9 +00.9	S	11 55.2 +00.6	182 16.8 +02.3	S	14 58.6 +00.0	197 48.5 +02.4	S	19 13.7 +00.0	07			
08	312 19.8 +00.8	S	11 55.8 +00.6	197 19.1 +02.3	S	14 58.6 -00.1	212 50.9 +02.4	S	19 13.7 -00.1	08			
09	327 20.6 +00.9	S	11 56.4 +00.6	212 21.4 +02.4	S	14 58.5 +00.0	227 53.3 +02.3	S	19 13.6 +00.0	09			
10	342 21.5 +00.8	S	11 57.0 +00.6	227 23.8 +02.3	S	14 58.5 -00.1	242 55.6 +02.4	S	19 13.6 +00.0	10			
11	357 22.3 +00.9	S	11 57.6 +00.6	242 26.1 +02.3	S	14 58.4 +00.0	257 58.0 +02.4	S	19 13.6 +00.0	11			
12	12 23.2 +00.8	S	11 58.2 +00.6	257 28.4 +02.4	S	14 58.4 -00.1	273 00.4 +02.3	S	19 13.6 -00.1	12			
13	27 24.0 +00.9	S	11 58.8 +00.6	272 30.8 +02.3	S	14 58.3 +00.0	288 02.7 +02.4	S	19 13.5 +00.0	13			
14	42 24.9 +00.8	S	11 59.4 +00.6	287 33.1 +02.3	S	14 58.3 -00.1	303 05.1 +02.3	S	19 13.5 +00.0	14			
15	57 25.7 +00.9	S	11 60.0 +00.6	302 35.4 +02.4	S	14 58.2 +00.0	318 07.4 +02.4	S	19 13.5 +00.0	15			
16	72 26.6 +00.8	S	12 00.6 +00.6	317 37.8 +02.3	S	14 58.2 -00.1	333 09.8 +02.4	S	19 13.5 -00.1	16			
17	87 27.4 +00.9	S	12 01.2 +00.5	332 40.1 +02.3	S	14 58.1 +00.0	348 12.2 +02.3	S	19 13.4 +00.0	17			
18	102 28.3 +00.9	S	12 01.7 +00.6	347 42.4 +02.4	S	14 58.1 -00.1	3 14.5 +02.4	S	19 13.4 +00.0	18			
19	117 29.2 +00.8	S	12 02.3 +00.6	2 44.8 +02.3	S	14 58.0 +00.0	18 16.9 +02.4	S	19 13.4 +00.0	19			
20	132 30.0 +00.9	S	12 02.9 +00.6	17 47.1 +02.3	S	14 58.0 -00.1	33 19.3 +02.3	S	19 13.4 -00.1	20			
21	147 30.9 +00.8	S	12 03.5 +00.6	32 49.4 +02.4	S	14 57.9 +00.0	48 21.6 +02.4	S	19 13.3 +00.0	21			
22	162 31.7 +00.9	S	12 04.1 +00.6	47 51.8 +02.3	S	14 57.9 -00.1	63 24.0 +02.4	S	19 13.3 +00.0	22			
23	177 32.6 +00.8	S	12 04.7 +00.6	62 54.1 +02.3	S	14 57.8 +00.0	78 26.4 +02.3	S	19 13.3 +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 00'0 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 150° 150° 149° 149° 149° 149°			SHA 035° 035° 035° 035° 034° 034°			SHA 050° 050° 050° 050° 050° 050°						
	Greenwich Culmination Time: 11:10			Greenwich Culmination Time: 18:49			Greenwich Culmination Time: 17:47						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT	
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec		
00	184 06.7 +00.0	S 15 22.1 +00.8	135 00.7 -00.2	S 27 12.5 +00.0	195 03.4 -31.6	S 08 38.6 +15.6	00							
01	199 06.7 +00.0	S 15 22.9 +00.7	150 00.5 -00.2	S 27 12.5 +00.1	209 31.8 -31.7	S 08 54.2 +15.6	01							
02	214 06.7 +00.0	S 15 23.6 +00.8	165 00.3 -00.3	S 27 12.6 +00.0	224 00.1 -31.8	S 09 09.8 +15.6	02							
03	229 06.7 +00.0	S 15 24.4 +00.8	180 00.0 -00.2	S 27 12.6 +00.1	238 28.3 -31.8	S 09 25.4 +15.5	03							
04	244 06.7 +00.0	S 15 25.2 +00.8	194 59.8 -00.2	S 27 12.7 +00.1	252 56.5 -32.0	S 09 40.9 +15.5	04							
05	259 06.7 +00.0	S 15 26.0 +00.7	209 59.6 -00.3	S 27 12.8 +00.0	267 24.5 -32.0	S 09 56.4 +15.4	05							
06	274 06.7 -00.1	S 15 26.7 +00.8	224 59.3 -00.2	S 27 12.8 +00.1	281 52.5 -32.1	S 10 11.8 +15.4	06							
07	289 06.6 +00.0	S 15 27.5 +00.8	239 59.1 -00.2	S 27 12.9 +00.0	296 20.4 -32.2	S 10 27.2 +15.3	07							
08	304 06.6 +00.0	S 15 28.3 +00.7	254 58.9 -00.3	S 27 12.9 +00.1	310 48.2 -32.2	S 10 42.5 +15.3	08							
09	319 06.6 +00.0	S 15 29.0 +00.8	269 58.6 -00.2	S 27 13.0 +00.0	325 16.0 -32.4	S 10 57.8 +15.2	09							
10	334 06.6 +00.0	S 15 29.8 +00.8	284 58.4 -00.2	S 27 13.0 +00.1	339 43.6 -32.4	S 11 13.0 +15.2	10							
11	349 06.6 +00.0	S 15 30.6 +00.7	299 58.2 -00.2	S 27 13.1 +00.1	354 11.2 -32.5	S 11 28.2 +15.1	11							
12	4 06.6 +00.0	S 15 31.3 +00.8	314 58.0 -00.3	S 27 13.2 +00.0	8 38.7 -32.6	S 11 43.3 +15.0	12							
13	19 06.6 +00.0	S 15 32.1 +00.8	329 57.7 -00.2	S 27 13.2 +00.1	23 06.1 -32.7	S 11 58.3 +15.0	13							
14	34 06.6 +00.0	S 15 32.9 +00.7	344 57.5 -00.2	S 27 13.3 +00.0	37 33.4 -32.7	S 12 13.3 +14.9	14							
15	49 06.6 -00.1	S 15 33.6 +00.8	359 57.3 -00.2	S 27 13.3 +00.1	52 00.7 -32.9	S 12 28.2 +14.9	15							
16	64 06.5 +00.0	S 15 34.4 +00.7	14 57.1 -00.3	S 27 13.4 +00.0	66 27.8 -32.9	S 12 43.1 +14.8	16							
17	79 06.5 +00.0	S 15 35.1 +00.8	29 56.8 -00.2	S 27 13.4 +00.1	80 54.9 -33.1	S 12 57.9 +14.7	17							
18	94 06.5 +00.0	S 15 35.9 +00.8	44 56.6 -00.2	S 27 13.5 +00.0	95 21.8 -33.1	S 13 12.6 +14.6	18							
19	109 06.5 +00.0	S 15 36.7 +00.7	59 56.4 -00.2	S 27 13.5 +00.0	109 48.7 -33.2	S 13 27.2 +14.5	19							
20	124 06.5 +00.0	S 15 37.4 +00.8	74 56.2 -00.2	S 27 13.5 +00.1	124 15.5 -33.3	S 13 41.7 +14.5	20							
21	139 06.5 -00.1	S 15 38.2 +00.8	89 56.0 -00.2	S 27 13.6 +00.0	138 42.2 -33.4	S 13 56.2 +14.4	21							
22	154 06.4 +00.0	S 15 39.0 +00.7	104 55.8 -00.3	S 27 13.6 +00.1	153 08.8 -33.5	S 14 10.6 +14.3	22							
23	169 06.4 +00.0	S 15 39.7 +00.8	119 55.5 -00.2	S 27 13.7 +00.0	167 35.3 -33.6	S 14 24.9 +14.2	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 141° 140° 140° 140° 140° 140°	Greenwich Culmination Time: 11:43	UT 02 06 10 14 18 22	SD 00'2 00'2 00'2 00'2 00'2 00'2	HP 00'2 00'2 00'2 00'2 00'2 00'2	SHA 091° 091° 091° 091° 091° 091°	Greenwich Culmination Time: 15:00	UT 02 06 10 14 18 22	SD 16'5 16'5 16'5 16'6 16'6 16'6	HP 60'6 60'6 60'7 60'8 60'9 60'9	SHA 150° 148° 146° 144° 141° 139°	Greenwich Culmination Time: 11:24
UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT	
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec		
00	192 33.4 +00.9	S 12 05.3 +00.6	77 56.4 +02.4	S 14 57.8 -00.1	93 28.7 +02.4	S 19 13.3 -00.1	00							
01	207 34.3 +00.8	S 12 05.9 +00.6	92 58.8 +02.3	S 14 57.7 +00.0	108 31.1 +02.3	S 19 13.2 +00.0	01							
02	222 35.1 +00.9	S 12 06.5 +00.6	108 01.1 +02.3	S 14 57.7 -00.1	123 33.4 +02.4	S 19 13.2 +00.0	02							
03	237 36.0 +00.8	S 12 07.1 +00.6	123 03.4 +02.3	S 14 57.6 +00.0	138 35.8 +02.4	S 19 13.2 +00.0	03							
04	252 36.8 +00.9	S 12 07.7 +00.6	138 05.7 +02.4	S 14 57.6 -00.1	153 38.2 +02.3	S 19 13.2 -00.1	04							
05	267 37.7 +00.8	S 12 08.3 +00.6	153 08.1 +02.3	S 14 57.5 +00.0	168 40.5 +02.4	S 19 13.1 +00.0	05							
06	282 38.5 +00.9	S 12 08.9 +00.6	168 10.4 +02.3	S 14 57.5 -00.1	183 42.9 +02.4	S 19 13.1 +00.0	06							
07	297 39.4 +00.8	S 12 09.5 +00.6	183 12.7 +02.4	S 14 57.4 +00.0	198 45.3 +02.3	S 19 13.1 +00.0	07							
08	312 40.2 +00.9	S 12 10.1 +00.6	198 15.1 +02.3	S 14 57.4 -00.1	213 47.6 +02.4	S 19 13.1 -00.1	08							
09	327 41.1 +00.8	S 12 10.7 +00.6	213 17.4 +02.3	S 14 57.3 +00.0	228 50.0 +02.3	S 19 13.0 +00.0	09							
10	342 41.9 +00.9	S 12 11.3 +00.6	228 19.7 +02.3	S 14 57.3 -00.1	243 52.3 +02.4	S 19 13.0 +00.0	10							
11	357 42.8 +00.8	S 12 11.9 +00.6	243 22.0 +02.4	S 14 57.2 -00.1	258 54.7 +02.4	S 19 13.0 +00.0	11							
12	12 43.6 +00.9	S 12 12.5 +00.5	258 24.4 +02.3	S 14 57.1 +00.0	273 57.1 +02.3	S 19 13.0 -00.1	12							
13	27 44.5 +00.8	S 12 13.0 +00.6	273 26.7 +02.3	S 14 57.1 -00.1	288 59.4 +02.4	S 19 12.9 +00.0	13							
14	42 45.3 +00.9	S 12 13.6 +00.6	288 29.0 +02.3	S 14 57.0 +00.0	304 01.8 +02.3	S 19 12.9 +00.0	14							
15	57 46.2 +00.8	S 12 14.2 +00.6	303 31.3 +02.4	S 14 57.0 -00.1	319 04.1 +02.4	S 19 12.9 +00.0	15							
16	72 47.0 +00.9	S 12 14.8 +00.6	318 33.7 +02.3	S 14 56.9 +00.0	334 06.5 +02.4	S 19 12.9 -00.1	16							
17	87 47.9 +00.8	S 12 15.4 +00.6	333 36.0 +02.3	S 14 56.9 -00.1	349 08.9 +02.3	S 19 12.8 +00.0	17							
18	102 48.7 +00.9	S 12 16.0 +00.6	348 38.3 +02.3	S 14 56.8 +00.0	4 11.2 +02.4	S 19 12.8 +00.0	18							
19	117 49.6 +00.8	S 12 16.6 +00.6	3 40.6 +02.4	S 14 56.8 -00.1	19 13.6 +02.3	S 19 12.8 -00.1	19							
20	132 50.4 +00.9	S 12 17.2 +00.6	18 43.0 +02.3	S 14 56.7 +00.0	34 15.9 +02.4	S 19 12.7 +00.0	20							
21	147 51.3 +00.8	S 12 17.8 +00.6	33 45.3 +02.3	S 14 56.7 -00.1	49 18.3 +02.4	S 19 12.7 +00.0	21							
22	162 52.1 +00.9	S 12 18.4 +00.6	48 47.6 +02.3	S 14 56.6 +00.0	64 20.7 +02.3	S 19 12.7 +00.0	22							
23	177 53.0 +00.8	S 12 19.0 +00.6	63 49.9 +02.4	S 14 56.6 -00.1	79 23.0 +02.4	S 19 12.7 -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 149° 149° 149° 149° 149° 149°	Greenwich Culmination Time: 11:09	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 034° 034° 034° 034° 034° 034°	Greenwich Culmination Time: 18:45	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° 050° 050° 050° 050°	Greenwich Culmination Time: 17:43

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184 06.4 +00.0	S 15 40.5 +00.7	134 55.3 -00.2	S 27 13.7 +00.1	182 01.7 -33.6	S 14 39.1 +14.2	00						
01	199 06.4 +00.0	S 15 41.2 +00.8	149 55.1 -00.2	S 27 13.8 +00.0	196 28.1 -33.8	S 14 53.3 +14.0	01						
02	214 06.4 +00.0	S 15 42.0 +00.8	164 54.9 -00.2	S 27 13.8 +00.0	210 54.3 -33.8	S 15 07.3 +14.0	02						
03	229 06.4 -00.1	S 15 42.8 +00.7	179 54.7 -00.2	S 27 13.8 +00.1	225 20.5 -34.0	S 15 21.3 +13.9	03						
04	244 06.3 +00.0	S 15 43.5 +00.8	194 54.5 -00.2	S 27 13.9 +00.0	239 46.5 -34.0	S 15 35.2 +13.7	04						
05	259 06.3 +00.0	S 15 44.3 +00.7	209 54.3 -00.2	S 27 13.9 +00.0	254 12.5 -34.2	S 15 48.9 +13.7	05						
06	274 06.3 +00.0	S 15 45.0 +00.8	224 54.1 -00.3	S 27 13.9 +00.1	268 38.3 -34.2	S 16 02.6 +13.6	06						
07	289 06.3 +00.0	S 15 45.8 +00.7	239 53.8 -00.2	S 27 14.0 +00.0	283 04.1 -34.3	S 16 16.2 +13.4	07						
08	304 06.3 -00.1	S 15 46.5 +00.8	254 53.6 -00.2	S 27 14.0 +00.0	297 29.8 -34.4	S 16 29.6 +13.4	08						
09	319 06.2 +00.0	S 15 47.3 +00.8	269 53.4 -00.2	S 27 14.0 +00.1	311 55.4 -34.5	S 16 43.0 +13.3	09						
10	334 06.2 +00.0	S 15 48.1 +00.7	284 53.2 -00.2	S 27 14.1 +00.0	326 20.9 -34.6	S 16 56.3 +13.1	10						
11	349 06.2 +00.0	S 15 48.8 +00.8	299 53.0 -00.2	S 27 14.1 +00.0	340 46.3 -34.7	S 17 09.4 +13.1	11						
12	4 06.2 +00.0	S 15 49.6 +00.7	314 52.8 -00.2	S 27 14.1 +00.1	355 11.6 -34.8	S 17 22.5 +12.9	12						
13	19 06.2 -00.1	S 15 50.3 +00.8	329 52.6 -00.2	S 27 14.2 +00.0	9 36.8 -34.9	S 17 35.4 +12.8	13						
14	34 06.1 +00.0	S 15 51.1 +00.7	344 52.4 -00.2	S 27 14.2 +00.0	24 01.9 -35.0	S 17 48.2 +12.7	14						
15	49 06.1 +00.0	S 15 51.8 +00.8	359 52.2 -00.2	S 27 14.2 +00.0	38 26.9 -35.0	S 18 00.9 +12.6	15						
16	64 06.1 +00.0	S 15 52.6 +00.7	14 52.0 -00.2	S 27 14.2 +00.1	52 51.9 -35.2	S 18 13.5 +12.4	16						
17	79 06.1 -00.1	S 15 53.3 +00.8	29 51.8 -00.2	S 27 14.3 +00.0	67 16.7 -35.3	S 18 25.9 +12.4	17						
18	94 06.0 +00.0	S 15 54.1 +00.7	44 51.6 -00.2	S 27 14.3 +00.0	81 41.4 -35.3	S 18 38.3 +12.2	18						
19	109 06.0 +00.0	S 15 54.8 +00.8	59 51.4 -00.2	S 27 14.3 +00.0	96 06.1 -35.5	S 18 50.5 +12.1	19						
20	124 06.0 +00.0	S 15 55.6 +00.7	74 51.2 -00.2	S 27 14.3 +00.0	110 30.6 -35.5	S 19 02.6 +11.9	20						
21	139 06.0 +00.0	S 15 56.3 +00.8	89 51.0 -00.2	S 27 14.3 +00.1	124 55.1 -35.6	S 19 14.5 +11.9	21						
22	154 06.0 -00.1	S 15 57.1 +00.7	104 50.8 -00.2	S 27 14.4 +00.0	139 19.5 -35.7	S 19 26.4 +11.6	22						
23	169 05.9 +00.0	S 15 57.8 +00.8	119 50.6 -00.2	S 27 14.4 +00.0	153 43.8 -35.8	S 19 38.0 +11.6	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 00'2 00'2 00'2 00'2 00'2 00'2		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 00'2 00'2 00'2 00'2 00'2 00'2		HP 61'0 61'0 61'0 61'1 61'1 61'1								
	SHA 140° 139° 139° 139° 139° 139°		SHA 090° 090° 090° 090° 090° 089°		SHA 136° 134° 131° 129° 127° 124°								
	Greenwich Culmination Time: 11:43		Greenwich Culmination Time: 15:00		Greenwich Culmination Time: 12:20								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	192 53.8 +00.9	S 12 19.6 +00.6	78 52.3 +02.3	S 14 56.5 +00.0	94 25.4 +02.3	S 19 12.6 +00.0	00						
01	207 54.7 +00.8	S 12 20.2 +00.5	93 54.6 +02.3	S 14 56.5 -00.1	109 27.7 +02.4	S 19 12.6 +00.0	01						
02	222 55.5 +00.9	S 12 20.7 +00.6	108 56.9 +02.3	S 14 56.4 +00.0	124 30.1 +02.4	S 19 12.6 +00.0	02						
03	237 56.4 +00.8	S 12 21.3 +00.6	123 59.2 +02.4	S 14 56.4 -00.1	139 32.5 +02.3	S 19 12.6 -00.1	03						
04	252 57.2 +00.9	S 12 21.9 +00.6	139 01.6 +02.3	S 14 56.3 -00.1	154 34.8 +02.4	S 19 12.5 +00.0	04						
05	267 58.1 +00.8	S 12 22.5 +00.6	154 03.9 +02.3	S 14 56.2 +00.0	169 37.2 +02.3	S 19 12.5 +00.0	05						
06	282 58.9 +00.8	S 12 23.1 +00.6	169 06.2 +02.3	S 14 56.2 -00.1	184 39.5 +02.4	S 19 12.5 +00.0	06						
07	297 59.7 +00.9	S 12 23.7 +00.6	184 08.5 +02.3	S 14 56.1 +00.0	199 41.9 +02.3	S 19 12.5 -00.1	07						
08	313 00.6 +00.8	S 12 24.3 +00.6	199 10.8 +02.4	S 14 56.1 -00.1	214 44.2 +02.4	S 19 12.4 +00.0	08						
09	328 01.4 +00.9	S 12 24.9 +00.6	214 13.2 +02.3	S 14 56.0 +00.0	229 46.6 +02.4	S 19 12.4 +00.0	09						
10	343 02.3 +00.8	S 12 25.5 +00.6	229 15.5 +02.3	S 14 56.0 -00.1	244 49.0 +02.3	S 19 12.4 -00.1	10						
11	358 03.1 +00.9	S 12 26.1 +00.6	244 17.8 +02.3	S 14 55.9 +00.0	259 51.3 +02.4	S 19 12.3 +00.0	11						
12	13 04.0 +00.8	S 12 26.7 +00.5	259 20.1 +02.3	S 14 55.9 -00.1	274 53.7 +02.3	S 19 12.3 +00.0	12						
13	28 04.8 +00.9	S 12 27.2 +00.6	274 22.4 +02.3	S 14 55.8 -00.1	289 56.0 +02.4	S 19 12.3 +00.0	13						
14	43 05.7 +00.8	S 12 27.8 +00.6	289 24.7 +02.4	S 14 55.7 +00.0	304 58.4 +02.3	S 19 12.3 -00.1	14						
15	58 06.5 +00.9	S 12 28.4 +00.6	304 27.1 +02.3	S 14 55.7 -00.1	320 00.7 +02.4	S 19 12.2 +00.0	15						
16	73 07.4 +00.8	S 12 29.0 +00.6	319 29.4 +02.3	S 14 55.6 +00.0	335 03.1 +02.4	S 19 12.2 +00.0	16						
17	88 08.2 +00.9	S 12 29.6 +00.6	334 31.7 +02.3	S 14 55.6 -00.1	350 05.5 +02.3	S 19 12.2 +00.0	17						
18	103 09.1 +00.8	S 12 30.2 +00.6	349 34.0 +02.3	S 14 55.5 +00.0	5 07.8 +02.4	S 19 12.2 -00.1	18						
19	118 09.9 +00.8	S 12 30.8 +00.6	4 36.3 +02.4	S 14 55.5 -00.1	20 10.2 +02.3	S 19 12.1 +00.0	19						
20	133 10.7 +00.9	S 12 31.4 +00.6	19 38.7 +02.3	S 14 55.4 +00.0	35 12.5 +02.4	S 19 12.1 +00.0	20						
21	148 11.6 +00.8	S 12 32.0 +00.5	34 41.0 +02.3	S 14 55.4 -00.1	50 14.9 +02.3	S 19 12.1 -00.1	21						
22	163 12.4 +00.9	S 12 32.5 +00.6	49 43.3 +02.3	S 14 55.3 -00.1	65 17.2 +02.4	S 19 12.0 +00.0	22						
23	178 13.3 +00.8	S 12 33.1 +00.6	64 45.6 +02.3	S 14 55.2 +00.0	80 19.6 +02.3	S 19 12.0 +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 148° 148° 148° 148° 148° 148°		SHA 034° 034° 034° 034° 034° 034°		SHA 050° 050° 050° 050° 050° 050°								
	Greenwich Culmination Time: 11:07		Greenwich Culmination Time: 18:41		Greenwich Culmination Time: 17:39								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184 05.9 +00.0	S 15 58.6 +00.7	134 50.4 -00.2	S 27 14.4 +00.0	168 08.0 -35.9	S 19 49.6 +11.4	00						
01	199 05.9 +00.0	S 15 59.3 +00.8	149 50.2 -00.1	S 27 14.4 +00.0	182 32.1 -36.0	S 20 01.0 +11.3	01						
02	214 05.9 -00.1	S 16 00.1 +00.7	164 50.1 -00.2	S 27 14.4 +00.0	196 56.1 -36.1	S 20 12.3 +11.1	02						
03	229 05.8 +00.0	S 16 00.8 +00.8	179 49.9 -00.2	S 27 14.4 +00.0	211 20.0 -36.1	S 20 23.4 +11.0	03						
04	244 05.8 +00.0	S 16 01.6 +00.7	194 49.7 -00.2	S 27 14.4 +00.1	225 43.9 -36.3	S 20 34.4 +10.9	04						
05	259 05.8 -00.1	S 16 02.3 +00.8	209 49.5 -00.2	S 27 14.5 +00.0	240 07.6 -36.3	S 20 45.3 +10.7	05						
06	274 05.7 +00.0	S 16 03.1 +00.7	224 49.3 -00.2	S 27 14.5 +00.0	254 31.3 -36.4	S 20 56.0 +10.6	06						
07	289 05.7 +00.0	S 16 03.8 +00.8	239 49.1 -00.2	S 27 14.5 +00.0	268 54.9 -36.6	S 21 06.6 +10.4	07						
08	304 05.7 +00.0	S 16 04.6 +00.7	254 48.9 -00.2	S 27 14.5 +00.0	283 18.3 -36.5	S 21 17.0 +10.2	08						
09	319 05.7 -00.1	S 16 05.3 +00.8	269 48.7 -00.1	S 27 14.5 +00.0	297 41.8 -36.7	S 21 27.2 +10.1	09						
10	334 05.6 +00.0	S 16 06.1 +00.7	284 48.6 -00.2	S 27 14.5 +00.0	312 05.1 -36.7	S 21 37.3 +10.0	10						
11	349 05.6 +00.0	S 16 06.8 +00.7	299 48.4 -00.2	S 27 14.5 +00.0	326 28.4 -36.9	S 21 47.3 +09.8	11						
12	4 05.6 -00.1	S 16 07.5 +00.8	314 48.2 -00.2	S 27 14.5 +00.0	340 51.5 -36.9	S 21 57.1 +09.6	12						
13	19 05.5 +00.0	S 16 08.3 +00.7	329 48.0 -00.2	S 27 14.5 +00.0	355 14.6 -37.0	S 22 06.7 +09.5	13						
14	34 05.5 +00.0	S 16 09.0 +00.8	344 47.8 -00.1	S 27 14.5 +00.0	9 37.6 -37.0	S 22 16.2 +09.3	14						
15	49 05.5 -00.1	S 16 09.8 +00.7	359 47.7 -00.2	S 27 14.5 +00.0	24 00.6 -37.1	S 22 25.5 +09.1	15						
16	64 05.4 +00.0	S 16 10.5 +00.8	14 47.5 -00.2	S 27 14.5 +00.0	38 23.5 -37.3	S 22 34.6 +09.0	16						
17	79 05.4 +00.0	S 16 11.3 +00.7	29 47.3 -00.2	S 27 14.5 +00.0	52 46.2 -37.2	S 22 43.6 +08.8	17						
18	94 05.4 +00.0	S 16 12.0 +00.7	44 47.1 -00.1	S 27 14.5 +00.0	67 09.0 -37.4	S 22 52.4 +08.7	18						
19	109 05.4 -00.1	S 16 12.7 +00.8	59 47.0 -00.2	S 27 14.5 +00.0	81 31.6 -37.4	S 23 01.1 +08.4	19						
20	124 05.3 +00.0	S 16 13.5 +00.7	74 46.8 -00.2	S 27 14.5 +00.0	95 54.2 -37.5	S 23 09.5 +08.3	20						
21	139 05.3 +00.0	S 16 14.2 +00.8	89 46.6 -00.2	S 27 14.5 +00.0	110 16.7 -37.5	S 23 17.8 +08.2	21						
22	154 05.3 -00.1	S 16 15.0 +00.7	104 46.4 -00.1	S 27 14.5 +00.0	124 39.2 -37.6	S 23 26.0 +07.9	22						
23	169 05.2 +00.0	S 16 15.7 +00.7	119 46.3 -00.2	S 27 14.5 +00.0	139 01.6 -37.7	S 23 33.9 +07.8	23						
UT	02 06 10 14 18 22	SD 16'1 16'1 16'1 16'1 16'1 16'1	UT	02 06 10 14 18 22	SD 00'2 00'2 00'2 00'2 00'2 00'2	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 00'2 00'2 00'2 00'2 00'2 00'2		HP 61'1 61'1 61'0 61'0 61'0 60'9		SHA 121° 119° 116° 114° 111° 108°						
	SHA 139° 138° 138° 138° 138° 138°	Greenwich Culmination Time: 11:43		SHA 089° 089° 089° 089° 089° 088°	Greenwich Culmination Time: 15:00		Greenwich Culmination Time: 13:19						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	193 14.1 +00.9	S 12 33.7 +00.6	79 47.9 +02.3	S 14 55.2 -00.1	95 21.9 +02.4	S 19 12.0 +00.0	00						
01	208 15.0 +00.8	S 12 34.3 +00.6	94 50.2 +02.3	S 14 55.1 +00.0	110 24.3 +02.3	S 19 12.0 -00.1	01						
02	223 15.8 +00.8	S 12 34.9 +00.6	109 52.5 +02.4	S 14 55.1 -00.1	125 26.6 +02.4	S 19 11.9 +00.0	02						
03	238 16.6 +00.9	S 12 35.5 +00.6	124 54.9 +02.3	S 14 55.0 +00.0	140 29.0 +02.4	S 19 11.9 +00.0	03						
04	253 17.5 +00.8	S 12 36.1 +00.6	139 57.2 +02.3	S 14 55.0 -00.1	155 31.4 +02.3	S 19 11.9 -00.1	04						
05	268 18.3 +00.9	S 12 36.7 +00.6	154 59.5 +02.3	S 14 54.9 +00.0	170 33.7 +02.4	S 19 11.8 +00.0	05						
06	283 19.2 +00.8	S 12 37.3 +00.5	170 01.8 +02.3	S 14 54.9 -00.1	185 36.1 +02.3	S 19 11.8 +00.0	06						
07	298 20.0 +00.9	S 12 37.8 +00.6	185 04.1 +02.3	S 14 54.8 -00.1	200 38.4 +02.4	S 19 11.8 +00.0	07						
08	313 20.9 +00.8	S 12 38.4 +00.6	200 06.4 +02.3	S 14 54.7 +00.0	215 40.8 +02.3	S 19 11.8 -00.1	08						
09	328 21.7 +00.8	S 12 39.0 +00.6	215 08.7 +02.4	S 14 54.7 -00.1	230 43.1 +02.4	S 19 11.7 +00.0	09						
10	343 22.5 +00.9	S 12 39.6 +00.6	230 11.1 +02.3	S 14 54.6 +00.0	245 45.5 +02.3	S 19 11.7 +00.0	10						
11	358 23.4 +00.8	S 12 40.2 +00.6	245 13.4 +02.3	S 14 54.6 -00.1	260 47.8 +02.4	S 19 11.7 +00.0	11						
12	13 24.2 +00.9	S 12 40.8 +00.6	260 15.7 +02.3	S 14 54.5 +00.0	275 50.2 +02.3	S 19 11.7 -00.1	12						
13	28 25.1 +00.8	S 12 41.4 +00.6	275 18.0 +02.3	S 14 54.5 -00.1	290 52.5 +02.4	S 19 11.6 +00.0	13						
14	43 25.9 +00.8	S 12 42.0 +00.5	290 20.3 +02.3	S 14 54.4 -00.1	305 54.9 +02.3	S 19 11.6 +00.0	14						
15	58 26.7 +00.9	S 12 42.5 +00.6	305 22.6 +02.3	S 14 54.3 +00.0	320 57.2 +02.4	S 19 11.6 -00.1	15						
16	73 27.6 +00.8	S 12 43.1 +00.6	320 24.9 +02.3	S 14 54.3 -00.1	335 59.6 +02.3	S 19 11.5 +00.0	16						
17	88 28.4 +00.9	S 12 43.7 +00.6	335 27.2 +02.3	S 14 54.2 +00.0	351 01.9 +02.4	S 19 11.5 +00.0	17						
18	103 29.3 +00.8	S 12 44.3 +00.6	350 29.5 +02.3	S 14 54.2 -00.1	6 04.3 +02.3	S 19 11.5 +00.0	18						
19	118 30.1 +00.8	S 12 44.9 +00.6	5 31.8 +02.4	S 14 54.1 -00.1	21 06.6 +02.4	S 19 11.5 -00.1	19						
20	133 30.9 +00.9	S 12 45.5 +00.6	20 34.2 +02.3	S 14 54.0 +00.0	36 09.0 +02.4	S 19 11.4 +00.0	20						
21	148 31.8 +00.8	S 12 46.1 +00.5	35 36.5 +02.3	S 14 54.0 -00.1	51 11.4 +02.3	S 19 11.4 +00.0	21						
22	163 32.6 +00.9	S 12 46.6 +00.6	50 38.8 +02.3	S 14 53.9 +00.0	66 13.7 +02.4	S 19 11.4 -00.1	22						
23	178 33.5 +00.8	S 12 47.2 +00.6	65 41.1 +02.3	S 14 53.9 -00.1	81 16.1 +02.3	S 19 11.3 +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		SHA 050° 050° 050° 050° 050° 050°						
	SHA 148° 148° 148° 147° 147° 147°	Greenwich Culmination Time: 11:06		SHA 034° 034° 034° 034° 034° 034°	Greenwich Culmination Time: 18:37		Greenwich Culmination Time: 17:35						

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	184 05.2 +00.0	S 16 16.4 +00.8	134 46.1 -00.2	S 27 14.5 +00.0	153 23.9 -37.7	S 23 41.7 +07.6	00													
01	199 05.2 -00.1	S 16 17.2 +00.7	149 45.9 -00.1	S 27 14.5 +00.0	167 46.2 -37.8	S 23 49.3 +07.4	01													
02	214 05.1 +00.0	S 16 17.9 +00.7	164 45.8 -00.2	S 27 14.5 +00.0	182 08.4 -37.8	S 23 56.7 +07.3	02													
03	229 05.1 -00.1	S 16 18.6 +00.8	179 45.6 -00.2	S 27 14.5 -00.1	196 30.6 -37.9	S 24 04.0 +07.1	03													
04	244 05.0 +00.0	S 16 19.4 +00.7	194 45.4 -00.1	S 27 14.4 +00.0	210 52.7 -37.9	S 24 11.1 +06.9	04													
05	259 05.0 +00.0	S 16 20.1 +00.8	209 45.3 -00.2	S 27 14.4 +00.0	225 14.8 -38.0	S 24 18.0 +06.7	05													
06	274 05.0 -00.1	S 16 20.9 +00.7	224 45.1 -00.2	S 27 14.4 +00.0	239 36.8 -38.1	S 24 24.7 +06.5	06													
07	289 04.9 +00.0	S 16 21.6 +00.7	239 44.9 -00.1	S 27 14.4 +00.0	253 58.7 -38.0	S 24 31.2 +06.3	07													
08	304 04.9 +00.0	S 16 22.3 +00.8	254 44.8 -00.2	S 27 14.4 +00.0	268 20.7 -38.2	S 24 37.5 +06.2	08													
09	319 04.9 -00.1	S 16 23.1 +00.7	269 44.6 -00.1	S 27 14.4 +00.0	282 42.5 -38.1	S 24 43.7 +06.0	09													
10	334 04.8 +00.0	S 16 23.8 +00.7	284 44.5 -00.2	S 27 14.4 -00.1	297 04.4 -38.2	S 24 49.7 +05.7	10													
11	349 04.8 +00.0	S 16 24.5 +00.8	299 44.3 -00.2	S 27 14.3 +00.0	311 26.2 -38.3	S 24 55.4 +05.6	11													
12	4 04.8 -00.1	S 16 25.3 +00.7	314 44.1 -00.1	S 27 14.3 +00.0	325 47.9 -38.2	S 25 01.0 +05.4	12													
13	19 04.7 +00.0	S 16 26.0 +00.7	329 44.0 -00.2	S 27 14.3 +00.0	340 09.7 -38.3	S 25 06.4 +05.3	13													
14	34 04.7 -00.1	S 16 26.7 +00.8	344 43.8 -00.1	S 27 14.3 -00.1	354 31.4 -38.3	S 25 11.7 +05.0	14													
15	49 04.6 +00.0	S 16 27.5 +00.7	359 43.7 -00.2	S 27 14.2 +00.0	8 53.1 -38.4	S 25 16.7 +04.8	15													
16	64 04.6 +00.0	S 16 28.2 +00.7	14 43.5 -00.1	S 27 14.2 +00.0	23 14.7 -38.4	S 25 21.5 +04.7	16													
17	79 04.6 -00.1	S 16 28.9 +00.7	29 43.4 -00.2	S 27 14.2 +00.0	37 36.3 -38.4	S 25 26.2 +04.4	17													
18	94 04.5 +00.0	S 16 29.6 +00.8	44 43.2 -00.1	S 27 14.2 -00.1	51 57.9 -38.4	S 25 30.6 +04.3	18													
19	109 04.5 -00.1	S 16 30.4 +00.7	59 43.1 -00.2	S 27 14.1 +00.0	66 19.5 -38.4	S 25 34.9 +04.1	19													
20	124 04.4 +00.0	S 16 31.1 +00.7	74 42.9 -00.1	S 27 14.1 +00.0	80 41.1 -38.5	S 25 39.0 +03.8	20													
21	139 04.4 -00.1	S 16 31.8 +00.8	89 42.8 -00.2	S 27 14.1 +00.0	95 02.6 -38.4	S 25 42.8 +03.7	21													
22	154 04.3 +00.0	S 16 32.6 +00.7	104 42.6 -00.1	S 27 14.1 -00.1	109 24.2 -38.5	S 25 46.5 +03.5	22													
23	169 04.3 +00.0	S 16 33.3 +00.7	119 42.5 -00.2	S 27 14.0 +00.0	123 45.7 -38.4	S 25 50.0 +03.3	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	00'2	00'2	00'2	00'2	00'2	00'2	SD						
HP	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						
SHA	138°	137°	137°	137°	137°	137°	SHA	088°	088°	088°	088°	088°	087°	SHA						
Greenwich Culmination Time: 11:43							Greenwich Culmination Time: 15:01							Greenwich Culmination Time: 14:22						

UT	Mars				Jupiter				Saturn				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	193 34.3 +00.8	S 12 47.8 +00.6	80 43.4 +02.3	S 14 53.8 -00.1	96 18.4 +02.4	S 19 11.3 +00.0	00													
01	208 35.1 +00.9	S 12 48.4 +00.6	95 45.7 +02.3	S 14 53.7 +00.0	111 20.8 +02.3	S 19 11.3 +00.0	01													
02	223 36.0 +00.8	S 12 49.0 +00.6	110 48.0 +02.3	S 14 53.7 -00.1	126 23.1 +02.4	S 19 11.3 -00.1	02													
03	238 36.8 +00.9	S 12 49.6 +00.5	125 50.3 +02.3	S 14 53.6 +00.0	141 25.5 +02.3	S 19 11.2 +00.0	03													
04	253 37.7 +00.8	S 12 50.1 +00.6	140 52.6 +02.3	S 14 53.6 -00.1	156 27.8 +02.4	S 19 11.2 +00.0	04													
05	268 38.5 +00.8	S 12 50.7 +00.6	155 54.9 +02.3	S 14 53.5 +00.0	171 30.2 +02.3	S 19 11.2 -00.1	05													
06	283 39.3 +00.9	S 12 51.3 +00.6	170 57.2 +02.3	S 14 53.5 -00.1	186 32.5 +02.4	S 19 11.1 +00.0	06													
07	298 40.2 +00.8	S 12 51.9 +00.6	185 59.5 +02.3	S 14 53.4 -00.1	201 34.9 +02.3	S 19 11.1 +00.0	07													
08	313 41.0 +00.9	S 12 52.5 +00.6	201 01.8 +02.3	S 14 53.3 +00.0	216 37.2 +02.4	S 19 11.1 +00.0	08													
09	328 41.9 +00.8	S 12 53.1 +00.6	216 04.1 +02.3	S 14 53.3 -00.1	231 39.6 +02.3	S 19 11.1 -00.1	09													
10	343 42.7 +00.8	S 12 53.7 +00.5	231 06.4 +02.3	S 14 53.2 +00.0	246 41.9 +02.4	S 19 11.0 +00.0	10													
11	358 43.5 +00.9	S 12 54.2 +00.6	246 08.7 +02.4	S 14 53.2 -00.1	261 44.3 +02.3	S 19 11.0 +00.0	11													
12	13 44.4 +00.8	S 12 54.8 +00.6	261 11.1 +02.3	S 14 53.1 -00.1	276 46.6 +02.3	S 19 11.0 -00.1	12													
13	28 45.2 +00.8	S 12 55.4 +00.6	276 13.4 +02.3	S 14 53.0 +00.0	291 48.9 +02.4	S 19 10.9 +00.0	13													
14	43 46.0 +00.9	S 12 56.0 +00.6	291 15.7 +02.3	S 14 53.0 -00.1	306 51.3 +02.3	S 19 10.9 +00.0	14													
15	58 46.9 +00.8	S 12 56.6 +00.5	306 18.0 +02.3	S 14 52.9 +00.0	321 53.6 +02.4	S 19 10.9 -00.1	15													
16	73 47.7 +00.8	S 12 57.1 +00.6	321 20.3 +02.3	S 14 52.9 -00.1	336 56.0 +02.3	S 19 10.8 +00.0	16													
17	88 48.5 +00.9	S 12 57.7 +00.6	336 22.6 +02.3	S 14 52.8 -00.1	351 58.3 +02.4	S 19 10.8 +00.0	17													
18	103 49.4 +00.8	S 12 58.3 +00.6	351 24.9 +02.3	S 14 52.7 +00.0	7 00.7 +02.3	S 19 10.8 +00.0	18													
19	118 50.2 +00.9	S 12 58.9 +00.6	6 27.2 +02.3	S 14 52.7 -00.1	22 03.0 +02.4	S 19 10.8 -00.1	19													
20	133 51.1 +00.8	S 12 59.5 +00.6	21 29.5 +02.3	S 14 52.6 -00.1	37 05.4 +02.3	S 19 10.7 +00.0	20													
21	148 51.9 +00.8	S 13 00.1 +00.5	36 31.8 +02.3	S 14 52.5 +00.0	52 07.7 +02.4	S 19 10.7 +00.0	21													
22	163 52.7 +00.9	S 13 00.6 +00.6	51 34.1 +02.3	S 14 52.5 -00.1	67 10.1 +02.3	S 19 10.7 -00.1	22													
23	178 53.6 +00.8	S 13 01.2 +00.6	66 36.4 +02.3	S 14 52.4 +00.0	82 12.4 +02.4	S 19 10.6 +00.0	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	147°	147°	147°	147°	147°	147°	SHA	034°	034°	034°	034°	034°	034°	SHA						
Greenwich Culmination Time: 11:05							Greenwich Culmination Time: 18:34							Greenwich Culmination Time: 17:32						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184 04.3 -00.1	S 16 34.0 +00.7	134 42.3 -00.1	S 27 14.0 +00.0	138 07.3 -38.5	S 25 53.3 +03.1	00						
01	199 04.2 +00.0	S 16 34.7 +00.8	149 42.2 -00.2	S 27 14.0 -00.1	152 28.8 -38.5	S 25 56.4 +02.9	01						
02	214 04.2 -00.1	S 16 35.5 +00.7	164 42.0 -00.1	S 27 13.9 +00.0	166 50.3 -38.4	S 25 59.3 +02.7	02						
03	229 04.1 +00.0	S 16 36.2 +00.7	179 41.9 -00.1	S 27 13.9 +00.0	181 11.9 -38.5	S 26 02.0 +02.5	03						
04	244 04.1 -00.1	S 16 36.9 +00.7	194 41.8 -00.2	S 27 13.9 -00.1	195 33.4 -38.4	S 26 04.5 +02.4	04						
05	259 04.0 +00.0	S 16 37.6 +00.8	209 41.6 -00.1	S 27 13.8 +00.0	209 55.0 -38.5	S 26 06.9 +02.1	05						
06	274 04.0 +00.0	S 16 38.4 +00.7	224 41.5 -00.1	S 27 13.8 +00.0	224 16.5 -38.4	S 26 09.0 +01.9	06						
07	289 04.0 -00.1	S 16 39.1 +00.7	239 41.4 -00.2	S 27 13.8 -00.1	238 38.1 -38.4	S 26 10.9 +01.8	07						
08	304 03.9 +00.0	S 16 39.8 +00.7	254 41.2 -00.1	S 27 13.7 +00.0	252 59.7 -38.4	S 26 12.7 +01.5	08						
09	319 03.9 -00.1	S 16 40.5 +00.7	269 41.1 -00.2	S 27 13.7 -00.1	267 21.3 -38.4	S 26 14.2 +01.4	09						
10	334 03.8 +00.0	S 16 41.2 +00.8	284 40.9 -00.1	S 27 13.6 +00.0	281 42.9 -38.3	S 26 15.6 +01.1	10						
11	349 03.8 -00.1	S 16 42.0 +00.7	299 40.8 -00.1	S 27 13.6 -00.1	296 04.6 -38.3	S 26 16.7 +01.0	11						
12	4 03.7 +00.0	S 16 42.7 +00.7	314 40.7 -00.1	S 27 13.5 +00.0	310 26.3 -38.3	S 26 17.7 +00.8	12						
13	19 03.7 -00.1	S 16 43.4 +00.7	329 40.6 -00.2	S 27 13.5 +00.0	324 48.0 -38.3	S 26 18.5 +00.6	13						
14	34 03.6 +00.0	S 16 44.1 +00.7	344 40.4 -00.1	S 27 13.5 -00.1	339 09.7 -38.2	S 26 19.1 +00.4	14						
15	49 03.6 -00.1	S 16 44.8 +00.8	359 40.3 -00.1	S 27 13.4 +00.0	353 31.5 -38.2	S 26 19.5 +00.2	15						
16	64 03.5 +00.0	S 16 45.6 +00.7	14 40.2 -00.2	S 27 13.4 -00.1	7 53.3 -38.1	S 26 19.7 +00.0	16						
17	79 03.5 -00.1	S 16 46.3 +00.7	29 40.0 -00.1	S 27 13.3 +00.0	22 15.2 -38.1	S 26 19.7 -00.2	17						
18	94 03.4 +00.0	S 16 47.0 +00.7	44 39.9 -00.1	S 27 13.3 -00.1	36 37.1 -38.1	S 26 19.5 -00.4	18						
19	109 03.4 -00.1	S 16 47.7 +00.7	59 39.8 -00.1	S 27 13.2 +00.0	50 59.0 -38.0	S 26 19.1 -00.5	19						
20	124 03.3 +00.0	S 16 48.4 +00.8	74 39.7 -00.2	S 27 13.2 -00.1	65 21.0 -38.0	S 26 18.6 -00.8	20						
21	139 03.3 -00.1	S 16 49.2 +00.7	89 39.5 -00.1	S 27 13.1 +00.0	79 43.0 -37.9	S 26 17.8 -00.9	21						
22	154 03.2 +00.0	S 16 49.9 +00.7	104 39.4 -00.1	S 27 13.1 -00.1	94 05.1 -37.8	S 26 16.9 -01.2	22						
23	169 03.2 -00.1	S 16 50.6 +00.7	119 39.3 -00.1	S 27 13.0 +00.0	108 27.3 -37.8	S 26 15.7 -01.3	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	00'2 00'2 00'2 00'2 00'2 00'2		SD	16'5 16'4 16'4 16'4 16'3 16'3						
HP	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	60'4 60'3 60'2 60'1 60'0 59'9						
SHA	137° 136° 136° 136° 136° 136°		SHA	087° 087° 087° 087° 087° 086°		SHA	089° 087° 084° 081° 078° 076°						
Greenwich Culmination Time: 11:43			Greenwich Culmination Time: 15:01			Greenwich Culmination Time: 15:27							

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	193 54.4 +00.8	S 13 01.8 +00.6	81 38.7 +02.3	S 14 52.4 -00.1	97 14.8 +02.3	S 19 10.6 +00.0	00						
01	208 55.2 +00.9	S 13 02.4 +00.6	96 41.0 +02.3	S 14 52.3 -00.1	112 17.1 +02.4	S 19 10.6 -00.1	01						
02	223 56.1 +00.8	S 13 03.0 +00.5	111 43.3 +02.3	S 14 52.2 +00.0	127 19.5 +02.3	S 19 10.5 +00.0	02						
03	238 56.9 +00.8	S 13 03.5 +00.6	126 45.6 +02.3	S 14 52.2 -00.1	142 21.8 +02.4	S 19 10.5 +00.0	03						
04	253 57.7 +00.9	S 13 04.1 +00.6	141 47.9 +02.3	S 14 52.1 +00.0	157 24.2 +02.3	S 19 10.5 +00.0	04						
05	268 58.6 +00.8	S 13 04.7 +00.6	156 50.2 +02.3	S 14 52.1 -00.1	172 26.5 +02.3	S 19 10.5 -00.1	05						
06	283 59.4 +00.8	S 13 05.3 +00.6	171 52.5 +02.3	S 14 52.0 -00.1	187 28.8 +02.4	S 19 10.4 +00.0	06						
07	299 00.2 +00.9	S 13 05.9 +00.6	186 54.8 +02.3	S 14 51.9 +00.0	202 31.2 +02.3	S 19 10.4 +00.0	07						
08	314 01.1 +00.8	S 13 06.5 +00.5	201 57.1 +02.3	S 14 51.9 -00.1	217 33.5 +02.4	S 19 10.4 -00.1	08						
09	329 01.9 +00.8	S 13 07.0 +00.6	216 59.4 +02.3	S 14 51.8 -00.1	232 35.9 +02.3	S 19 10.3 +00.0	09						
10	344 02.7 +00.9	S 13 07.6 +00.6	232 01.7 +02.2	S 14 51.7 +00.0	247 38.2 +02.4	S 19 10.3 +00.0	10						
11	359 03.6 +00.8	S 13 08.2 +00.6	247 03.9 +02.3	S 14 51.7 -00.1	262 40.6 +02.3	S 19 10.3 -00.1	11						
12	14 04.4 +00.8	S 13 08.8 +00.6	262 06.2 +02.3	S 14 51.6 +00.0	277 42.9 +02.4	S 19 10.2 +00.0	12						
13	29 05.2 +00.9	S 13 09.4 +00.5	277 08.5 +02.3	S 14 51.6 -00.1	292 45.3 +02.3	S 19 10.2 +00.0	13						
14	44 06.1 +00.8	S 13 09.9 +00.6	292 10.8 +02.3	S 14 51.5 -00.1	307 47.6 +02.4	S 19 10.2 +00.0	14						
15	59 06.9 +00.8	S 13 10.5 +00.6	307 13.1 +02.3	S 14 51.4 +00.0	322 50.0 +02.3	S 19 10.2 -00.1	15						
16	74 07.7 +00.9	S 13 11.1 +00.6	322 15.4 +02.3	S 14 51.4 -00.1	337 52.3 +02.3	S 19 10.1 +00.0	16						
17	89 08.6 +00.8	S 13 11.7 +00.5	337 17.7 +02.3	S 14 51.3 -00.1	352 54.6 +02.4	S 19 10.1 +00.0	17						
18	104 09.4 +00.8	S 13 12.2 +00.6	352 20.0 +02.3	S 14 51.2 +00.0	7 57.0 +02.3	S 19 10.1 -00.1	18						
19	119 10.2 +00.8	S 13 12.8 +00.6	7 22.3 +02.3	S 14 51.2 -00.1	22 59.3 +02.4	S 19 10.0 +00.0	19						
20	134 11.0 +00.9	S 13 13.4 +00.6	22 24.6 +02.3	S 14 51.1 -00.1	38 01.7 +02.3	S 19 10.0 +00.0	20						
21	149 11.9 +00.8	S 13 14.0 +00.6	37 26.9 +02.3	S 14 51.0 +00.0	53 04.0 +02.4	S 19 10.0 -00.1	21						
22	164 12.7 +00.8	S 13 14.6 +00.5	52 29.2 +02.3	S 14 51.0 -00.1	68 06.4 +02.3	S 19 09.9 +00.0	22						
23	179 13.5 +00.9	S 13 15.1 +00.6	67 31.5 +02.3	S 14 50.9 +00.0	83 08.7 +02.3	S 19 09.9 +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	00'0 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	146° 146° 146° 146° 146° 146°		SHA	034° 034° 034° 034° 034° 034°		SHA	050° 050° 050° 050° 050° 050°						
Greenwich Culmination Time: 11:03			Greenwich Culmination Time: 18:30			Greenwich Culmination Time: 17:28							

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184 03.1 +00.0	S 16 51.3 +00.7	134 39.2 -00.1	S 27 13.0 -00.1	122 49.5 -37.7	S 26 14.4 -01.5	00						
01	199 03.1 -00.1	S 16 52.0 +00.7	149 39.1 -00.1	S 27 12.9 -00.1	137 11.8 -37.7	S 26 12.9 -01.6	01						
02	214 03.0 +00.0	S 16 52.7 +00.7	164 39.0 -00.2	S 27 12.8 +00.0	151 34.1 -37.6	S 26 11.3 -01.9	02						
03	229 03.0 -00.1	S 16 53.4 +00.8	179 38.8 -00.1	S 27 12.8 -00.1	165 56.5 -37.6	S 26 09.4 -02.0	03						
04	244 02.9 +00.0	S 16 54.2 +00.7	194 38.7 -00.1	S 27 12.7 +00.0	180 18.9 -37.5	S 26 07.4 -02.3	04						
05	259 02.9 -00.1	S 16 54.9 +00.7	209 38.6 -00.1	S 27 12.7 -00.1	194 41.4 -37.4	S 26 05.1 -02.4	05						
06	274 02.8 +00.0	S 16 55.6 +00.7	224 38.5 -00.1	S 27 12.6 -00.1	209 04.0 -37.3	S 26 02.7 -02.6	06						
07	289 02.8 -00.1	S 16 56.3 +00.7	239 38.4 -00.1	S 27 12.5 +00.0	223 26.7 -37.3	S 26 00.1 -02.7	07						
08	304 02.7 +00.0	S 16 57.0 +00.7	254 38.3 -00.1	S 27 12.5 -00.1	237 49.4 -37.1	S 25 57.4 -03.0	08						
09	319 02.7 -00.1	S 16 57.7 +00.7	269 38.2 -00.1	S 27 12.4 -00.1	252 12.3 -37.1	S 25 54.4 -03.1	09						
10	334 02.6 -00.1	S 16 58.4 +00.7	284 38.1 -00.1	S 27 12.3 +00.0	266 35.2 -37.1	S 25 51.3 -03.3	10						
11	349 02.5 +00.0	S 16 59.1 +00.7	299 38.0 -00.1	S 27 12.3 -00.1	280 58.1 -36.9	S 25 48.0 -03.4	11						
12	4 02.5 -00.1	S 16 59.8 +00.7	314 37.9 -00.1	S 27 12.2 -00.1	295 21.2 -36.9	S 25 44.6 -03.7	12						
13	19 02.4 +00.0	S 17 00.5 +00.8	329 37.8 -00.1	S 27 12.1 +00.0	309 44.3 -36.7	S 25 40.9 -03.8	13						
14	34 02.4 -00.1	S 17 01.3 +00.7	344 37.7 -00.2	S 27 12.1 -00.1	324 07.6 -36.7	S 25 37.1 -04.0	14						
15	49 02.3 +00.0	S 17 02.0 +00.7	359 37.5 -00.1	S 27 12.0 -00.1	338 30.9 -36.6	S 25 33.1 -04.1	15						
16	64 02.3 -00.1	S 17 02.7 +00.7	14 37.4 +00.0	S 27 11.9 +00.0	352 54.3 -36.5	S 25 29.0 -04.3	16						
17	79 02.2 -00.1	S 17 03.4 +00.7	29 37.4 -00.1	S 27 11.9 -00.1	7 17.8 -36.4	S 25 24.7 -04.5	17						
18	94 02.1 +00.0	S 17 04.1 +00.7	44 37.3 -00.1	S 27 11.8 -00.1	21 41.4 -36.3	S 25 20.2 -04.6	18						
19	109 02.1 -00.1	S 17 04.8 +00.7	59 37.2 -00.1	S 27 11.7 -00.1	36 05.1 -36.3	S 25 15.6 -04.8	19						
20	124 02.0 +00.0	S 17 05.5 +00.7	74 37.1 -00.1	S 27 11.6 +00.0	50 28.8 -36.1	S 25 10.8 -05.0	20						
21	139 02.0 -00.1	S 17 06.2 +00.7	89 37.0 -00.1	S 27 11.6 -00.1	64 52.7 -36.0	S 25 05.8 -05.1	21						
22	154 01.9 +00.0	S 17 06.9 +00.7	104 36.9 -00.1	S 27 11.5 -00.1	79 16.7 -35.9	S 25 00.7 -05.3	22						
23	169 01.9 -00.1	S 17 07.6 +00.7	119 36.8 -00.1	S 27 11.4 -00.1	93 40.8 -35.9	S 24 55.4 -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	16'1 16'1 16'1 16'1 16'1 16'1		SD	00'2 00'2 00'2 00'2 00'2 00'2		SD	16'3 16'2 16'2 16'2 16'1 16'1						
HP	00'1 00'1 00'1 00'1 00'1 00'1		HP	00'2 00'2 00'2 00'3 00'3 00'3		HP	59'7 59'6 59'5 59'4 59'2 59'1						
SHA	136° 135° 135° 135° 135° 135°		SHA	086° 086° 086° 086° 085° 085°		SHA	073° 070° 068° 065° 063° 060°						
Greenwich Culmination Time: 11:43			Greenwich Culmination Time: 15:01			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	194 14.4 +00.8	S 13 15.7 +00.6	82 33.8 +02.3	S 14 50.9 -00.1	98 11.0 +02.4	S 19 09.9 +00.0	00						
01	209 15.2 +00.8	S 13 16.3 +00.6	97 36.1 +02.3	S 14 50.8 -00.1	113 13.4 +02.3	S 19 09.9 -00.1	01						
02	224 16.0 +00.9	S 13 16.9 +00.5	112 38.4 +02.2	S 14 50.7 +00.0	128 15.7 +02.4	S 19 09.8 +00.0	02						
03	239 16.9 +00.8	S 13 17.4 +00.6	127 40.6 +02.3	S 14 50.7 -00.1	143 18.1 +02.3	S 19 09.8 +00.0	03						
04	254 17.7 +00.8	S 13 18.0 +00.6	142 42.9 +02.3	S 14 50.6 -00.1	158 20.4 +02.4	S 19 09.8 -00.1	04						
05	269 18.5 +00.8	S 13 18.6 +00.6	157 45.2 +02.3	S 14 50.5 +00.0	173 22.8 +02.3	S 19 09.7 +00.0	05						
06	284 19.3 +00.9	S 13 19.2 +00.6	172 47.5 +02.3	S 14 50.5 -00.1	188 25.1 +02.3	S 19 09.7 +00.0	06						
07	299 20.2 +00.8	S 13 19.8 +00.5	187 49.8 +02.3	S 14 50.4 -00.1	203 27.4 +02.4	S 19 09.7 -00.1	07						
08	314 21.0 +00.8	S 13 20.3 +00.6	202 52.1 +02.3	S 14 50.3 +00.0	218 29.8 +02.3	S 19 09.6 +00.0	08						
09	329 21.8 +00.9	S 13 20.9 +00.6	217 54.4 +02.3	S 14 50.3 -00.1	233 32.1 +02.4	S 19 09.6 +00.0	09						
10	344 22.7 +00.8	S 13 21.5 +00.6	232 56.7 +02.3	S 14 50.2 -00.1	248 34.5 +02.3	S 19 09.6 -00.1	10						
11	359 23.5 +00.8	S 13 22.1 +00.5	247 59.0 +02.3	S 14 50.1 +00.0	263 36.8 +02.3	S 19 09.5 +00.0	11						
12	14 24.3 +00.8	S 13 22.6 +00.6	263 01.3 +02.2	S 14 50.1 -00.1	278 39.1 +02.4	S 19 09.5 +00.0	12						
13	29 25.1 +00.9	S 13 23.2 +00.6	278 03.5 +02.3	S 14 50.0 -00.1	293 41.5 +02.3	S 19 09.5 -00.1	13						
14	44 26.0 +00.8	S 13 23.8 +00.6	293 05.8 +02.3	S 14 49.9 +00.0	308 43.8 +02.4	S 19 09.4 +00.0	14						
15	59 26.8 +00.8	S 13 24.4 +00.5	308 08.1 +02.3	S 14 49.9 -00.1	323 46.2 +02.3	S 19 09.4 +00.0	15						
16	74 27.6 +00.9	S 13 24.9 +00.6	323 10.4 +02.3	S 14 49.8 -00.1	338 48.5 +02.3	S 19 09.4 +00.0	16						
17	89 28.5 +00.8	S 13 25.5 +00.6	338 12.7 +02.3	S 14 49.7 +00.0	353 50.8 +02.4	S 19 09.4 -00.1	17						
18	104 29.3 +00.8	S 13 26.1 +00.6	353 15.0 +02.3	S 14 49.7 -00.1	8 53.2 +02.3	S 19 09.3 +00.0	18						
19	119 30.1 +00.8	S 13 26.7 +00.5	8 17.3 +02.3	S 14 49.6 -00.1	23 55.5 +02.4	S 19 09.3 +00.0	19						
20	134 30.9 +00.9	S 13 27.2 +00.6	23 19.6 +02.2	S 14 49.5 +00.0	38 57.9 +02.3	S 19 09.3 -00.1	20						
21	149 31.8 +00.8	S 13 27.8 +00.6	38 21.8 +02.3	S 14 49.5 -00.1	54 00.2 +02.3	S 19 09.2 +00.0	21						
22	164 32.6 +00.8	S 13 28.4 +00.6	53 24.1 +02.3	S 14 49.4 -00.1	69 02.5 +02.4	S 19 09.2 +00.0	22						
23	179 33.4 +00.8	S 13 29.0 +00.5	68 26.4 +02.3	S 14 49.3 +00.0	84 04.9 +02.3	S 19 09.2 -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	00'0 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	146° 146° 146° 145° 145° 145°		SHA	034° 034° 034° 034° 034° 034°		SHA	050° 050° 050° 050° 050° 050°						
Greenwich Culmination Time: 11:02			Greenwich Culmination Time: 18:26			Greenwich Culmination Time: 17:24							

UT	Sun				Venus				Moon				UT	
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec		
00	184 01.8 -00.1	S 17 08.3 +00.7	134 36.7 -00.1	S 27 11.3 +00.0	108 04.9 -35.7	S 24 49.9 -05.6	00							
01	199 01.7 +00.0	S 17 09.0 +00.7	149 36.6 -00.1	S 27 11.3 -00.1	122 29.2 -35.6	S 24 44.3 -05.7	01							
02	214 01.7 -00.1	S 17 09.7 +00.7	164 36.5 -00.1	S 27 11.2 -00.1	136 53.6 -35.5	S 24 38.6 -05.9	02							
03	229 01.6 +00.0	S 17 10.4 +00.7	179 36.4 -00.1	S 27 11.1 -00.1	151 18.1 -35.4	S 24 32.7 -06.1	03							
04	244 01.6 -00.1	S 17 11.1 +00.7	194 36.3 +00.0	S 27 11.0 -00.1	165 42.7 -35.3	S 24 26.6 -06.2	04							
05	259 01.5 -00.1	S 17 11.8 +00.7	209 36.3 -00.1	S 27 10.9 +00.0	180 07.4 -35.2	S 24 20.4 -06.3	05							
06	274 01.4 +00.0	S 17 12.5 +00.7	224 36.2 -00.1	S 27 10.9 -00.1	194 32.2 -35.1	S 24 14.1 -06.5	06							
07	289 01.4 -00.1	S 17 13.2 +00.7	239 36.1 -00.1	S 27 10.8 -00.1	208 57.1 -35.0	S 24 07.6 -06.7	07							
08	304 01.3 -00.1	S 17 13.9 +00.7	254 36.0 -00.1	S 27 10.7 -00.1	223 22.1 -34.9	S 24 00.9 -06.8	08							
09	319 01.2 +00.0	S 17 14.6 +00.7	269 35.9 +00.0	S 27 10.6 -00.1	237 47.2 -34.8	S 23 54.1 -06.9	09							
10	334 01.2 -00.1	S 17 15.3 +00.7	284 35.9 -00.1	S 27 10.5 -00.1	252 12.4 -34.6	S 23 47.2 -07.0	10							
11	349 01.1 -00.1	S 17 16.0 +00.7	299 35.8 -00.1	S 27 10.4 -00.1	266 37.8 -34.5	S 23 40.2 -07.3	11							
12	4 01.0 +00.0	S 17 16.7 +00.7	314 35.7 -00.1	S 27 10.3 -00.1	281 03.3 -34.5	S 23 32.9 -07.3	12							
13	19 01.0 -00.1	S 17 17.4 +00.7	329 35.6 +00.0	S 27 10.2 -00.1	295 28.8 -34.3	S 23 25.6 -07.5	13							
14	34 00.9 +00.0	S 17 18.1 +00.7	344 35.6 -00.1	S 27 10.1 +00.0	309 54.5 -34.2	S 23 18.1 -07.6	14							
15	49 00.9 -00.1	S 17 18.8 +00.7	359 35.5 -00.1	S 27 10.1 -00.1	324 20.3 -34.1	S 23 10.5 -07.7	15							
16	64 00.8 -00.1	S 17 19.5 +00.7	14 35.4 -00.1	S 27 10.0 -00.1	338 46.2 -33.9	S 23 02.8 -07.9	16							
17	79 00.7 +00.0	S 17 20.2 +00.7	29 35.3 +00.0	S 27 09.9 -00.1	353 12.3 -33.9	S 22 54.9 -08.0	17							
18	94 00.7 -00.1	S 17 20.9 +00.7	44 35.3 -00.1	S 27 09.8 -00.1	7 38.4 -33.7	S 22 46.9 -08.1	18							
19	109 00.6 -00.1	S 17 21.6 +00.7	59 35.2 -00.1	S 27 09.7 -00.1	22 04.7 -33.7	S 22 38.8 -08.3	19							
20	124 00.5 +00.0	S 17 22.3 +00.6	74 35.1 +00.0	S 27 09.6 -00.1	36 31.0 -33.5	S 22 30.5 -08.4	20							
21	139 00.5 -00.1	S 17 22.9 +00.7	89 35.1 -00.1	S 27 09.5 -00.1	50 57.5 -33.4	S 22 22.1 -08.5	21							
22	154 00.4 -00.1	S 17 23.6 +00.7	104 35.0 +00.0	S 27 09.4 -00.1	65 24.1 -33.3	S 22 13.6 -08.6	22							
23	169 00.3 -00.1	S 17 24.3 +00.7	119 35.0 -00.1	S 27 09.3 -00.1	79 50.8 -33.1	S 22 05.0 -08.7	23							
UT 02 06 10 14 18 22	SD 16'1 16'2 16'2 16'2 16'2 16'2	HP 00'1 00'1 00'1 00'1 00'1 00'1	SHA 135° 134° 134° 134° 134° 134°	Greenwich Culmination Time: 11:43	UT 02 06 10 14 18 22	SD 00'2 00'2 00'2 00'2 00'2 00'2	HP 00'3 00'3 00'3 00'3 00'3 00'3	SHA 085° 085° 085° 085° 084° 084°	Greenwich Culmination Time: 15:01	UT 02 06 10 14 18 22	SD 16'1 16'0 16'0 16'0 15'9 15'9	HP 59'0 58'8 58'7 58'6 58'4 58'3	SHA 057° 055° 052° 050° 048° 045°	Greenwich Culmination Time: 17:28

UT	Mars				Jupiter				Saturn				UT	
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec		
00	194 34.2 +00.9	S 13 29.5 +00.6	83 28.7 +02.3	S 14 49.3 -00.1	99 07.2 +02.4	S 19 09.1 +00.0	00							
01	209 35.1 +00.8	S 13 30.1 +00.6	98 31.0 +02.3	S 14 49.2 -00.1	114 09.6 +02.3	S 19 09.1 +00.0	01							
02	224 35.9 +00.8	S 13 30.7 +00.6	113 33.3 +02.2	S 14 49.1 +00.0	129 11.9 +02.3	S 19 09.1 -00.1	02							
03	239 36.7 +00.8	S 13 31.3 +00.5	128 35.5 +02.3	S 14 49.1 -00.1	144 14.2 +02.4	S 19 09.0 +00.0	03							
04	254 37.5 +00.9	S 13 31.8 +00.6	143 37.8 +02.3	S 14 49.0 -00.1	159 16.6 +02.3	S 19 09.0 +00.0	04							
05	269 38.4 +00.8	S 13 32.4 +00.6	158 40.1 +02.3	S 14 48.9 +00.0	174 18.9 +02.4	S 19 09.0 -00.1	05							
06	284 39.2 +00.8	S 13 33.0 +00.6	173 42.4 +02.3	S 14 48.9 -00.1	189 21.3 +02.3	S 19 08.9 +00.0	06							
07	299 40.0 +00.8	S 13 33.6 +00.5	188 44.7 +02.3	S 14 48.8 -00.1	204 23.6 +02.3	S 19 08.9 +00.0	07							
08	314 40.8 +00.9	S 13 34.1 +00.6	203 47.0 +02.2	S 14 48.7 +00.0	219 25.9 +02.4	S 19 08.9 -00.1	08							
09	329 41.7 +00.8	S 13 34.7 +00.6	218 49.2 +02.3	S 14 48.7 -00.1	234 28.3 +02.3	S 19 08.8 +00.0	09							
10	344 42.5 +00.8	S 13 35.3 +00.5	233 51.5 +02.3	S 14 48.6 -00.1	249 30.6 +02.3	S 19 08.8 +00.0	10							
11	359 43.3 +00.8	S 13 35.8 +00.6	248 53.8 +02.3	S 14 48.5 +00.0	264 32.9 +02.4	S 19 08.8 +00.0	11							
12	14 44.1 +00.9	S 13 36.4 +00.6	263 56.1 +02.3	S 14 48.5 -00.1	279 35.3 +02.3	S 19 08.8 -00.1	12							
13	29 45.0 +00.8	S 13 37.0 +00.6	278 58.4 +02.2	S 14 48.4 -00.1	294 37.6 +02.3	S 19 08.7 +00.0	13							
14	44 45.8 +00.8	S 13 37.6 +00.5	294 00.6 +02.3	S 14 48.3 +00.0	309 39.9 +02.4	S 19 08.7 +00.0	14							
15	59 46.6 +00.8	S 13 38.1 +00.6	309 02.9 +02.3	S 14 48.3 -00.1	324 42.3 +02.3	S 19 08.7 -00.1	15							
16	74 47.4 +00.8	S 13 38.7 +00.6	324 05.2 +02.3	S 14 48.2 -00.1	339 44.6 +02.4	S 19 08.6 +00.0	16							
17	89 48.2 +00.9	S 13 39.3 +00.5	339 07.5 +02.3	S 14 48.1 +00.0	354 47.0 +02.3	S 19 08.6 +00.0	17							
18	104 49.1 +00.8	S 13 39.8 +00.6	354 09.8 +02.2	S 14 48.1 -00.1	9 49.3 +02.3	S 19 08.6 -00.1	18							
19	119 49.9 +00.8	S 13 40.4 +00.6	9 12.0 +02.3	S 14 48.0 -00.1	24 51.6 +02.4	S 19 08.5 +00.0	19							
20	134 50.7 +00.8	S 13 41.0 +00.6	24 14.3 +02.3	S 14 47.9 +00.0	39 54.0 +02.3	S 19 08.5 +00.0	20							
21	149 51.5 +00.8	S 13 41.6 +00.5	39 16.6 +02.3	S 14 47.9 -00.1	54 56.3 +02.3	S 19 08.5 -00.1	21							
22	164 52.3 +00.9	S 13 42.1 +00.6	54 18.9 +02.3	S 14 47.8 -00.1	69 58.6 +02.4	S 19 08.4 +00.0	22							
23	179 53.2 +00.8	S 13 42.7 +00.6	69 21.2 +02.2	S 14 47.7 +00.0	85 01.0 +02.3	S 19 08.4 +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 145° 145° 145° 145° 145° 145°	Greenwich Culmination Time: 11:01	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 034° 034° 034° 034° 034° 034°	Greenwich Culmination Time: 18:23	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° 050° 050° 050° 050°	Greenwich Culmination Time: 17:20

UT	Sun				Venus				Moon				UT	
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec		
00	184 00.2 +00.0	S 17 25.0 +00.7	134 34.9 -00.1	S 27 09.2 -00.1	94 17.7 -33.1	S 21 56.3 -08.9	00							
01	199 00.2 -00.1	S 17 25.7 +00.7	149 34.8 +00.0	S 27 09.1 -00.1	108 44.6 -32.9	S 21 47.4 -09.0	01							
02	214 00.1 -00.1	S 17 26.4 +00.7	164 34.8 -00.1	S 27 09.0 -00.1	123 11.7 -32.9	S 21 38.4 -09.1	02							
03	229 00.0 +00.0	S 17 27.1 +00.7	179 34.7 +00.0	S 27 08.9 -00.1	137 38.8 -32.7	S 21 29.3 -09.2	03							
04	243 60.0 -00.1	S 17 27.8 +00.7	194 34.7 -00.1	S 27 08.8 -00.1	152 06.1 -32.6	S 21 20.1 -09.3	04							
05	258 59.9 -00.1	S 17 28.5 +00.6	209 34.6 +00.0	S 27 08.7 -00.1	166 33.5 -32.4	S 21 10.8 -09.4	05							
06	273 59.8 +00.0	S 17 29.1 +00.7	224 34.6 -00.1	S 27 08.6 -00.2	181 01.1 -32.4	S 21 01.4 -09.5	06							
07	288 59.8 -00.1	S 17 29.8 +00.7	239 34.5 +00.0	S 27 08.4 -00.1	195 28.7 -32.3	S 20 51.9 -09.6	07							
08	303 59.7 -00.1	S 17 30.5 +00.7	254 34.5 -00.1	S 27 08.3 -00.1	209 56.4 -32.1	S 20 42.3 -09.8	08							
09	318 59.6 -00.1	S 17 31.2 +00.7	269 34.4 +00.0	S 27 08.2 -00.1	224 24.3 -32.0	S 20 32.5 -09.8	09							
10	333 59.5 +00.0	S 17 31.9 +00.7	284 34.4 -00.1	S 27 08.1 -00.1	238 52.3 -31.9	S 20 22.7 -10.0	10							
11	348 59.5 -00.1	S 17 32.6 +00.7	299 34.3 +00.0	S 27 08.0 -00.1	253 20.4 -31.8	S 20 12.7 -10.0	11							
12	3 59.4 -00.1	S 17 33.3 +00.6	314 34.3 -00.1	S 27 07.9 -00.1	267 48.6 -31.7	S 20 02.7 -10.1	12							
13	18 59.3 +00.0	S 17 33.9 +00.7	329 34.2 +00.0	S 27 07.8 -00.1	282 16.9 -31.6	S 19 52.6 -10.3	13							
14	33 59.3 -00.1	S 17 34.6 +00.7	344 34.2 -00.1	S 27 07.7 -00.2	296 45.3 -31.4	S 19 42.3 -10.3	14							
15	48 59.2 -00.1	S 17 35.3 +00.7	359 34.1 +00.0	S 27 07.5 -00.1	311 13.9 -31.4	S 19 32.0 -10.4	15							
16	63 59.1 -00.1	S 17 36.0 +00.7	14 34.1 +00.0	S 27 07.4 -00.1	325 42.5 -31.2	S 19 21.6 -10.5	16							
17	78 59.0 +00.0	S 17 36.7 +00.7	29 34.1 -00.1	S 27 07.3 -00.1	340 11.3 -31.1	S 19 11.1 -10.6	17							
18	93 59.0 -00.1	S 17 37.4 +00.6	44 34.0 +00.0	S 27 07.2 -00.1	354 40.2 -31.1	S 19 00.5 -10.7	18							
19	108 58.9 -00.1	S 17 38.0 +00.7	59 34.0 -00.1	S 27 07.1 -00.1	9 09.1 -30.9	S 18 49.8 -10.8	19							
20	123 58.8 -00.1	S 17 38.7 +00.7	74 33.9 +00.0	S 27 07.0 -00.2	23 38.2 -30.8	S 18 39.0 -10.9	20							
21	138 58.7 -00.1	S 17 39.4 +00.7	89 33.9 +00.0	S 27 06.8 -00.1	38 07.4 -30.7	S 18 28.1 -10.9	21							
22	153 58.6 +00.0	S 17 40.1 +00.6	104 33.9 -00.1	S 27 06.7 -00.1	52 36.7 -30.6	S 18 17.2 -11.1	22							
23	168 58.6 -00.1	S 17 40.7 +00.7	119 33.8 +00.0	S 27 06.6 -00.1	67 06.1 -30.4	S 18 06.1 -11.1	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 134° 133° 133° 133° 133° 133°	Greenwich Culmination Time: 11:44	UT 02 06 10 14 18 22	SD 00'2 00'2 00'2 00'2 00'2 00'2	HP 00'3 00'3 00'3 00'3 00'3 00'3	SHA 084° 084° 084° 084° 083° 083°	Greenwich Culmination Time: 15:01	UT 02 06 10 14 18 22	SD 15'8 15'8 15'8 15'7 15'7 15'7	HP 58'2 58'0 57'9 57'8 57'6 57'5	SHA 043° 040° 038° 036° 034° 031°	Greenwich Culmination Time: 18:22

UT	Mars				Jupiter				Saturn				UT	
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec		
00	194 54.0 +00.8	S 13 43.3 +00.5	84 23.4 +02.3	S 14 47.7 -00.1	100 03.3 +02.3	S 19 08.4 -00.1	00							
01	209 54.8 +00.8	S 13 43.8 +00.6	99 25.7 +02.3	S 14 47.6 -00.1	115 05.6 +02.4	S 19 08.3 +00.0	01							
02	224 55.6 +00.9	S 13 44.4 +00.6	114 28.0 +02.3	S 14 47.5 -00.1	130 08.0 +02.3	S 19 08.3 +00.0	02							
03	239 56.5 +00.8	S 13 45.0 +00.5	129 30.3 +02.2	S 14 47.4 +00.0	145 10.3 +02.3	S 19 08.3 -00.1	03							
04	254 57.3 +00.8	S 13 45.5 +00.6	144 32.5 +02.3	S 14 47.4 -00.1	160 12.6 +02.4	S 19 08.2 +00.0	04							
05	269 58.1 +00.8	S 13 46.1 +00.6	159 34.8 +02.3	S 14 47.3 -00.1	175 15.0 +02.3	S 19 08.2 +00.0	05							
06	284 58.9 +00.8	S 13 46.7 +00.6	174 37.1 +02.3	S 14 47.2 +00.0	190 17.3 +02.3	S 19 08.2 -00.1	06							
07	299 59.7 +00.9	S 13 47.3 +00.5	189 39.4 +02.2	S 14 47.2 -00.1	205 19.6 +02.4	S 19 08.1 +00.0	07							
08	315 00.6 +00.8	S 13 47.8 +00.6	204 41.6 +02.3	S 14 47.1 -00.1	220 22.0 +02.3	S 19 08.1 +00.0	08							
09	330 01.4 +00.8	S 13 48.4 +00.6	219 43.9 +02.3	S 14 47.0 +00.0	235 24.3 +02.3	S 19 08.1 -00.1	09							
10	345 02.2 +00.8	S 13 49.0 +00.5	234 46.2 +02.3	S 14 47.0 -00.1	250 26.6 +02.4	S 19 08.0 +00.0	10							
11	0 03.0 +00.8	S 13 49.5 +00.6	249 48.5 +02.2	S 14 46.9 -00.1	265 29.0 +02.3	S 19 08.0 +00.0	11							
12	15 03.8 +00.8	S 13 50.1 +00.6	264 50.7 +02.3	S 14 46.8 -00.1	280 31.3 +02.3	S 19 08.0 -00.1	12							
13	30 04.6 +00.9	S 13 50.7 +00.5	279 53.0 +02.3	S 14 46.7 +00.0	295 33.6 +02.4	S 19 07.9 +00.0	13							
14	45 05.5 +00.8	S 13 51.2 +00.6	294 55.3 +02.3	S 14 46.7 -00.1	310 36.0 +02.3	S 19 07.9 +00.0	14							
15	60 06.3 +00.8	S 13 51.8 +00.6	309 57.6 +02.2	S 14 46.6 -00.1	325 38.3 +02.3	S 19 07.9 -00.1	15							
16	75 07.1 +00.8	S 13 52.4 +00.5	324 59.8 +02.3	S 14 46.5 +00.0	340 40.6 +02.4	S 19 07.8 +00.0	16							
17	90 07.9 +00.8	S 13 52.9 +00.6	340 02.1 +02.3	S 14 46.5 -00.1	355 43.0 +02.3	S 19 07.8 +00.0	17							
18	105 08.7 +00.9	S 13 53.5 +00.6	355 04.4 +02.2	S 14 46.4 -00.1	10 45.3 +02.3	S 19 07.8 -00.1	18							
19	120 09.6 +00.8	S 13 54.1 +00.5	10 06.6 +02.3	S 14 46.3 -00.1	25 47.6 +02.4	S 19 07.7 +00.0	19							
20	135 10.4 +00.8	S 13 54.6 +00.6	25 08.9 +02.3	S 14 46.2 +00.0	40 50.0 +02.3	S 19 07.7 +00.0	20							
21	150 11.2 +00.8	S 13 55.2 +00.6	40 11.2 +02.3	S 14 46.2 -00.1	55 52.3 +02.3	S 19 07.7 -00.1	21							
22	165 12.0 +00.8	S 13 55.8 +00.5	55 13.5 +02.2	S 14 46.1 -00.1	70 54.6 +02.4	S 19 07.6 +00.0	22							
23	180 12.8 +00.8	S 13 56.3 +00.6	70 15.7 +02.3	S 14 46.0 +00.0	85 57.0 +02.3	S 19 07.6 +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 144° 144° 144° 144° 144° 144°	Greenwich Culmination Time: 10:59	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 034° 034° 034° 034° 034° 034°	Greenwich Culmination Time: 18:19	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° 050° 050° 050° 050°	Greenwich Culmination Time: 17:17

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 58.5 -00.1	S	17 41.4 +00.7	134 33.8 +00.0	S	27 06.5 -00.2	81 35.7 -30.4	S	17 55.0 -11.2	00			
01	198 58.4 -00.1	S	17 42.1 +00.7	149 33.8 +00.0	S	27 06.3 -00.1	96 05.3 -30.3	S	17 43.8 -11.3	01			
02	213 58.3 +00.0	S	17 42.8 +00.7	164 33.8 -00.1	S	27 06.2 -00.1	110 35.0 -30.2	S	17 32.5 -11.3	02			
03	228 58.3 -00.1	S	17 43.5 +00.6	179 33.7 +00.0	S	27 06.1 -00.1	125 04.8 -30.0	S	17 21.2 -11.4	03			
04	243 58.2 -00.1	S	17 44.1 +00.7	194 33.7 +00.0	S	27 06.0 -00.2	139 34.8 -30.0	S	17 09.8 -11.5	04			
05	258 58.1 -00.1	S	17 44.8 +00.7	209 33.7 +00.0	S	27 05.8 -00.1	154 04.8 -29.8	S	16 58.3 -11.6	05			
06	273 58.0 -00.1	S	17 45.5 +00.7	224 33.7 -00.1	S	27 05.7 -00.1	168 35.0 -29.8	S	16 46.7 -11.6	06			
07	288 57.9 +00.0	S	17 46.2 +00.6	239 33.6 +00.0	S	27 05.6 -00.2	183 05.2 -29.7	S	16 35.1 -11.8	07			
08	303 57.9 -00.1	S	17 46.8 +00.7	254 33.6 +00.0	S	27 05.4 -00.1	197 35.5 -29.5	S	16 23.3 -11.7	08			
09	318 57.8 -00.1	S	17 47.5 +00.7	269 33.6 +00.0	S	27 05.3 -00.1	212 06.0 -29.5	S	16 11.6 -11.9	09			
10	333 57.7 -00.1	S	17 48.2 +00.6	284 33.6 +00.0	S	27 05.2 -00.2	226 36.5 -29.4	S	15 59.7 -11.9	10			
11	348 57.6 -00.1	S	17 48.8 +00.7	299 33.6 +00.0	S	27 05.0 -00.1	241 07.1 -29.2	S	15 47.8 -12.0	11			
12	3 57.5 +00.0	S	17 49.5 +00.7	314 33.6 +00.0	S	27 04.9 -00.1	255 37.9 -29.2	S	15 35.8 -12.0	12			
13	18 57.5 -00.1	S	17 50.2 +00.7	329 33.6 -00.1	S	27 04.8 -00.2	270 08.7 -29.1	S	15 23.8 -12.1	13			
14	33 57.4 -00.1	S	17 50.9 +00.6	344 33.5 +00.0	S	27 04.6 -00.1	284 39.6 -29.0	S	15 11.7 -12.2	14			
15	48 57.3 -00.1	S	17 51.5 +00.7	359 33.5 +00.0	S	27 04.5 -00.1	299 10.6 -28.9	S	14 59.5 -12.2	15			
16	63 57.2 -00.1	S	17 52.2 +00.7	14 33.5 +00.0	S	27 04.4 -00.2	313 41.7 -28.8	S	14 47.3 -12.3	16			
17	78 57.1 -00.1	S	17 52.9 +00.6	29 33.5 +00.0	S	27 04.2 -00.1	328 12.9 -28.7	S	14 35.0 -12.3	17			
18	93 57.0 +00.0	S	17 53.5 +00.7	44 33.5 +00.0	S	27 04.1 -00.2	342 44.2 -28.7	S	14 22.7 -12.4	18			
19	108 57.0 -00.1	S	17 54.2 +00.7	59 33.5 +00.0	S	27 03.9 -00.1	357 15.5 -28.5	S	14 10.3 -12.5	19			
20	123 56.9 -00.1	S	17 54.9 +00.6	74 33.5 +00.0	S	27 03.8 -00.1	11 47.0 -28.5	S	13 57.8 -12.5	20			
21	138 56.8 -00.1	S	17 55.5 +00.7	89 33.5 +00.0	S	27 03.7 -00.2	26 18.5 -28.3	S	13 45.3 -12.5	21			
22	153 56.7 -00.1	S	17 56.2 +00.7	104 33.5 +00.0	S	27 03.5 -00.1	40 50.2 -28.3	S	13 32.8 -12.6	22			
23	168 56.6 -00.1	S	17 56.9 +00.6	119 33.5 +00.0	S	27 03.4 -00.2	55 21.9 -28.2	S	13 20.2 -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 00'2 00'2 00'2 00'2 00'2 00'2				SD 15'6 15'6 15'6 15'5 15'5 15'5					
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'3 00'3 00'3 00'3 00'3 00'3				HP 57'4 57'2 57'1 57'0 56'9 56'8					
	SHA 133° 132° 132° 132° 132° 132°			SHA 083° 083° 083° 083° 082° 082°				SHA 029° 027° 025° 023° 021° 019°					
	Greenwich Culmination Time: 11:44			Greenwich Culmination Time: 15:01				Greenwich Culmination Time: 19:11					

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	195 13.6 +00.9	S	13 56.9 +00.6	85 18.0 +02.3	S	14 46.0 -00.1	100 59.3 +02.3	S	19 07.6 -00.1	00			
01	210 14.5 +00.8	S	13 57.5 +00.5	100 20.3 +02.2	S	14 45.9 -00.1	116 01.6 +02.4	S	19 07.5 +00.0	01			
02	225 15.3 +00.8	S	13 58.0 +00.6	115 22.5 +02.3	S	14 45.8 -00.1	131 04.0 +02.3	S	19 07.5 +00.0	02			
03	240 16.1 +00.8	S	13 58.6 +00.6	130 24.8 +02.3	S	14 45.7 +00.0	146 06.3 +02.3	S	19 07.5 -00.1	03			
04	255 16.9 +00.8	S	13 59.2 +00.5	145 27.1 +02.2	S	14 45.7 -00.1	161 08.6 +02.3	S	19 07.4 +00.0	04			
05	270 17.7 +00.8	S	13 59.7 +00.6	160 29.3 +02.3	S	14 45.6 -00.1	176 10.9 +02.4	S	19 07.4 +00.0	05			
06	285 18.5 +00.8	S	14 00.3 +00.6	175 31.6 +02.3	S	14 45.5 +00.0	191 13.3 +02.3	S	19 07.4 -00.1	06			
07	300 19.3 +00.9	S	14 00.9 +00.5	190 33.9 +02.2	S	14 45.5 -00.1	206 15.6 +02.3	S	19 07.3 +00.0	07			
08	315 20.2 +00.8	S	14 01.4 +00.6	205 36.1 +02.3	S	14 45.4 -00.1	221 17.9 +02.4	S	19 07.3 +00.0	08			
09	330 21.0 +00.8	S	14 02.0 +00.6	220 38.4 +02.3	S	14 45.3 -00.1	236 20.3 +02.3	S	19 07.3 -00.1	09			
10	345 21.8 +00.8	S	14 02.6 +00.5	235 40.7 +02.2	S	14 45.2 +00.0	251 22.6 +02.3	S	19 07.2 +00.0	10			
11	0 22.6 +00.8	S	14 03.1 +00.6	250 42.9 +02.3	S	14 45.2 -00.1	266 24.9 +02.4	S	19 07.2 +00.0	11			
12	15 23.4 +00.8	S	14 03.7 +00.5	265 45.2 +02.3	S	14 45.1 -00.1	281 27.3 +02.3	S	19 07.2 -00.1	12			
13	30 24.2 +00.8	S	14 04.2 +00.6	280 47.5 +02.2	S	14 45.0 -00.1	296 29.6 +02.3	S	19 07.1 +00.0	13			
14	45 25.0 +00.9	S	14 04.8 +00.6	295 49.7 +02.3	S	14 44.9 +00.0	311 31.9 +02.3	S	19 07.1 +00.0	14			
15	60 25.9 +00.8	S	14 05.4 +00.5	310 52.0 +02.3	S	14 44.9 -00.1	326 34.2 +02.4	S	19 07.1 -00.1	15			
16	75 26.7 +00.8	S	14 05.9 +00.6	325 54.3 +02.2	S	14 44.8 -00.1	341 36.6 +02.3	S	19 07.0 +00.0	16			
17	90 27.5 +00.8	S	14 06.5 +00.6	340 56.5 +02.3	S	14 44.7 -00.1	356 38.9 +02.3	S	19 07.0 +00.0	17			
18	105 28.3 +00.8	S	14 07.1 +00.5	355 58.8 +02.3	S	14 44.6 +00.0	11 41.2 +02.4	S	19 07.0 -00.1	18			
19	120 29.1 +00.8	S	14 07.6 +00.6	11 01.1 +02.2	S	14 44.6 -00.1	26 43.6 +02.3	S	19 06.9 +00.0	19			
20	135 29.9 +00.8	S	14 08.2 +00.6	26 03.3 +02.3	S	14 44.5 -00.1	41 45.9 +02.3	S	19 06.9 -00.1	20			
21	150 30.7 +00.8	S	14 08.8 +00.5	41 05.6 +02.3	S	14 44.4 +00.0	56 48.2 +02.3	S	19 06.8 +00.0	21			
22	165 31.5 +00.9	S	14 09.3 +00.6	56 07.9 +02.2	S	14 44.4 -00.1	71 50.5 +02.4	S	19 06.8 +00.0	22			
23	180 32.4 +00.8	S	14 09.9 +00.5	71 10.1 +02.3	S	14 44.3 -00.1	86 52.9 +02.3	S	19 06.8 -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 00'0 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 144° 144° 144° 143° 143° 143°			SHA 034° 034° 034° 034° 034° 034°				SHA 050° 050° 050° 050° 050° 050°					
	Greenwich Culmination Time: 10:58			Greenwich Culmination Time: 18:16				Greenwich Culmination Time: 17:13					

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 56.5 -00.1	S	17 57.5 +00.7	134 33.5 +00.0	S	27 03.2 -00.1	69 53.7 -28.1	S	13 07.5 -12.7	00			
01	198 56.4 +00.0	S	17 58.2 +00.7	149 33.5 +00.0	S	27 03.1 -00.2	84 25.6 -28.1	S	12 54.8 -12.7	01			
02	213 56.4 -00.1	S	17 58.9 +00.6	164 33.5 +00.0	S	27 02.9 -00.1	98 57.5 -27.9	S	12 42.1 -12.8	02			
03	228 56.3 -00.1	S	17 59.5 +00.7	179 33.5 +00.0	S	27 02.8 -00.2	113 29.6 -27.9	S	12 29.3 -12.9	03			
04	243 56.2 -00.1	S	18 00.2 +00.6	194 33.5 +00.1	S	27 02.6 -00.1	128 01.7 -27.8	S	12 16.4 -12.9	04			
05	258 56.1 -00.1	S	18 00.8 +00.7	209 33.6 +00.0	S	27 02.5 -00.2	142 33.9 -27.7	S	12 03.5 -12.9	05			
06	273 56.0 -00.1	S	18 01.5 +00.7	224 33.6 +00.0	S	27 02.3 -00.1	157 06.2 -27.7	S	11 50.6 -12.9	06			
07	288 55.9 -00.1	S	18 02.2 +00.6	239 33.6 +00.0	S	27 02.2 -00.2	171 38.5 -27.6	S	11 37.7 -13.1	07			
08	303 55.8 -00.1	S	18 02.8 +00.7	254 33.6 +00.0	S	27 02.0 -00.1	186 10.9 -27.5	S	11 24.6 -13.0	08			
09	318 55.7 +00.0	S	18 03.5 +00.6	269 33.6 +00.0	S	27 01.9 -00.2	200 43.4 -27.4	S	11 11.6 -13.1	09			
10	333 55.7 -00.1	S	18 04.1 +00.7	284 33.6 +00.0	S	27 01.7 -00.1	215 16.0 -27.3	S	10 58.5 -13.1	10			
11	348 55.6 -00.1	S	18 04.8 +00.7	299 33.6 +00.1	S	27 01.6 -00.2	229 48.7 -27.3	S	10 45.4 -13.1	11			
12	3 55.5 -00.1	S	18 05.5 +00.6	314 33.7 +00.0	S	27 01.4 -00.1	244 21.4 -27.2	S	10 32.3 -13.2	12			
13	18 55.4 -00.1	S	18 06.1 +00.7	329 33.7 +00.0	S	27 01.3 -00.2	258 54.2 -27.2	S	10 19.1 -13.3	13			
14	33 55.3 -00.1	S	18 06.8 +00.6	344 33.7 +00.0	S	27 01.1 -00.2	273 27.0 -27.1	S	10 05.8 -13.2	14			
15	48 55.2 -00.1	S	18 07.4 +00.7	359 33.7 +00.1	S	27 00.9 -00.1	287 59.9 -27.0	S	09 52.6 -13.3	15			
16	63 55.1 -00.1	S	18 08.1 +00.6	14 33.8 +00.0	S	27 00.8 -00.2	302 32.9 -26.9	S	09 39.3 -13.3	16			
17	78 55.0 -00.1	S	18 08.7 +00.7	29 33.8 +00.0	S	27 00.6 -00.2	317 06.0 -26.9	S	09 26.0 -13.3	17			
18	93 54.9 -00.1	S	18 09.4 +00.6	44 33.8 +00.0	S	27 00.4 -00.1	331 39.1 -26.8	S	09 12.7 -13.4	18			
19	108 54.8 -00.1	S	18 10.0 +00.7	59 33.8 +00.1	S	27 00.3 -00.2	346 12.3 -26.8	S	08 59.3 -13.4	19			
20	123 54.7 +00.0	S	18 10.7 +00.7	74 33.9 +00.0	S	27 00.1 -00.1	0 45.5 -26.7	S	08 45.9 -13.4	20			
21	138 54.7 -00.1	S	18 11.4 +00.6	89 33.9 +00.0	S	26 60.0 -00.2	15 18.8 -26.7	S	08 32.5 -13.5	21			
22	153 54.6 -00.1	S	18 12.0 +00.7	104 33.9 +00.1	S	26 59.8 -00.2	29 52.1 -26.5	S	08 19.0 -13.5	22			
23	168 54.5 -00.1	S	18 12.7 +00.6	119 34.0 +00.0	S	26 59.6 -00.1	44 25.6 -26.6	S	08 05.5 -13.5	23			
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		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 00'2 00'2 00'2 00'3 00'3 00'3		SD 15'4 15'4 15'4 15'3 15'3 15'3		SD 00'1 00'1 00'1 00'1 00'1 00'1		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		HP 00'3 00'3 00'3 00'3 00'3 00'3		HP 56'6 56'5 56'4 56'3 56'2 56'1		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 132° 131° 131° 131° 131° 131°		SHA 082° 082° 082° 082° 081° 081°		SHA 017° 015° 013° 011° 009° 007°		SHA 143° 143° 143° 143° 143° 143°		SHA 050° 050° 050° 050° 050° 050°				
	Greenwich Culmination Time: 11:44		Greenwich Culmination Time: 15:01		Greenwich Culmination Time: 19:56		Greenwich Culmination Time: 10:57		Greenwich Culmination Time: 17:09				

UT	Sun				Venus				Moon A: 36%				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 54.4 -00.1	S 18 13.3 +00.7	134 34.0 +00.1	S 26 59.5 -00.2	58 59.0 -26.4	S 07 52.0 -13.5	00						
01	198 54.3 -00.1	S 18 14.0 +00.6	149 34.1 +00.0	S 26 59.3 -00.2	73 32.6 -26.5	S 07 38.5 -13.5	01						
02	213 54.2 -00.1	S 18 14.6 +00.7	164 34.1 +00.0	S 26 59.1 -00.1	88 06.1 -26.3	S 07 25.0 -13.6	02						
03	228 54.1 -00.1	S 18 15.3 +00.6	179 34.1 +00.1	S 26 59.0 -00.2	102 39.8 -26.4	S 07 11.4 -13.5	03						
04	243 54.0 -00.1	S 18 15.9 +00.7	194 34.2 +00.0	S 26 58.8 -00.2	117 13.4 -26.2	S 06 57.9 -13.6	04						
05	258 53.9 -00.1	S 18 16.6 +00.6	209 34.2 +00.1	S 26 58.6 -00.2	131 47.2 -26.2	S 06 44.3 -13.7	05						
06	273 53.8 -00.1	S 18 17.2 +00.7	224 34.3 +00.0	S 26 58.4 -00.1	146 21.0 -26.2	S 06 30.6 -13.6	06						
07	288 53.7 -00.1	S 18 17.9 +00.6	239 34.3 +00.1	S 26 58.3 -00.2	160 54.8 -26.1	S 06 17.0 -13.6	07						
08	303 53.6 -00.1	S 18 18.5 +00.6	254 34.4 +00.0	S 26 58.1 -00.2	175 28.7 -26.1	S 06 03.4 -13.7	08						
09	318 53.5 -00.1	S 18 19.1 +00.7	269 34.4 +00.1	S 26 57.9 -00.2	190 02.6 -26.0	S 05 49.7 -13.7	09						
10	333 53.4 -00.1	S 18 19.8 +00.6	284 34.5 +00.0	S 26 57.7 -00.1	204 36.6 -26.0	S 05 36.0 -13.6	10						
11	348 53.3 -00.1	S 18 20.4 +00.7	299 34.5 +00.1	S 26 57.6 -00.2	219 10.6 -25.9	S 05 22.4 -13.7	11						
12	3 53.2 -00.1	S 18 21.1 +00.6	314 34.6 +00.0	S 26 57.4 -00.2	233 44.7 -25.9	S 05 08.7 -13.7	12						
13	18 53.1 -00.1	S 18 21.7 +00.7	329 34.6 +00.1	S 26 57.2 -00.2	248 18.8 -25.9	S 04 55.0 -13.8	13						
14	33 53.0 -00.1	S 18 22.4 +00.6	344 34.7 +00.1	S 26 57.0 -00.2	262 52.9 -25.8	S 04 41.2 -13.7	14						
15	48 52.9 -00.1	S 18 23.0 +00.7	359 34.8 +00.0	S 26 56.8 -00.1	277 27.1 -25.8	S 04 27.5 -13.7	15						
16	63 52.8 -00.1	S 18 23.7 +00.6	14 34.8 +00.1	S 26 56.7 -00.2	292 01.3 -25.7	S 04 13.8 -13.8	16						
17	78 52.7 -00.1	S 18 24.3 +00.6	29 34.9 +00.0	S 26 56.5 -00.2	306 35.6 -25.8	S 04 00.0 -13.7	17						
18	93 52.6 -00.1	S 18 24.9 +00.7	44 34.9 +00.1	S 26 56.3 -00.2	321 09.8 -25.6	S 03 46.3 -13.8	18						
19	108 52.5 -00.1	S 18 25.6 +00.6	59 35.0 +00.1	S 26 56.1 -00.2	335 44.2 -25.7	S 03 32.5 -13.7	19						
20	123 52.4 -00.1	S 18 26.2 +00.7	74 35.1 +00.0	S 26 55.9 -00.2	350 18.5 -25.6	S 03 18.8 -13.8	20						
21	138 52.3 -00.1	S 18 26.9 +00.6	89 35.1 +00.1	S 26 55.7 -00.1	4 52.9 -25.5	S 03 05.0 -13.7	21						
22	153 52.2 -00.1	S 18 27.5 +00.6	104 35.2 +00.1	S 26 55.6 -00.2	19 27.4 -25.6	S 02 51.3 -13.8	22						
23	168 52.1 -00.1	S 18 28.1 +00.7	119 35.3 +00.1	S 26 55.4 -00.2	34 01.8 -25.5	S 02 37.5 -13.8	23						
	UT 02 06 10 14 18 22	SD 16'2 16'2 16'2 16'2 16'2 16'2	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 15'3 15'2 15'2 15'2 15'2 15'1							
	HP 00'1 00'1 00'1 00'1 00'1 00'1	HP 00'3 00'3 00'3 00'3 00'3 00'3		HP 00'3 00'3 00'3 00'3 00'3 00'3		HP 56'0 55'9 55'8 55'7 55'6 55'5							
	SHA 131° 130° 130° 130° 130° 130°	SHA 081° 081° 081° 081° 081° 080°		SHA 081° 081° 081° 081° 081° 080°		SHA 005° 003° 001° 359° 357° 355°							
	Greenwich Culmination Time: 11:44	Greenwich Culmination Time: 15:01		Greenwich Culmination Time: 20:39		Greenwich Culmination Time: 20:39							

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	195 52.6 +00.8	S 14 23.9 +00.5	87 06.6 +02.3	S 14 42.4 -00.1	102 51.0 +02.3	S 19 05.9 +00.0	00						
01	210 53.4 +00.8	S 14 24.4 +00.6	102 08.9 +02.2	S 14 42.3 -00.1	117 53.3 +02.4	S 19 05.9 -00.1	01						
02	225 54.2 +00.8	S 14 25.0 +00.6	117 11.1 +02.3	S 14 42.2 +00.0	132 55.7 +02.3	S 19 05.8 +00.0	02						
03	240 55.0 +00.8	S 14 25.6 +00.5	132 13.4 +02.2	S 14 42.2 -00.1	147 58.0 +02.3	S 19 05.8 +00.0	03						
04	255 55.8 +00.8	S 14 26.1 +00.6	147 15.6 +02.3	S 14 42.1 -00.1	163 00.3 +02.3	S 19 05.8 -00.1	04						
05	270 56.6 +00.8	S 14 26.7 +00.5	162 17.9 +02.2	S 14 42.0 -00.1	178 02.6 +02.3	S 19 05.7 +00.0	05						
06	285 57.4 +00.8	S 14 27.2 +00.6	177 20.1 +02.3	S 14 41.9 +00.0	193 04.9 +02.4	S 19 05.7 -00.1	06						
07	300 58.2 +00.8	S 14 27.8 +00.5	192 22.4 +02.2	S 14 41.9 -00.1	208 07.3 +02.3	S 19 05.6 +00.0	07						
08	315 59.0 +00.8	S 14 28.3 +00.6	207 24.6 +02.3	S 14 41.8 -00.1	223 09.6 +02.3	S 19 05.6 +00.0	08						
09	330 59.8 +00.8	S 14 28.9 +00.6	222 26.9 +02.2	S 14 41.7 -00.1	238 11.9 +02.3	S 19 05.6 -00.1	09						
10	346 00.6 +00.9	S 14 29.5 +00.5	237 29.1 +02.3	S 14 41.6 -00.1	253 14.2 +02.4	S 19 05.5 +00.0	10						
11	1 01.5 +00.8	S 14 30.0 +00.6	252 31.4 +02.2	S 14 41.5 +00.0	268 16.6 +02.3	S 19 05.5 +00.0	11						
12	16 02.3 +00.8	S 14 30.6 +00.5	267 33.6 +02.3	S 14 41.5 -00.1	283 18.9 +02.3	S 19 05.5 -00.1	12						
13	31 03.1 +00.8	S 14 31.1 +00.6	282 35.9 +02.2	S 14 41.4 -00.1	298 21.2 +02.3	S 19 05.4 +00.0	13						
14	46 03.9 +00.8	S 14 31.7 +00.5	297 38.1 +02.3	S 14 41.3 -00.1	313 23.5 +02.3	S 19 05.4 +00.0	14						
15	61 04.7 +00.8	S 14 32.2 +00.6	312 40.4 +02.2	S 14 41.2 -00.1	328 25.8 +02.4	S 19 05.4 -00.1	15						
16	76 05.5 +00.8	S 14 32.8 +00.5	327 42.6 +02.3	S 14 41.1 +00.0	343 28.2 +02.3	S 19 05.3 +00.0	16						
17	91 06.3 +00.8	S 14 33.3 +00.6	342 44.9 +02.2	S 14 41.1 -00.1	358 30.5 +02.3	S 19 05.3 -00.1	17						
18	106 07.1 +00.8	S 14 33.9 +00.6	357 47.1 +02.3	S 14 41.0 -00.1	13 32.8 +02.3	S 19 05.2 +00.0	18						
19	121 07.9 +00.8	S 14 34.5 +00.5	12 49.4 +02.2	S 14 40.9 -00.1	28 35.1 +02.3	S 19 05.2 +00.0	19						
20	136 08.7 +00.8	S 14 35.0 +00.6	27 51.6 +02.3	S 14 40.8 +00.0	43 37.4 +02.4	S 19 05.2 -00.1	20						
21	151 09.5 +00.8	S 14 35.6 +00.5	42 53.9 +02.2	S 14 40.8 -00.1	58 39.8 +02.3	S 19 05.1 +00.0	21						
22	166 10.3 +00.8	S 14 36.1 +00.6	57 56.1 +02.3	S 14 40.7 -00.1	73 42.1 +02.3	S 19 05.1 +00.0	22						
23	181 11.1 +00.8	S 14 36.7 +00.5	72 58.4 +02.2	S 14 40.6 -00.1	88 44.4 +02.3	S 19 05.1 -00.1	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 143° 142° 142° 142° 142° 142°	SHA 034° 034° 034° 034° 034° 034°		SHA 034° 034° 034° 034° 034° 034°		SHA 050° 050° 050° 050° 049° 049°							
	Greenwich Culmination Time: 10:55	Greenwich Culmination Time: 18:08		Greenwich Culmination Time: 17:05		Greenwich Culmination Time: 17:05							

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 52.0 -00.1	S	18 28.8 +00.6	134 35.4 +00.0	S	26 55.2 -00.2	48 36.3 -25.5	S	02 23.7 -13.7	00			
01	198 51.9 -00.1	S	18 29.4 +00.7	149 35.4 +00.1	S	26 55.0 -00.2	63 10.8 -25.4	S	02 10.0 -13.8	01			
02	213 51.8 -00.1	S	18 30.1 +00.6	164 35.5 +00.1	S	26 54.8 -00.2	77 45.4 -25.5	S	01 56.2 -13.8	02			
03	228 51.7 -00.1	S	18 30.7 +00.6	179 35.6 +00.1	S	26 54.6 -00.2	92 19.9 -25.4	S	01 42.4 -13.7	03			
04	243 51.6 -00.1	S	18 31.3 +00.7	194 35.7 +00.1	S	26 54.4 -00.2	106 54.5 -25.4	S	01 28.7 -13.8	04			
05	258 51.5 -00.1	S	18 32.0 +00.6	209 35.8 +00.0	S	26 54.2 -00.2	121 29.1 -25.3	S	01 14.9 -13.7	05			
06	273 51.4 -00.1	S	18 32.6 +00.6	224 35.8 +00.1	S	26 54.0 -00.2	136 03.8 -25.4	S	01 01.2 -13.8	06			
07	288 51.3 -00.1	S	18 33.2 +00.7	239 35.9 +00.1	S	26 53.8 -00.2	150 38.4 -25.3	S	00 47.4 -13.7	07			
08	303 51.2 -00.2	S	18 33.9 +00.6	254 36.0 +00.1	S	26 53.6 -00.2	165 13.1 -25.3	S	00 33.7 -13.8	08			
09	318 51.0 -00.1	S	18 34.5 +00.6	269 36.1 +00.1	S	26 53.4 -00.2	179 47.8 -25.2	S	00 19.9 -13.7	09			
10	333 50.9 -00.1	S	18 35.1 +00.7	284 36.2 +00.1	S	26 53.2 -00.2	194 22.6 -25.3	S	00 06.2 -13.7	10			
11	348 50.8 -00.1	S	18 35.8 +00.6	299 36.3 +00.1	S	26 53.0 -00.2	208 57.3 -25.2	N	00 07.5 +13.7	11			
12	3 50.7 -00.1	S	18 36.4 +00.6	314 36.4 +00.1	S	26 52.8 -00.2	223 32.1 -25.3	N	00 21.2 +13.7	12			
13	18 50.6 -00.1	S	18 37.0 +00.6	329 36.5 +00.1	S	26 52.6 -00.2	238 06.8 -25.2	N	00 34.9 +13.7	13			
14	33 50.5 -00.1	S	18 37.6 +00.7	344 36.6 +00.1	S	26 52.4 -00.2	252 41.6 -25.2	N	00 48.6 +13.7	14			
15	48 50.4 -00.1	S	18 38.3 +00.6	359 36.7 +00.0	S	26 52.2 -00.2	267 16.4 -25.2	N	01 02.3 +13.7	15			
16	63 50.3 -00.1	S	18 38.9 +00.6	14 36.7 +00.1	S	26 52.0 -00.2	281 51.2 -25.1	N	01 16.0 +13.6	16			
17	78 50.2 -00.1	S	18 39.5 +00.7	29 36.8 +00.2	S	26 51.8 -00.2	296 26.1 -25.2	N	01 29.6 +13.7	17			
18	93 50.1 -00.1	S	18 40.2 +00.6	44 37.0 +00.1	S	26 51.6 -00.2	311 00.9 -25.2	N	01 43.3 +13.6	18			
19	108 50.0 -00.1	S	18 40.8 +00.6	59 37.1 +00.1	S	26 51.4 -00.2	325 35.7 -25.1	N	01 56.9 +13.6	19			
20	123 49.9 -00.2	S	18 41.4 +00.6	74 37.2 +00.1	S	26 51.2 -00.2	340 10.6 -25.2	N	02 10.5 +13.6	20			
21	138 49.7 -00.1	S	18 42.0 +00.7	89 37.3 +00.1	S	26 51.0 -00.2	354 45.4 -25.1	N	02 24.1 +13.6	21			
22	153 49.6 -00.1	S	18 42.7 +00.6	104 37.4 +00.1	S	26 50.8 -00.2	9 20.3 -25.1	N	02 37.7 +13.5	22			
23	168 49.5 -00.1	S	18 43.3 +00.6	119 37.5 +00.1	S	26 50.6 -00.2	23 55.2 -25.1	N	02 51.2 +13.6	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 00'3 00'3 00'3 00'3 00'3 00'3			SD 15'1 15'1 15'1 15'0 15'0 15'0						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'3 00'3 00'3 00'3 00'3 00'3			HP 55'4 55'4 55'3 55'2 55'1 55'1						
	SHA 129° 129° 129° 129° 129° 129°			SHA 080° 080° 080° 080° 080° 079°			SHA 353° 352° 350° 348° 346° 344°						
	Greenwich Culmination Time: 11:44			Greenwich Culmination Time: 15:01			Greenwich Culmination Time: 21:21						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	196 11.9 +00.8	S	14 37.2 +00.6	88 00.6 +02.3	S	14 40.5 -00.1	103 46.7 +02.3	S	19 05.0 +00.0	00			
01	211 12.7 +00.8	S	14 37.8 +00.5	103 02.9 +02.2	S	14 40.4 +00.0	118 49.0 +02.4	S	19 05.0 +00.0	01			
02	226 13.5 +00.8	S	14 38.3 +00.6	118 05.1 +02.3	S	14 40.4 -00.1	133 51.4 +02.3	S	19 05.0 -00.1	02			
03	241 14.3 +00.8	S	14 38.9 +00.5	133 07.4 +02.2	S	14 40.3 -00.1	148 53.7 +02.3	S	19 04.9 +00.0	03			
04	256 15.1 +00.8	S	14 39.4 +00.6	148 09.6 +02.3	S	14 40.2 -00.1	163 56.0 +02.3	S	19 04.9 -00.1	04			
05	271 15.9 +00.8	S	14 40.0 +00.5	163 11.9 +02.2	S	14 40.1 -00.1	178 58.3 +02.3	S	19 04.8 +00.0	05			
06	286 16.7 +00.8	S	14 40.5 +00.6	178 14.1 +02.3	S	14 40.0 +00.0	194 00.6 +02.4	S	19 04.8 +00.0	06			
07	301 17.5 +00.8	S	14 41.1 +00.5	193 16.4 +02.2	S	14 40.0 -00.1	209 03.0 +02.3	S	19 04.8 -00.1	07			
08	316 18.3 +00.8	S	14 41.6 +00.6	208 18.6 +02.3	S	14 39.9 -00.1	224 05.3 +02.3	S	19 04.7 +00.0	08			
09	331 19.1 +00.8	S	14 42.2 +00.6	223 20.9 +02.2	S	14 39.8 -00.1	239 07.6 +02.3	S	19 04.7 +00.0	09			
10	346 19.9 +00.8	S	14 42.8 +00.5	238 23.1 +02.3	S	14 39.7 -00.1	254 09.9 +02.3	S	19 04.7 -00.1	10			
11	1 20.7 +00.8	S	14 43.3 +00.6	253 25.4 +02.2	S	14 39.6 +00.0	269 12.2 +02.3	S	19 04.6 +00.0	11			
12	16 21.5 +00.8	S	14 43.9 +00.5	268 27.6 +02.2	S	14 39.6 -00.1	284 14.5 +02.4	S	19 04.6 -00.1	12			
13	31 22.3 +00.8	S	14 44.4 +00.6	283 29.8 +02.3	S	14 39.5 -00.1	299 16.9 +02.3	S	19 04.5 +00.0	13			
14	46 23.1 +00.8	S	14 45.0 +00.5	298 32.1 +02.2	S	14 39.4 -00.1	314 19.2 +02.3	S	19 04.5 +00.0	14			
15	61 23.9 +00.8	S	14 45.5 +00.6	313 34.3 +02.3	S	14 39.3 -00.1	329 21.5 +02.3	S	19 04.5 -00.1	15			
16	76 24.7 +00.8	S	14 46.1 +00.5	328 36.6 +02.2	S	14 39.2 +00.0	344 23.8 +02.3	S	19 04.4 +00.0	16			
17	91 25.5 +00.8	S	14 46.6 +00.6	343 38.8 +02.3	S	14 39.2 -00.1	359 26.1 +02.4	S	19 04.4 +00.0	17			
18	106 26.3 +00.8	S	14 47.2 +00.5	358 41.1 +02.2	S	14 39.1 -00.1	14 28.5 +02.3	S	19 04.4 -00.1	18			
19	121 27.1 +00.8	S	14 47.7 +00.6	13 43.3 +02.2	S	14 39.0 -00.1	29 30.8 +02.3	S	19 04.3 +00.0	19			
20	136 27.9 +00.8	S	14 48.3 +00.5	28 45.5 +02.3	S	14 38.9 -00.1	44 33.1 +02.3	S	19 04.3 +00.0	20			
21	151 28.7 +00.8	S	14 48.8 +00.6	43 47.8 +02.2	S	14 38.8 -00.1	59 35.4 +02.3	S	19 04.3 -00.1	21			
22	166 29.5 +00.8	S	14 49.4 +00.5	58 50.0 +02.3	S	14 38.7 +00.0	74 37.7 +02.3	S	19 04.2 +00.0	22			
23	181 30.3 +00.8	S	14 49.9 +00.6	73 52.3 +02.2	S	14 38.7 -00.1	89 40.0 +02.4	S	19 04.2 -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 00'0 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 142° 142° 142° 142° 141° 141°			SHA 034° 034° 034° 034° 034° 034°			SHA 049° 049° 049° 049° 049° 049°						
	Greenwich Culmination Time: 10:54			Greenwich Culmination Time: 18:05			Greenwich Culmination Time: 17:02						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 49.4 -00.1	S 18 43.9 +00.6	134 37.6 +00.1	S 26 50.4 -00.2	38 30.1 -25.2	N 03 04.8 +13.5	00						
01	198 49.3 -00.1	S 18 44.5 +00.7	149 37.7 +00.1	S 26 50.2 -00.2	53 04.9 -25.1	N 03 18.3 +13.5	01						
02	213 49.2 -00.1	S 18 45.2 +00.6	164 37.8 +00.1	S 26 50.0 -00.2	67 39.8 -25.1	N 03 31.8 +13.5	02						
03	228 49.1 -00.1	S 18 45.8 +00.6	179 37.9 +00.2	S 26 49.8 -00.3	82 14.7 -25.1	N 03 45.3 +13.5	03						
04	243 49.0 -00.2	S 18 46.4 +00.6	194 38.1 +00.1	S 26 49.5 -00.2	96 49.6 -25.1	N 03 58.8 +13.4	04						
05	258 48.8 -00.1	S 18 47.0 +00.7	209 38.2 +00.1	S 26 49.3 -00.2	111 24.5 -25.1	N 04 12.2 +13.4	05						
06	273 48.7 -00.1	S 18 47.7 +00.6	224 38.3 +00.1	S 26 49.1 -00.2	125 59.4 -25.1	N 04 25.6 +13.4	06						
07	288 48.6 -00.1	S 18 48.3 +00.6	239 38.4 +00.1	S 26 48.9 -00.2	140 34.3 -25.2	N 04 39.0 +13.4	07						
08	303 48.5 -00.1	S 18 48.9 +00.6	254 38.5 +00.2	S 26 48.7 -00.2	155 09.1 -25.1	N 04 52.4 +13.3	08						
09	318 48.4 -00.1	S 18 49.5 +00.6	269 38.7 +00.1	S 26 48.5 -00.2	169 44.0 -25.1	N 05 05.7 +13.3	09						
10	333 48.3 -00.1	S 18 50.1 +00.6	284 38.8 +00.1	S 26 48.3 -00.3	184 18.9 -25.2	N 05 19.0 +13.3	10						
11	348 48.2 -00.2	S 18 50.7 +00.7	299 38.9 +00.2	S 26 48.0 -00.2	198 53.7 -25.1	N 05 32.3 +13.3	11						
12	3 48.0 -00.1	S 18 51.4 +00.6	314 39.1 +00.1	S 26 47.8 -00.2	213 28.6 -25.2	N 05 45.6 +13.2	12						
13	18 47.9 -00.1	S 18 52.0 +00.6	329 39.2 +00.1	S 26 47.6 -00.2	228 03.4 -25.1	N 05 58.8 +13.2	13						
14	33 47.8 -00.1	S 18 52.6 +00.6	344 39.3 +00.2	S 26 47.4 -00.3	242 38.3 -25.2	N 06 12.0 +13.2	14						
15	48 47.7 -00.1	S 18 53.2 +00.6	359 39.5 +00.1	S 26 47.1 -00.2	257 13.1 -25.2	N 06 25.2 +13.1	15						
16	63 47.6 -00.1	S 18 53.8 +00.6	14 39.6 +00.1	S 26 46.9 -00.2	271 47.9 -25.2	N 06 38.3 +13.1	16						
17	78 47.5 -00.2	S 18 54.4 +00.7	29 39.7 +00.2	S 26 46.7 -00.2	286 22.7 -25.2	N 06 51.4 +13.1	17						
18	93 47.3 -00.1	S 18 55.1 +00.6	44 39.9 +00.1	S 26 46.5 -00.2	300 57.5 -25.2	N 07 04.5 +13.0	18						
19	108 47.2 -00.1	S 18 55.7 +00.6	59 40.0 +00.2	S 26 46.3 -00.3	315 32.3 -25.2	N 07 17.5 +13.1	19						
20	123 47.1 -00.1	S 18 56.3 +00.6	74 40.2 +00.1	S 26 46.0 -00.2	330 07.1 -25.2	N 07 30.6 +12.9	20						
21	138 47.0 -00.1	S 18 56.9 +00.6	89 40.3 +00.2	S 26 45.8 -00.2	344 41.9 -25.3	N 07 43.5 +13.0	21						
22	153 46.9 -00.2	S 18 57.5 +00.6	104 40.5 +00.1	S 26 45.6 -00.3	359 16.6 -25.3	N 07 56.5 +12.9	22						
23	168 46.7 -00.1	S 18 58.1 +00.6	119 40.6 +00.1	S 26 45.3 -00.2	13 51.3 -25.3	N 08 09.4 +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 16'2 16'2 16'2 16'2 16'2 16'2		SD 00'3 00'3 00'3 00'3 00'3 00'3		SD 15'0 15'0 14'9 14'9 14'9 14'9								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'3 00'3 00'3 00'3 00'3 00'3		HP 55'0 54'9 54'9 54'8 54'7 54'7								
	SHA 128° 128° 128° 128° 128° 128°		SHA 079° 079° 079° 079° 079° 078°		SHA 342° 340° 339° 337° 335° 333°								
	Greenwich Culmination Time: 11:44		Greenwich Culmination Time: 15:01		Greenwich Culmination Time: 22:02								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	196 31.1 +00.8	S 14 50.5 +00.5	88 54.5 +02.3	S 14 38.6 -00.1	104 42.4 +02.3	S 19 04.1 +00.0	00						
01	211 31.9 +00.8	S 14 51.0 +00.6	103 56.8 +02.2	S 14 38.5 -00.1	119 44.7 +02.3	S 19 04.1 +00.0	01						
02	226 32.7 +00.8	S 14 51.6 +00.5	118 59.0 +02.2	S 14 38.4 -00.1	134 47.0 +02.3	S 19 04.1 -00.1	02						
03	241 33.5 +00.8	S 14 52.1 +00.6	134 01.2 +02.3	S 14 38.3 +00.0	149 49.3 +02.3	S 19 04.0 +00.0	03						
04	256 34.3 +00.8	S 14 52.7 +00.5	149 03.5 +02.2	S 14 38.3 -00.1	164 51.6 +02.3	S 19 04.0 -00.1	04						
05	271 35.1 +00.8	S 14 53.2 +00.6	164 05.7 +02.3	S 14 38.2 -00.1	179 53.9 +02.3	S 19 03.9 +00.0	05						
06	286 35.9 +00.8	S 14 53.8 +00.5	179 08.0 +02.2	S 14 38.1 -00.1	194 56.2 +02.4	S 19 03.9 +00.0	06						
07	301 36.7 +00.8	S 14 54.3 +00.6	194 10.2 +02.2	S 14 38.0 -00.1	209 58.6 +02.3	S 19 03.9 -00.1	07						
08	316 37.5 +00.7	S 14 54.9 +00.5	209 12.4 +02.3	S 14 37.9 -00.1	225 00.9 +02.3	S 19 03.8 +00.0	08						
09	331 38.2 +00.8	S 14 55.4 +00.5	224 14.7 +02.2	S 14 37.8 +00.0	240 03.2 +02.3	S 19 03.8 +00.0	09						
10	346 39.0 +00.8	S 14 55.9 +00.6	239 16.9 +02.2	S 14 37.8 -00.1	255 05.5 +02.3	S 19 03.8 -00.1	10						
11	1 39.8 +00.8	S 14 56.5 +00.5	254 19.1 +02.3	S 14 37.7 -00.1	270 07.8 +02.3	S 19 03.7 +00.0	11						
12	16 40.6 +00.8	S 14 57.0 +00.6	269 21.4 +02.2	S 14 37.6 -00.1	285 10.1 +02.3	S 19 03.7 -00.1	12						
13	31 41.4 +00.8	S 14 57.6 +00.5	284 23.6 +02.3	S 14 37.5 -00.1	300 12.4 +02.4	S 19 03.6 +00.0	13						
14	46 42.2 +00.8	S 14 58.1 +00.6	299 25.9 +02.2	S 14 37.4 -00.1	315 14.8 +02.3	S 19 03.6 +00.0	14						
15	61 43.0 +00.8	S 14 58.7 +00.5	314 28.1 +02.2	S 14 37.3 +00.0	330 17.1 +02.3	S 19 03.6 -00.1	15						
16	76 43.8 +00.8	S 14 59.2 +00.6	329 30.3 +02.3	S 14 37.3 -00.1	345 19.4 +02.3	S 19 03.5 +00.0	16						
17	91 44.6 +00.8	S 14 59.8 +00.5	344 32.6 +02.2	S 14 37.2 -00.1	0 21.7 +02.3	S 19 03.5 +00.0	17						
18	106 45.4 +00.8	S 15 00.3 +00.6	359 34.8 +02.2	S 14 37.1 -00.1	15 24.0 +02.3	S 19 03.5 -00.1	18						
19	121 46.2 +00.8	S 15 00.9 +00.5	14 37.0 +02.3	S 14 37.0 -00.1	30 26.3 +02.3	S 19 03.4 +00.0	19						
20	136 47.0 +00.8	S 15 01.4 +00.6	29 39.3 +02.2	S 14 36.9 -00.1	45 28.6 +02.4	S 19 03.4 -00.1	20						
21	151 47.8 +00.8	S 15 02.0 +00.5	44 41.5 +02.2	S 14 36.8 +00.0	60 31.0 +02.3	S 19 03.3 +00.0	21						
22	166 48.6 +00.8	S 15 02.5 +00.6	59 43.7 +02.3	S 14 36.8 -00.1	75 33.3 +02.3	S 19 03.3 +00.0	22						
23	181 49.4 +00.8	S 15 03.1 +00.5	74 46.0 +02.2	S 14 36.7 -00.1	90 35.6 +02.3	S 19 03.3 -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 141° 141° 141° 141° 141° 141°		SHA 034° 034° 034° 034° 034° 034°		SHA 049° 049° 049° 049° 049° 049°								
	Greenwich Culmination Time: 10:53		Greenwich Culmination Time: 18:01		Greenwich Culmination Time: 16:58								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 46.6 -00.1	S 18 58.7 +00.6	134 40.7 +00.2	S 26 45.1 -00.2	28 26.0 -25.3	N 08 22.2 +12.9	00						
01	198 46.5 -00.1	S 18 59.3 +00.6	149 40.9 +00.2	S 26 44.9 -00.2	43 00.7 -25.3	N 08 35.1 +12.8	01						
02	213 46.4 -00.1	S 18 59.9 +00.7	164 41.1 +00.1	S 26 44.7 -00.3	57 35.4 -25.4	N 08 47.9 +12.7	02						
03	228 46.3 -00.2	S 19 00.6 +00.6	179 41.2 +00.2	S 26 44.4 -00.2	72 10.0 -25.4	N 09 00.6 +12.7	03						
04	243 46.1 -00.1	S 19 01.2 +00.6	194 41.4 +00.1	S 26 44.2 -00.2	86 44.6 -25.4	N 09 13.3 +12.7	04						
05	258 46.0 -00.1	S 19 01.8 +00.6	209 41.5 +00.2	S 26 44.0 -00.3	101 19.2 -25.4	N 09 26.0 +12.6	05						
06	273 45.9 -00.1	S 19 02.4 +00.6	224 41.7 +00.2	S 26 43.7 -00.2	115 53.8 -25.4	N 09 38.6 +12.6	06						
07	288 45.8 -00.2	S 19 03.0 +00.6	239 41.9 +00.1	S 26 43.5 -00.3	130 28.4 -25.5	N 09 51.2 +12.5	07						
08	303 45.6 -00.1	S 19 03.6 +00.6	254 42.0 +00.2	S 26 43.2 -00.2	145 02.9 -25.5	N 10 03.7 +12.5	08						
09	318 45.5 -00.1	S 19 04.2 +00.6	269 42.2 +00.1	S 26 43.0 -00.2	159 37.4 -25.5	N 10 16.2 +12.5	09						
10	333 45.4 -00.1	S 19 04.8 +00.6	284 42.3 +00.2	S 26 42.8 -00.3	174 11.9 -25.5	N 10 28.7 +12.4	10						
11	348 45.3 -00.2	S 19 05.4 +00.6	299 42.5 +00.2	S 26 42.5 -00.2	188 46.4 -25.6	N 10 41.1 +12.3	11						
12	3 45.1 -00.1	S 19 06.0 +00.6	314 42.7 +00.2	S 26 42.3 -00.2	203 20.8 -25.6	N 10 53.4 +12.4	12						
13	18 45.0 -00.1	S 19 06.6 +00.6	329 42.9 +00.1	S 26 42.1 -00.3	217 55.2 -25.6	N 11 05.8 +12.2	13						
14	33 44.9 -00.1	S 19 07.2 +00.6	344 43.0 +00.2	S 26 41.8 -00.2	232 29.6 -25.7	N 11 18.0 +12.2	14						
15	48 44.8 -00.2	S 19 07.8 +00.6	359 43.2 +00.2	S 26 41.6 -00.3	247 03.9 -25.6	N 11 30.2 +12.2	15						
16	63 44.6 -00.1	S 19 08.4 +00.6	14 43.4 +00.2	S 26 41.3 -00.2	261 38.3 -25.8	N 11 42.4 +12.1	16						
17	78 44.5 -00.1	S 19 09.0 +00.6	29 43.6 +00.1	S 26 41.1 -00.3	276 12.5 -25.7	N 11 54.5 +12.1	17						
18	93 44.4 -00.1	S 19 09.6 +00.6	44 43.7 +00.2	S 26 40.8 -00.2	290 46.8 -25.8	N 12 06.6 +12.0	18						
19	108 44.3 -00.2	S 19 10.2 +00.6	59 43.9 +00.2	S 26 40.6 -00.3	305 21.0 -25.8	N 12 18.6 +11.9	19						
20	123 44.1 -00.1	S 19 10.8 +00.6	74 44.1 +00.2	S 26 40.3 -00.2	319 55.2 -25.8	N 12 30.5 +12.0	20						
21	138 44.0 -00.1	S 19 11.4 +00.6	89 44.3 +00.2	S 26 40.1 -00.2	334 29.4 -25.9	N 12 42.5 +11.8	21						
22	153 43.9 -00.1	S 19 12.0 +00.6	104 44.5 +00.2	S 26 39.9 -00.3	349 03.5 -25.9	N 12 54.3 +11.8	22						
23	168 43.8 -00.2	S 19 12.6 +00.6	119 44.7 +00.2	S 26 39.6 -00.2	3 37.6 -26.0	N 13 06.1 +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 16'2 16'2 16'2 16'2 16'2 16'2		SD 00'3 00'3 00'3 00'3 00'3 00'3		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 00'3 00'3 00'3 00'3 00'3 00'3		HP 54'6 54'6 54'5 54'5 54'4 54'4								
	SHA 127° 127° 127° 127° 127° 127°		SHA 078° 078° 078° 078° 078° 078°		SHA 331° 329° 328° 326° 324° 322°								
	Greenwich Culmination Time: 11:44		Greenwich Culmination Time: 15:01		Greenwich Culmination Time: 22:45								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	196 50.2 +00.7	S 15 03.6 +00.5	89 48.2 +02.3	S 14 36.6 -00.1	105 37.9 +02.3	S 19 03.2 +00.0	00						
01	211 50.9 +00.8	S 15 04.1 +00.6	104 50.5 +02.2	S 14 36.5 -00.1	120 40.2 +02.3	S 19 03.2 -00.1	01						
02	226 51.7 +00.8	S 15 04.7 +00.5	119 52.7 +02.2	S 14 36.4 -00.1	135 42.5 +02.3	S 19 03.1 +00.0	02						
03	241 52.5 +00.8	S 15 05.2 +00.6	134 54.9 +02.3	S 14 36.3 +00.0	150 44.8 +02.3	S 19 03.1 +00.0	03						
04	256 53.3 +00.8	S 15 05.8 +00.5	149 57.2 +02.2	S 14 36.3 -00.1	165 47.1 +02.4	S 19 03.1 -00.1	04						
05	271 54.1 +00.8	S 15 06.3 +00.6	164 59.4 +02.2	S 14 36.2 -00.1	180 49.5 +02.3	S 19 03.0 +00.0	05						
06	286 54.9 +00.8	S 15 06.9 +00.5	180 01.6 +02.2	S 14 36.1 -00.1	195 51.8 +02.3	S 19 03.0 +00.0	06						
07	301 55.7 +00.8	S 15 07.4 +00.6	195 03.8 +02.3	S 14 36.0 -00.1	210 54.1 +02.3	S 19 03.0 -00.1	07						
08	316 56.5 +00.8	S 15 08.0 +00.5	210 06.1 +02.2	S 14 35.9 -00.1	225 56.4 +02.3	S 19 02.9 +00.0	08						
09	331 57.3 +00.8	S 15 08.5 +00.5	225 08.3 +02.2	S 14 35.8 -00.1	240 58.7 +02.3	S 19 02.9 -00.1	09						
10	346 58.1 +00.8	S 15 09.0 +00.6	240 10.5 +02.3	S 14 35.7 +00.0	256 01.0 +02.3	S 19 02.8 +00.0	10						
11	1 58.9 +00.7	S 15 09.6 +00.5	255 12.8 +02.2	S 14 35.7 -00.1	271 03.3 +02.3	S 19 02.8 +00.0	11						
12	16 59.6 +00.8	S 15 10.1 +00.6	270 15.0 +02.2	S 14 35.6 -00.1	286 05.6 +02.3	S 19 02.8 -00.1	12						
13	32 00.4 +00.8	S 15 10.7 +00.5	285 17.2 +02.3	S 14 35.5 -00.1	301 07.9 +02.4	S 19 02.7 +00.0	13						
14	47 01.2 +00.8	S 15 11.2 +00.6	300 19.5 +02.2	S 14 35.4 -00.1	316 10.3 +02.3	S 19 02.7 -00.1	14						
15	62 02.0 +00.8	S 15 11.8 +00.5	315 21.7 +02.2	S 14 35.3 -00.1	331 12.6 +02.3	S 19 02.6 +00.0	15						
16	77 02.8 +00.8	S 15 12.3 +00.5	330 23.9 +02.3	S 14 35.2 -00.1	346 14.9 +02.3	S 19 02.6 +00.0	16						
17	92 03.6 +00.8	S 15 12.8 +00.6	345 26.2 +02.2	S 14 35.1 +00.0	1 117.2 +02.3	S 19 02.6 -00.1	17						
18	107 04.4 +00.8	S 15 13.4 +00.5	0 28.4 +02.2	S 14 35.1 -00.1	16 19.5 +02.3	S 19 02.5 +00.0	18						
19	122 05.2 +00.8	S 15 13.9 +00.6	15 30.6 +02.2	S 14 35.0 -00.1	31 21.8 +02.3	S 19 02.5 -00.1	19						
20	137 06.0 +00.7	S 15 14.5 +00.5	30 32.8 +02.3	S 14 34.9 -00.1	46 24.1 +02.3	S 19 02.4 +00.0	20						
21	152 06.7 +00.8	S 15 15.0 +00.5	45 35.1 +02.2	S 14 34.8 -00.1	61 26.4 +02.3	S 19 02.4 +00.0	21						
22	167 07.5 +00.8	S 15 15.5 +00.6	60 37.3 +02.2	S 14 34.7 -00.1	76 28.7 +02.3	S 19 02.4 -00.1	22						
23	182 08.3 +00.8	S 15 16.1 +00.5	75 39.5 +02.3	S 14 34.6 -00.1	91 31.0 +02.3	S 19 02.3 +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 00'0 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 141° 140° 140° 140° 140° 140°		SHA 034° 034° 033° 033° 033° 033°		SHA 049° 049° 049° 049° 049° 049°								
	Greenwich Culmination Time: 10:52		Greenwich Culmination Time: 17:58		Greenwich Culmination Time: 16:54								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 43.6 -00.1	S	19 13.2 +00.6	134 44.9 +00.2	S	26 39.4 -00.3	18 11.6 -26.0	N	13 17.8 +11.7	00			
01	198 43.5 -00.1	S	19 13.8 +00.6	149 45.1 +00.2	S	26 39.1 -00.2	32 45.6 -26.0	N	13 29.5 +11.7	01			
02	213 43.4 -00.2	S	19 14.4 +00.6	164 45.3 +00.2	S	26 38.9 -00.3	47 19.6 -26.0	N	13 41.2 +11.5	02			
03	228 43.2 -00.1	S	19 15.0 +00.6	179 45.5 +00.2	S	26 38.6 -00.2	61 53.6 -26.1	N	13 52.7 +11.5	03			
04	243 43.1 -00.1	S	19 15.6 +00.6	194 45.7 +00.2	S	26 38.4 -00.3	76 27.5 -26.2	N	14 04.2 +11.5	04			
05	258 43.0 -00.2	S	19 16.2 +00.6	209 45.9 +00.2	S	26 38.1 -00.3	91 01.3 -26.1	N	14 15.7 +11.4	05			
06	273 42.8 -00.1	S	19 16.8 +00.5	224 46.1 +00.2	S	26 37.8 -00.2	105 35.2 -26.2	N	14 27.1 +11.3	06			
07	288 42.7 -00.1	S	19 17.3 +00.6	239 46.3 +00.2	S	26 37.6 -00.3	120 09.0 -26.3	N	14 38.4 +11.3	07			
08	303 42.6 -00.2	S	19 17.9 +00.6	254 46.5 +00.2	S	26 37.3 -00.2	134 42.7 -26.3	N	14 49.7 +11.2	08			
09	318 42.4 -00.1	S	19 18.5 +00.6	269 46.7 +00.2	S	26 37.1 -00.3	149 16.4 -26.3	N	15 00.9 +11.1	09			
10	333 42.3 -00.1	S	19 19.1 +00.6	284 46.9 +00.2	S	26 36.8 -00.2	163 50.1 -26.4	N	15 12.0 +11.1	10			
11	348 42.2 -00.2	S	19 19.7 +00.6	299 47.1 +00.2	S	26 36.6 -00.3	178 23.7 -26.4	N	15 23.1 +11.0	11			
12	3 42.0 -00.1	S	19 20.3 +00.6	314 47.3 +00.2	S	26 36.3 -00.3	192 57.3 -26.5	N	15 34.1 +10.9	12			
13	18 41.9 -00.1	S	19 20.9 +00.6	329 47.5 +00.2	S	26 36.0 -00.2	207 30.8 -26.5	N	15 45.0 +10.9	13			
14	33 41.8 -00.2	S	19 21.5 +00.6	344 47.7 +00.3	S	26 35.8 -00.3	222 04.3 -26.5	N	15 55.9 +10.8	14			
15	48 41.6 -00.1	S	19 22.1 +00.5	359 48.0 +00.2	S	26 35.5 -00.2	236 37.8 -26.6	N	16 06.7 +10.8	15			
16	63 41.5 -00.1	S	19 22.6 +00.6	14 48.2 +00.2	S	26 35.3 -00.3	251 11.2 -26.6	N	16 17.5 +10.6	16			
17	78 41.4 -00.2	S	19 23.2 +00.6	29 48.4 +00.2	S	26 35.0 -00.3	265 44.6 -26.7	N	16 28.1 +10.6	17			
18	93 41.2 -00.1	S	19 23.8 +00.6	44 48.6 +00.2	S	26 34.7 -00.2	280 17.9 -26.7	N	16 38.7 +10.6	18			
19	108 41.1 -00.1	S	19 24.4 +00.6	59 48.8 +00.3	S	26 34.5 -00.3	294 51.2 -26.8	N	16 49.3 +10.4	19			
20	123 41.0 -00.2	S	19 25.0 +00.6	74 49.1 +00.2	S	26 34.2 -00.3	309 24.4 -26.8	N	16 59.7 +10.4	20			
21	138 40.8 -00.1	S	19 25.6 +00.6	89 49.3 +00.2	S	26 33.9 -00.2	323 57.6 -26.9	N	17 10.1 +10.3	21			
22	153 40.7 -00.1	S	19 26.2 +00.5	104 49.5 +00.3	S	26 33.7 -00.3	338 30.7 -26.9	N	17 20.4 +10.3	22			
23	168 40.6 -00.2	S	19 26.7 +00.6	119 49.8 +00.2	S	26 33.4 -00.3	353 03.8 -27.0	N	17 30.7 +10.1	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 00'3 00'3 00'3 00'3 00'3 00'3			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 00'3 00'3 00'3 00'3 00'3 00'3			HP 54'3 54'3 54'3 54'2 54'2 54'2						
	SHA 126° 126° 126° 126° 126° 126°			SHA 077° 077° 077° 077° 077° 077°			SHA 320° 318° 316° 314° 312° 310°						
	Greenwich Culmination Time: 11:45			Greenwich Culmination Time: 15:00			Greenwich Culmination Time: 23:28						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	197 09.1 +00.8	S	15 16.6 +00.6	90 41.8 +02.2	S	14 34.5 +00.0	106 33.3 +02.4	S	19 02.3 -00.1	00			
01	212 09.9 +00.8	S	15 17.2 +00.5	105 44.0 +02.2	S	14 34.5 -00.1	121 35.7 +02.3	S	19 02.2 +00.0	01			
02	227 10.7 +00.8	S	15 17.7 +00.5	120 46.2 +02.2	S	14 34.4 -00.1	136 38.0 +02.3	S	19 02.2 +00.0	02			
03	242 11.5 +00.7	S	15 18.2 +00.6	135 48.4 +02.3	S	14 34.3 -00.1	151 40.3 +02.3	S	19 02.2 -00.1	03			
04	257 12.2 +00.8	S	15 18.8 +00.5	150 50.7 +02.2	S	14 34.2 -00.1	166 42.6 +02.3	S	19 02.1 +00.0	04			
05	272 13.0 +00.8	S	15 19.3 +00.6	165 52.9 +02.2	S	14 34.1 -00.1	181 44.9 +02.3	S	19 02.1 -00.1	05			
06	287 13.8 +00.8	S	15 19.9 +00.5	180 55.1 +02.2	S	14 34.0 -00.1	196 47.2 +02.3	S	19 02.0 +00.0	06			
07	302 14.6 +00.8	S	15 20.4 +00.5	195 57.3 +02.3	S	14 33.9 -00.1	211 49.5 +02.3	S	19 02.0 +00.0	07			
08	317 15.4 +00.8	S	15 20.9 +00.6	210 59.6 +02.2	S	14 33.8 +00.0	226 51.8 +02.3	S	19 02.0 -00.1	08			
09	332 16.2 +00.8	S	15 21.5 +00.5	226 01.8 +02.2	S	14 33.8 -00.1	241 54.1 +02.3	S	19 01.9 +00.0	09			
10	347 17.0 +00.7	S	15 22.0 +00.6	241 04.0 +02.2	S	14 33.7 -00.1	256 56.4 +02.3	S	19 01.9 -00.1	10			
11	2 17.7 +00.8	S	15 22.6 +00.5	256 06.2 +02.3	S	14 33.6 -00.1	271 58.7 +02.3	S	19 01.8 +00.0	11			
12	17 18.5 +00.8	S	15 23.1 +00.5	271 08.5 +02.2	S	14 33.5 -00.1	287 01.0 +02.3	S	19 01.8 +00.0	12			
13	32 19.3 +00.8	S	15 23.6 +00.6	286 10.7 +02.2	S	14 33.4 -00.1	302 03.3 +02.4	S	19 01.8 -00.1	13			
14	47 20.1 +00.8	S	15 24.2 +00.5	301 12.9 +02.2	S	14 33.3 -00.1	317 05.7 +02.3	S	19 01.7 +00.0	14			
15	62 20.9 +00.8	S	15 24.7 +00.5	316 15.1 +02.3	S	14 33.2 -00.1	332 08.0 +02.3	S	19 01.7 -00.1	15			
16	77 21.7 +00.8	S	15 25.2 +00.6	331 17.4 +02.2	S	14 33.1 +00.0	347 10.3 +02.3	S	19 01.6 +00.0	16			
17	92 22.5 +00.7	S	15 25.8 +00.5	346 19.6 +02.2	S	14 33.1 -00.1	2 12.6 +02.3	S	19 01.6 +00.0	17			
18	107 23.2 +00.8	S	15 26.3 +00.6	1 21.8 +02.2	S	14 33.0 -00.1	17 14.9 +02.3	S	19 01.6 -00.1	18			
19	122 24.0 +00.8	S	15 26.9 +00.5	16 24.0 +02.2	S	14 32.9 -00.1	32 17.2 +02.3	S	19 01.5 +00.0	19			
20	137 24.8 +00.8	S	15 27.4 +00.5	31 26.2 +02.3	S	14 32.8 -00.1	47 19.5 +02.3	S	19 01.5 -00.1	20			
21	152 25.6 +00.8	S	15 27.9 +00.6	46 28.5 +02.2	S	14 32.7 -00.1	62 21.8 +02.3	S	19 01.4 +00.0	21			
22	167 26.4 +00.7	S	15 28.5 +00.5	61 30.7 +02.2	S	14 32.6 -00.1	77 24.1 +02.3	S	19 01.4 +00.0	22			
23	182 27.1 +00.8	S	15 29.0 +00.5	76 32.9 +02.2	S	14 32.5 -00.1	92 26.4 +02.3	S	19 01.4 -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 140° 140° 140° 140° 139° 139°			SHA 033° 033° 033° 033° 033° 033°			SHA 049° 049° 049° 049° 049° 049°						
	Greenwich Culmination Time: 10:50			Greenwich Culmination Time: 17:54			Greenwich Culmination Time: 16:51						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> A: 50%				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 40.4 -00.1	S	19 27.3 +00.6	134 50.0 +00.2	S	26 33.1 -00.2	7 36.8 -27.0	N	17 40.8 +10.1				
01	198 40.3 -00.2	S	19 27.9 +00.6	149 50.2 +00.3	S	26 32.9 -00.3	22 09.8 -27.0	N	17 50.9 +10.0				
02	213 40.1 -00.1	S	19 28.5 +00.6	164 50.5 +00.2	S	26 32.6 -00.3	36 42.8 -27.1	N	18 00.9 +10.0				
03	228 40.0 -00.1	S	19 29.1 +00.5	179 50.7 +00.3	S	26 32.3 -00.2	51 15.7 -27.2	N	18 10.9 +09.8				
04	243 39.9 -00.2	S	19 29.6 +00.6	194 51.0 +00.2	S	26 32.1 -00.3	65 48.5 -27.2	N	18 20.7 +09.8				
05	258 39.7 -00.1	S	19 30.2 +00.6	209 51.2 +00.2	S	26 31.8 -00.3	80 21.3 -27.2	N	18 30.5 +09.7				
06	273 39.6 -00.2	S	19 30.8 +00.6	224 51.4 +00.3	S	26 31.5 -00.3	94 54.1 -27.3	N	18 40.2 +09.6				
07	288 39.4 -00.1	S	19 31.4 +00.5	239 51.7 +00.2	S	26 31.2 -00.2	109 26.8 -27.4	N	18 49.8 +09.5				
08	303 39.3 -00.1	S	19 31.9 +00.6	254 51.9 +00.3	S	26 31.0 -00.3	123 59.4 -27.4	N	18 59.3 +09.5				
09	318 39.2 -00.2	S	19 32.5 +00.6	269 52.2 +00.2	S	26 30.7 -00.3	138 32.0 -27.4	N	19 08.8 +09.4				
10	333 39.0 -00.1	S	19 33.1 +00.6	284 52.4 +00.3	S	26 30.4 -00.3	153 04.6 -27.5	N	19 18.2 +09.3				
11	348 38.9 -00.2	S	19 33.7 +00.5	299 52.7 +00.3	S	26 30.1 -00.2	167 37.1 -27.6	N	19 27.5 +09.2				
12	3 38.7 -00.1	S	19 34.2 +00.6	314 53.0 +00.2	S	26 29.9 -00.3	182 09.5 -27.6	N	19 36.7 +09.1				
13	18 38.6 -00.1	S	19 34.8 +00.6	329 53.2 +00.3	S	26 29.6 -00.3	196 41.9 -27.6	N	19 45.8 +09.0				
14	33 38.5 -00.2	S	19 35.4 +00.6	344 53.5 +00.2	S	26 29.3 -00.3	211 14.3 -27.7	N	19 54.8 +09.0				
15	48 38.3 -00.1	S	19 36.0 +00.5	359 53.7 +00.3	S	26 29.0 -00.3	225 46.6 -27.8	N	20 03.8 +08.8				
16	63 38.2 -00.2	S	19 36.5 +00.6	14 54.0 +00.3	S	26 28.7 -00.2	240 18.8 -27.8	N	20 12.6 +08.8				
17	78 38.0 -00.1	S	19 37.1 +00.6	29 54.3 +00.2	S	26 28.5 -00.3	254 51.0 -27.8	N	20 21.4 +08.7				
18	93 37.9 -00.2	S	19 37.7 +00.5	44 54.5 +00.3	S	26 28.2 -00.3	269 23.2 -27.9	N	20 30.1 +08.6				
19	108 37.7 -00.1	S	19 38.2 +00.6	59 54.8 +00.3	S	26 27.9 -00.3	283 55.3 -28.0	N	20 38.7 +08.5				
20	123 37.6 -00.1	S	19 38.8 +00.6	74 55.1 +00.2	S	26 27.6 -00.3	298 27.3 -28.0	N	20 47.2 +08.4				
21	138 37.5 -00.2	S	19 39.4 +00.6	89 55.3 +00.3	S	26 27.3 -00.3	312 59.3 -28.0	N	20 55.6 +08.3				
22	153 37.3 -00.1	S	19 40.0 +00.5	104 55.6 +00.3	S	26 27.0 -00.3	327 31.3 -28.2	N	21 03.9 +08.3				
23	168 37.2 -00.2	S	19 40.5 +00.6	119 55.9 +00.3	S	26 26.7 -00.2	342 03.1 -28.1	N	21 12.2 +08.1				
	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 00'3 00'3 00'3 00'3 00'3 00'3				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 00'3 00'3 00'3 00'3 00'3 00'3				HP 54'1 54'1 54'1 54'0 54'0 54'0					
	SHA 125° 125° 125° 125° 125° 124°			SHA 077° 076° 076° 076° 076° 076°				SHA 308° 306° 304° 302° 300° 298°					
	Greenwich Culmination Time: 11:45			Greenwich Culmination Time: 15:00				Greenwich Culmination Time: -1:00					

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	197 27.9 +00.8	S	15 29.5 +00.6	91 35.1 +02.2	S	14 32.4 -00.1	107 28.7 +02.3	S	19 01.3 +00.0				
01	212 28.7 +00.8	S	15 30.1 +00.5	106 37.3 +02.3	S	14 32.3 +00.0	122 31.0 +02.3	S	19 01.3 -00.1				
02	227 29.5 +00.8	S	15 30.6 +00.6	121 39.6 +02.2	S	14 32.3 -00.1	137 33.3 +02.3	S	19 01.2 +00.0				
03	242 30.3 +00.8	S	15 31.2 +00.5	136 41.8 +02.2	S	14 32.2 -00.1	152 35.6 +02.3	S	19 01.2 +00.0				
04	257 31.1 +00.7	S	15 31.7 +00.5	151 44.0 +02.2	S	14 32.1 -00.1	167 37.9 +02.3	S	19 01.2 -00.1				
05	272 31.8 +00.8	S	15 32.2 +00.6	166 46.2 +02.2	S	14 32.0 -00.1	182 40.2 +02.3	S	19 01.1 +00.0				
06	287 32.6 +00.8	S	15 32.8 +00.5	181 48.4 +02.3	S	14 31.9 -00.1	197 42.5 +02.3	S	19 01.1 -00.1				
07	302 33.4 +00.8	S	15 33.3 +00.5	196 50.7 +02.2	S	14 31.8 -00.1	212 44.8 +02.4	S	19 01.0 +00.0				
08	317 34.2 +00.8	S	15 33.8 +00.6	211 52.9 +02.2	S	14 31.7 -00.1	227 47.2 +02.3	S	19 01.0 +00.0				
09	332 35.0 +00.7	S	15 34.4 +00.5	226 55.1 +02.2	S	14 31.6 -00.1	242 49.5 +02.3	S	19 01.0 -00.1				
10	347 35.7 +00.8	S	15 34.9 +00.5	241 57.3 +02.2	S	14 31.5 -00.1	257 51.8 +02.3	S	19 00.9 +00.0				
11	2 36.5 +00.8	S	15 35.4 +00.6	256 59.5 +02.2	S	14 31.4 +00.0	272 54.1 +02.3	S	19 00.9 -00.1				
12	17 37.3 +00.8	S	15 36.0 +00.5	272 01.7 +02.3	S	14 31.4 -00.1	287 56.4 +02.3	S	19 00.8 +00.0				
13	32 38.1 +00.8	S	15 36.5 +00.5	287 04.0 +02.2	S	14 31.3 -00.1	302 58.7 +02.3	S	19 00.8 -00.1				
14	47 38.9 +00.7	S	15 37.0 +00.6	302 06.2 +02.2	S	14 31.2 -00.1	318 01.0 +02.3	S	19 00.7 +00.0				
15	62 39.6 +00.8	S	15 37.6 +00.5	317 08.4 +02.2	S	14 31.1 -00.1	333 03.3 +02.3	S	19 00.7 +00.0				
16	77 40.4 +00.8	S	15 38.1 +00.5	332 10.6 +02.2	S	14 31.0 -00.1	348 05.6 +02.3	S	19 00.7 -00.1				
17	92 41.2 +00.8	S	15 38.6 +00.6	347 12.8 +02.2	S	14 30.9 -00.1	3 07.9 +02.3	S	19 00.6 +00.0				
18	107 42.0 +00.8	S	15 39.2 +00.5	2 15.0 +02.3	S	14 30.8 -00.1	18 10.2 +02.3	S	19 00.6 -00.1				
19	122 42.8 +00.7	S	15 39.7 +00.5	17 17.3 +02.2	S	14 30.7 -00.1	33 12.5 +02.3	S	19 00.5 +00.0				
20	137 43.5 +00.8	S	15 40.2 +00.6	32 19.5 +02.2	S	14 30.6 -00.1	48 14.8 +02.3	S	19 00.5 +00.0				
21	152 44.3 +00.8	S	15 40.8 +00.5	47 21.7 +02.2	S	14 30.5 -00.1	63 17.1 +02.3	S	19 00.5 -00.1				
22	167 45.1 +00.8	S	15 41.3 +00.5	62 23.9 +02.2	S	14 30.4 +00.0	78 19.4 +02.3	S	19 00.4 +00.0				
23	182 45.9 +00.7	S	15 41.8 +00.6	77 26.1 +02.2	S	14 30.4 -00.1	93 21.7 +02.3	S	19 00.4 -00.1				
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22				UT 02 06 10 14 18 22					
	SD 00'0 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 139° 139° 139° 139° 139° 139°			SHA 033° 033° 033° 033° 033° 033°				SHA 049° 049° 049° 049° 049° 049°					
	Greenwich Culmination Time: 10:49			Greenwich Culmination Time: 17:51				Greenwich Culmination Time: 16:47					

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 37.0 -00.1	S	19 41.1 +00.6	134 56.2 +00.3	S	26 26.5 -00.3	356 35.0 -28.2	N	21 20.3 +08.0				
01	198 36.9 -00.2	S	19 41.7 +00.5	149 56.5 +00.2	S	26 26.2 -00.3	11 06.8 -28.3	N	21 28.3 +08.0				
02	213 36.7 -00.1	S	19 42.2 +00.6	164 56.7 +00.3	S	26 25.9 -00.3	25 38.5 -28.3	N	21 36.3 +07.8				
03	228 36.6 -00.2	S	19 42.8 +00.6	179 57.0 +00.3	S	26 25.6 -00.3	40 10.2 -28.4	N	21 44.1 +07.8				
04	243 36.4 -00.1	S	19 43.4 +00.5	194 57.3 +00.3	S	26 25.3 -00.3	54 41.8 -28.4	N	21 51.9 +07.6				
05	258 36.3 -00.2	S	19 43.9 +00.6	209 57.6 +00.3	S	26 25.0 -00.3	69 13.4 -28.4	N	21 59.5 +07.6				
06	273 36.1 -00.1	S	19 44.5 +00.5	224 57.9 +00.3	S	26 24.7 -00.3	83 45.0 -28.6	N	22 07.1 +07.5				
07	288 36.0 -00.2	S	19 45.0 +00.6	239 58.2 +00.3	S	26 24.4 -00.3	98 16.4 -28.5	N	22 14.6 +07.3				
08	303 35.8 -00.1	S	19 45.6 +00.6	254 58.5 +00.3	S	26 24.1 -00.3	112 47.9 -28.6	N	22 21.9 +07.3				
09	318 35.7 -00.2	S	19 46.2 +00.5	269 58.8 +00.3	S	26 23.8 -00.3	127 19.3 -28.7	N	22 29.2 +07.2				
10	333 35.5 -00.1	S	19 46.7 +00.6	284 59.1 +00.3	S	26 23.5 -00.2	141 50.6 -28.7	N	22 36.4 +07.0				
11	348 35.4 -00.2	S	19 47.3 +00.5	299 59.4 +00.3	S	26 23.3 -00.3	156 21.9 -28.8	N	22 43.4 +07.0				
12	3 35.2 -00.1	S	19 47.8 +00.6	314 59.7 +00.3	S	26 23.0 -00.3	170 53.1 -28.8	N	22 50.4 +06.8				
13	18 35.1 -00.2	S	19 48.4 +00.6	329 60.0 +00.3	S	26 22.7 -00.3	185 24.3 -28.9	N	22 57.2 +06.8				
14	33 34.9 -00.1	S	19 49.0 +00.5	345 00.3 +00.3	S	26 22.4 -00.3	199 55.4 -28.9	N	23 04.0 +06.7				
15	48 34.8 -00.2	S	19 49.5 +00.6	0 00.6 +00.3	S	26 22.1 -00.3	214 26.5 -28.9	N	23 10.7 +06.5				
16	63 34.6 -00.1	S	19 50.1 +00.5	15 00.9 +00.3	S	26 21.8 -00.3	228 57.6 -29.0	N	23 17.2 +06.4				
17	78 34.5 -00.2	S	19 50.6 +00.6	30 01.2 +00.3	S	26 21.5 -00.3	243 28.6 -29.1	N	23 23.6 +06.4				
18	93 34.3 -00.1	S	19 51.2 +00.5	45 01.5 +00.3	S	26 21.2 -00.3	257 59.5 -29.1	N	23 30.0 +06.2				
19	108 34.2 -00.2	S	19 51.7 +00.6	60 01.8 +00.3	S	26 20.9 -00.3	272 30.4 -29.2	N	23 36.2 +06.1				
20	123 34.0 -00.1	S	19 52.3 +00.5	75 02.1 +00.4	S	26 20.6 -00.3	287 01.2 -29.1	N	23 42.3 +06.0				
21	138 33.9 -00.2	S	19 52.8 +00.6	90 02.5 +00.3	S	26 20.3 -00.3	301 32.1 -29.3	N	23 48.3 +06.0				
22	153 33.7 -00.1	S	19 53.4 +00.6	105 02.8 +00.3	S	26 20.0 -00.4	316 02.8 -29.3	N	23 54.3 +05.8				
23	168 33.6 -00.2	S	19 54.0 +00.5	120 03.1 +00.3	S	26 19.6 -00.3	330 33.5 -29.3	N	24 00.1 +05.6				
	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 00'3 00'3 00'3 00'3 00'3 00'3			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 00'3 00'3 00'3 00'3 00'3 00'3			HP 54'0 54'0 54'0 54'0 53'9 53'9						
	SHA 124° 124° 124° 124° 124° 123°			SHA 076° 075° 075° 075° 075° 075°			SHA 296° 294° 292° 290° 288° 286°						
	Greenwich Culmination Time: 11:45			Greenwich Culmination Time: 14:59			Greenwich Culmination Time: 00:14						

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	197 46.6 +00.8	S	15 42.4 +00.5	92 28.3 +02.2	S	14 30.3 -00.1	108 24.0 +02.3	S	19 00.3 +00.0				
01	212 47.4 +00.8	S	15 42.9 +00.5	107 30.5 +02.3	S	14 30.2 -00.1	123 26.3 +02.3	S	19 00.3 +00.0				
02	227 48.2 +00.8	S	15 43.4 +00.5	122 32.8 +02.2	S	14 30.1 -00.1	138 28.6 +02.3	S	19 00.3 -00.1				
03	242 49.0 +00.7	S	15 43.9 +00.6	137 35.0 +02.2	S	14 30.0 -00.1	153 30.9 +02.3	S	19 00.2 +00.0				
04	257 49.7 +00.8	S	15 44.5 +00.5	152 37.2 +02.2	S	14 29.9 -00.1	168 33.2 +02.3	S	19 00.2 -00.1				
05	272 50.5 +00.8	S	15 45.0 +00.5	167 39.4 +02.2	S	14 29.8 -00.1	183 35.5 +02.3	S	19 00.1 +00.0				
06	287 51.3 +00.8	S	15 45.5 +00.6	182 41.6 +02.2	S	14 29.7 -00.1	198 37.8 +02.3	S	19 00.1 -00.1				
07	302 52.1 +00.7	S	15 46.1 +00.5	197 43.8 +02.2	S	14 29.6 -00.1	213 40.1 +02.3	S	19 00.0 +00.0				
08	317 52.8 +00.8	S	15 46.6 +00.5	212 46.0 +02.2	S	14 29.5 -00.1	228 42.4 +02.3	S	19 00.0 +00.0				
09	332 53.6 +00.8	S	15 47.1 +00.6	227 48.2 +02.3	S	14 29.4 -00.1	243 44.7 +02.3	S	18 60.0 -00.1				
10	347 54.4 +00.8	S	15 47.7 +00.5	242 50.5 +02.2	S	14 29.3 +00.0	258 47.0 +02.3	S	18 59.9 +00.0				
11	2 55.2 +00.7	S	15 48.2 +00.5	257 52.7 +02.2	S	14 29.3 -00.1	273 49.3 +02.3	S	18 59.9 -00.1				
12	17 55.9 +00.8	S	15 48.7 +00.5	272 54.9 +02.2	S	14 29.2 -00.1	288 51.6 +02.3	S	18 59.8 +00.0				
13	32 56.7 +00.8	S	15 49.2 +00.6	287 57.1 +02.2	S	14 29.1 -00.1	303 53.9 +02.3	S	18 59.8 -00.1				
14	47 57.5 +00.8	S	15 49.8 +00.5	302 59.3 +02.2	S	14 29.0 -00.1	318 56.2 +02.3	S	18 59.7 +00.0				
15	62 58.3 +00.7	S	15 50.3 +00.5	318 01.5 +02.2	S	14 28.9 -00.1	333 58.5 +02.3	S	18 59.7 +00.0				
16	77 59.0 +00.8	S	15 50.8 +00.6	333 03.7 +02.2	S	14 28.8 -00.1	349 00.8 +02.3	S	18 59.7 -00.1				
17	92 59.8 +00.8	S	15 51.4 +00.5	348 05.9 +02.2	S	14 28.7 -00.1	4 03.1 +02.3	S	18 59.6 +00.0				
18	108 00.6 +00.8	S	15 51.9 +00.5	3 08.1 +02.2	S	14 28.6 -00.1	19 05.4 +02.3	S	18 59.6 -00.1				
19	123 01.4 +00.7	S	15 52.4 +00.5	18 10.3 +02.2	S	14 28.5 -00.1	34 07.7 +02.3	S	18 59.5 +00.0				
20	138 02.1 +00.8	S	15 52.9 +00.6	33 12.5 +02.3	S	14 28.4 -00.1	49 10.0 +02.3	S	18 59.5 +00.0				
21	153 02.9 +00.8	S	15 53.5 +00.5	48 14.8 +02.2	S	14 28.3 -00.1	64 12.3 +02.3	S	18 59.5 -00.1				
22	168 03.7 +00.8	S	15 54.0 +00.5	63 17.0 +02.2	S	14 28.2 -00.1	79 14.6 +02.3	S	18 59.4 +00.0				
23	183 04.5 +00.7	S	15 54.5 +00.6	78 19.2 +02.2	S	14 28.1 -00.1	94 16.9 +02.3	S	18 59.4 -00.1				
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'0 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 138° 138° 138° 138° 138° 138°			SHA 033° 033° 033° 033° 033° 033°			SHA 049° 049° 049° 049° 049° 049°						
	Greenwich Culmination Time: 10:48			Greenwich Culmination Time: 17:47			Greenwich Culmination Time: 16:43						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 33.4 -00.2	S	19 54.5 +00.6	135 03.4 +00.4	S	26 19.3 -00.3	345 04.2 -29.4	N	24 05.7 +05.6	00			
01	198 33.2 -00.1	S	19 55.1 +00.5	150 03.8 +00.3	S	26 19.0 -00.3	359 34.8 -29.4	N	24 11.3 +05.5	01			
02	213 33.1 -00.2	S	19 55.6 +00.6	165 04.1 +00.3	S	26 18.7 -00.3	14 05.4 -29.5	N	24 16.8 +05.3	02			
03	228 32.9 -00.1	S	19 56.2 +00.5	180 04.4 +00.4	S	26 18.4 -00.3	28 35.9 -29.5	N	24 22.1 +05.3	03			
04	243 32.8 -00.2	S	19 56.7 +00.6	195 04.8 +00.3	S	26 18.1 -00.3	43 06.4 -29.5	N	24 27.4 +05.1	04			
05	258 32.6 -00.1	S	19 57.3 +00.5	210 05.1 +00.3	S	26 17.8 -00.3	57 36.9 -29.6	N	24 32.5 +05.0	05			
06	273 32.5 -00.2	S	19 57.8 +00.6	225 05.4 +00.4	S	26 17.5 -00.3	72 07.3 -29.6	N	24 37.5 +04.9	06			
07	288 32.3 -00.1	S	19 58.4 +00.5	240 05.8 +00.3	S	26 17.2 -00.3	86 37.7 -29.7	N	24 42.4 +04.8	07			
08	303 32.2 -00.2	S	19 58.9 +00.5	255 06.1 +00.4	S	26 16.9 -00.3	101 08.0 -29.7	N	24 47.2 +04.7	08			
09	318 32.0 -00.2	S	19 59.4 +00.6	270 06.5 +00.3	S	26 16.6 -00.3	115 38.3 -29.8	N	24 51.9 +04.6	09			
10	333 31.8 -00.1	S	19 60.0 +00.5	285 06.8 +00.3	S	26 16.3 -00.4	130 08.5 -29.8	N	24 56.5 +04.4	10			
11	348 31.7 -00.2	S	20 00.5 +00.6	300 07.1 +00.4	S	26 15.9 -00.3	144 38.7 -29.8	N	25 00.9 +04.4	11			
12	3 31.5 -00.1	S	20 01.1 +00.5	315 07.5 +00.3	S	26 15.6 -00.3	159 08.9 -29.9	N	25 05.3 +04.2	12			
13	18 31.4 -00.2	S	20 01.6 +00.6	330 07.8 +00.4	S	26 15.3 -00.3	173 39.0 -29.9	N	25 09.5 +04.1	13			
14	33 31.2 -00.2	S	20 02.2 +00.5	345 08.2 +00.3	S	26 15.0 -00.3	188 09.1 -29.9	N	25 13.6 +03.9	14			
15	48 31.0 -00.1	S	20 02.7 +00.6	0 08.5 +00.4	S	26 14.7 -00.3	202 39.2 -30.0	N	25 17.5 +03.9	15			
16	63 30.9 -00.2	S	20 03.3 +00.5	15 08.9 +00.4	S	26 14.4 -00.4	217 09.2 -30.0	N	25 21.4 +03.7	16			
17	78 30.7 -00.1	S	20 03.8 +00.5	30 09.3 +00.3	S	26 14.0 -00.3	231 39.2 -30.0	N	25 25.1 +03.7	17			
18	93 30.6 -00.2	S	20 04.3 +00.6	45 09.6 +00.4	S	26 13.7 -00.3	246 09.2 -30.1	N	25 28.8 +03.5	18			
19	108 30.4 -00.2	S	20 04.9 +00.5	60 10.0 +00.4	S	26 13.4 -00.3	260 39.1 -30.1	N	25 32.3 +03.4	19			
20	123 30.2 -00.1	S	20 05.4 +00.6	75 10.4 +00.3	S	26 13.1 -00.3	275 09.0 -30.2	N	25 35.7 +03.2	20			
21	138 30.1 -00.2	S	20 06.0 +00.5	90 10.7 +00.4	S	26 12.8 -00.4	289 38.8 -30.1	N	25 38.9 +03.2	21			
22	153 29.9 -00.1	S	20 06.5 +00.5	105 11.1 +00.4	S	26 12.4 -00.3	304 08.7 -30.2	N	25 42.1 +03.0	22			
23	168 29.8 -00.2	S	20 07.0 +00.6	120 11.5 +00.3	S	26 12.1 -00.3	318 38.5 -30.3	N	25 45.1 +02.9	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 00'3 00'3 00'3 00'3 00'3 00'3			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 00'3 00'3 00'3 00'3 00'3 00'3			HP 53'9 53'9 53'9 54'0 54'0 54'0						
	SHA 123° 123° 123° 123° 123° 122°			SHA 075° 075° 074° 074° 074° 074°			SHA 284° 282° 280° 277° 275° 273°						
	Greenwich Culmination Time: 11:45			Greenwich Culmination Time: 14:59			Greenwich Culmination Time: 01:01						

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	198 05.2 +00.8	S	15 55.1 +00.5	93 21.4 +02.2	S	14 28.0 -00.1	109 19.2 +02.3	S	18 59.3 +00.0	00			
01	213 06.0 +00.8	S	15 55.6 +00.5	108 23.6 +02.2	S	14 27.9 +00.0	124 21.5 +02.3	S	18 59.3 -00.1	01			
02	228 06.8 +00.7	S	15 56.1 +00.5	123 25.8 +02.2	S	14 27.9 -00.1	139 23.8 +02.3	S	18 59.2 +00.0	02			
03	243 07.5 +00.8	S	15 56.6 +00.6	138 28.0 +02.2	S	14 27.8 -00.1	154 26.1 +02.3	S	18 59.2 +00.0	03			
04	258 08.3 +00.8	S	15 57.2 +00.5	153 30.2 +02.2	S	14 27.7 -00.1	169 28.4 +02.3	S	18 59.2 -00.1	04			
05	273 09.1 +00.8	S	15 57.7 +00.5	168 32.4 +02.2	S	14 27.6 -00.1	184 30.7 +02.3	S	18 59.1 +00.0	05			
06	288 09.9 +00.7	S	15 58.2 +00.5	183 34.6 +02.2	S	14 27.5 -00.1	199 33.0 +02.3	S	18 59.1 -00.1	06			
07	303 10.6 +00.8	S	15 58.7 +00.6	198 36.8 +02.2	S	14 27.4 -00.1	214 35.3 +02.3	S	18 59.0 +00.0	07			
08	318 11.4 +00.8	S	15 59.3 +00.5	213 39.0 +02.2	S	14 27.3 -00.1	229 37.6 +02.3	S	18 59.0 -00.1	08			
09	333 12.2 +00.7	S	15 59.8 +00.5	228 41.2 +02.2	S	14 27.2 -00.1	244 39.9 +02.3	S	18 58.9 +00.0	09			
10	348 12.9 +00.8	S	16 00.3 +00.5	243 43.4 +02.2	S	14 27.1 -00.1	259 42.2 +02.3	S	18 58.9 +00.0	10			
11	3 13.7 +00.8	S	16 00.8 +00.6	258 45.6 +02.2	S	14 27.0 -00.1	274 44.5 +02.3	S	18 58.9 -00.1	11			
12	18 14.5 +00.7	S	16 01.4 +00.5	273 47.8 +02.2	S	14 26.9 -00.1	289 46.8 +02.3	S	18 58.8 +00.0	12			
13	33 15.2 +00.8	S	16 01.9 +00.5	288 50.0 +02.2	S	14 26.8 -00.1	304 49.1 +02.2	S	18 58.8 -00.1	13			
14	48 16.0 +00.8	S	16 02.4 +00.5	303 52.2 +02.3	S	14 26.7 -00.1	319 51.3 +02.3	S	18 58.7 +00.0	14			
15	63 16.8 +00.7	S	16 02.9 +00.6	318 54.5 +02.2	S	14 26.6 -00.1	334 53.6 +02.3	S	18 58.7 -00.1	15			
16	78 17.5 +00.8	S	16 03.5 +00.5	333 56.7 +02.2	S	14 26.5 -00.1	349 55.9 +02.3	S	18 58.6 +00.0	16			
17	93 18.3 +00.8	S	16 04.0 +00.5	348 58.9 +02.2	S	14 26.4 -00.1	4 58.2 +02.3	S	18 58.6 +00.0	17			
18	108 19.1 +00.7	S	16 04.5 +00.5	4 01.1 +02.2	S	14 26.3 -00.1	20 00.5 +02.3	S	18 58.6 -00.1	18			
19	123 19.8 +00.8	S	16 05.0 +00.5	19 03.3 +02.2	S	14 26.2 -00.1	35 02.8 +02.3	S	18 58.5 +00.0	19			
20	138 20.6 +00.8	S	16 05.5 +00.6	34 05.5 +02.2	S	14 26.1 -00.1	50 05.1 +02.3	S	18 58.5 -00.1	20			
21	153 21.4 +00.8	S	16 06.1 +00.5	49 07.7 +02.2	S	14 26.0 +00.0	65 07.4 +02.3	S	18 58.4 +00.0	21			
22	168 22.2 +00.7	S	16 06.6 +00.5	64 09.9 +02.2	S	14 26.0 -00.1	80 09.7 +02.3	S	18 58.4 -00.1	22			
23	183 22.9 +00.8	S	16 07.1 +00.5	79 12.1 +02.2	S	14 25.9 -00.1	95 12.0 +02.3	S	18 58.3 +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 00'0 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 138° 138° 138° 137° 137° 137°			SHA 033° 033° 033° 033° 033° 033°			SHA 049° 049° 049° 049° 049° 049°						
	Greenwich Culmination Time: 10:47			Greenwich Culmination Time: 17:43			Greenwich Culmination Time: 16:40						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 29.6 -00.2	S	20 07.6 +00.5	135 11.8 +00.4	S	26 11.8 -00.3	333 08.2 -30.2	N	25 48.0 +02.8	00			
01	198 29.4 -00.1	S	20 08.1 +00.5	150 12.2 +00.4	S	26 11.5 -00.3	347 38.0 -30.3	N	25 50.8 +02.6	01			
02	213 29.3 -00.2	S	20 08.6 +00.6	165 12.6 +00.4	S	26 11.2 -00.4	2 07.7 -30.3	N	25 53.4 +02.6	02			
03	228 29.1 -00.2	S	20 09.2 +00.5	180 13.0 +00.3	S	26 10.8 -00.3	16 37.4 -30.4	N	25 56.0 +02.4	03			
04	243 28.9 -00.1	S	20 09.7 +00.5	195 13.3 +00.4	S	26 10.5 -00.3	31 07.0 -30.3	N	25 58.4 +02.3	04			
05	258 28.8 -00.2	S	20 10.2 +00.6	210 13.7 +00.4	S	26 10.2 -00.3	45 36.7 -30.4	N	26 00.7 +02.1	05			
06	273 28.6 -00.2	S	20 10.8 +00.5	225 14.1 +00.4	S	26 09.9 -00.4	60 06.3 -30.4	N	26 02.8 +02.1	06			
07	288 28.4 -00.1	S	20 11.3 +00.5	240 14.5 +00.4	S	26 09.5 -00.3	74 35.9 -30.4	N	26 04.9 +01.9	07			
08	303 28.3 -00.2	S	20 11.8 +00.6	255 14.9 +00.4	S	26 09.2 -00.3	89 05.5 -30.5	N	26 06.8 +01.8	08			
09	318 28.1 -00.2	S	20 12.4 +00.5	270 15.3 +00.4	S	26 08.9 -00.4	103 35.0 -30.5	N	26 08.6 +01.6	09			
10	333 27.9 -00.1	S	20 12.9 +00.5	285 15.7 +00.4	S	26 08.5 -00.3	118 04.5 -30.5	N	26 10.2 +01.6	10			
11	348 27.8 -00.2	S	20 13.4 +00.6	300 16.1 +00.4	S	26 08.2 -00.3	132 34.0 -30.5	N	26 11.8 +01.4	11			
12	3 27.6 -00.2	S	20 14.0 +00.5	315 16.5 +00.4	S	26 07.9 -00.4	147 03.5 -30.5	N	26 13.2 +01.3	12			
13	18 27.4 -00.1	S	20 14.5 +00.5	330 16.9 +00.4	S	26 07.5 -00.3	161 33.0 -30.5	N	26 14.5 +01.2	13			
14	33 27.3 -00.2	S	20 15.0 +00.5	345 17.3 +00.4	S	26 07.2 -00.3	176 02.5 -30.6	N	26 15.7 +01.0	14			
15	48 27.1 -00.2	S	20 15.5 +00.6	0 17.7 +00.4	S	26 06.9 -00.3	190 31.9 -30.6	N	26 16.7 +00.9	15			
16	63 26.9 -00.1	S	20 16.1 +00.5	15 18.1 +00.4	S	26 06.6 -00.4	205 01.3 -30.5	N	26 17.6 +00.8	16			
17	78 26.8 -00.2	S	20 16.6 +00.5	30 18.5 +00.4	S	26 06.2 -00.3	219 30.8 -30.6	N	26 18.4 +00.7	17			
18	93 26.6 -00.2	S	20 17.1 +00.5	45 18.9 +00.4	S	26 05.9 -00.4	234 00.2 -30.7	N	26 19.1 +00.5	18			
19	108 26.4 -00.1	S	20 17.6 +00.6	60 19.3 +00.4	S	26 05.5 -00.3	248 29.5 -30.6	N	26 19.6 +00.4	19			
20	123 26.3 -00.2	S	20 18.2 +00.5	75 19.7 +00.4	S	26 05.2 -00.3	262 58.9 -30.6	N	26 20.0 +00.3	20			
21	138 26.1 -00.2	S	20 18.7 +00.5	90 20.1 +00.5	S	26 04.9 -00.4	277 28.3 -30.7	N	26 20.3 +00.2	21			
22	153 25.9 -00.2	S	20 19.2 +00.5	105 20.6 +00.4	S	26 04.5 -00.3	291 57.6 -30.6	N	26 20.5 +00.0	22			
23	168 25.7 -00.1	S	20 19.7 +00.6	120 21.0 +00.4	S	26 04.2 -00.3	306 27.0 -30.7	N	26 20.5 -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 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'3 00'3 00'3 00'3 00'3 00'3			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 00'3 00'3 00'3 00'3 00'3 00'3			HP 54'0 54'0 54'0 54'1 54'1 54'1						
	SHA 122° 122° 122° 122° 122° 121°			SHA 074° 074° 074° 074° 073° 073°			SHA 271° 269° 266° 264° 262° 260°						
	Greenwich Culmination Time: 11:46			Greenwich Culmination Time: 14:58			Greenwich Culmination Time: 01:51						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	198 23.7 +00.8	S	16 07.6 +00.6	94 14.3 +02.2	S	14 25.8 -00.1	110 14.3 +02.3	S	18 58.3 +00.0	00			
01	213 24.5 +00.7	S	16 08.2 +00.5	109 16.5 +02.2	S	14 25.7 -00.1	125 16.6 +02.3	S	18 58.3 -00.1	01			
02	228 25.2 +00.8	S	16 08.7 +00.5	124 18.7 +02.2	S	14 25.6 -00.1	140 18.9 +02.3	S	18 58.2 +00.0	02			
03	243 26.0 +00.7	S	16 09.2 +00.5	139 20.9 +02.2	S	14 25.5 -00.1	155 21.2 +02.3	S	18 58.2 -00.1	03			
04	258 26.7 +00.8	S	16 09.7 +00.5	154 23.1 +02.2	S	14 25.4 -00.1	170 23.5 +02.3	S	18 58.1 +00.0	04			
05	273 27.5 +00.8	S	16 10.2 +00.6	169 25.3 +02.2	S	14 25.3 -00.1	185 25.8 +02.3	S	18 58.1 -00.1	05			
06	288 28.3 +00.7	S	16 10.8 +00.5	184 27.5 +02.2	S	14 25.2 -00.1	200 28.1 +02.3	S	18 58.0 +00.0	06			
07	303 29.0 +00.8	S	16 11.3 +00.5	199 29.7 +02.2	S	14 25.1 -00.1	215 30.4 +02.3	S	18 58.0 -00.1	07			
08	318 29.8 +00.8	S	16 11.8 +00.5	214 31.9 +02.2	S	14 25.0 -00.1	230 32.7 +02.2	S	18 57.9 +00.0	08			
09	333 30.6 +00.7	S	16 12.3 +00.5	229 34.1 +02.2	S	14 24.9 -00.1	245 34.9 +02.3	S	18 57.9 +00.0	09			
10	348 31.3 +00.8	S	16 12.8 +00.6	244 36.3 +02.2	S	14 24.8 -00.1	260 37.2 +02.3	S	18 57.9 -00.1	10			
11	3 32.1 +00.8	S	16 13.4 +00.5	259 38.5 +02.1	S	14 24.7 -00.1	275 39.5 +02.3	S	18 57.8 +00.0	11			
12	18 32.9 +00.7	S	16 13.9 +00.5	274 40.6 +02.2	S	14 24.6 -00.1	290 41.8 +02.3	S	18 57.8 -00.1	12			
13	33 33.6 +00.8	S	16 14.4 +00.5	289 42.8 +02.2	S	14 24.5 -00.1	305 44.1 +02.3	S	18 57.7 +00.0	13			
14	48 34.4 +00.8	S	16 14.9 +00.5	304 45.0 +02.2	S	14 24.4 -00.1	320 46.4 +02.3	S	18 57.7 -00.1	14			
15	63 35.2 +00.7	S	16 15.4 +00.6	319 47.2 +02.2	S	14 24.3 -00.1	335 48.7 +02.3	S	18 57.6 +00.0	15			
16	78 35.9 +00.8	S	16 16.0 +00.5	334 49.4 +02.2	S	14 24.2 -00.1	350 51.0 +02.3	S	18 57.6 +00.0	16			
17	93 36.7 +00.7	S	16 16.5 +00.5	349 51.6 +02.2	S	14 24.1 -00.1	5 53.3 +02.3	S	18 57.6 -00.1	17			
18	108 37.4 +00.8	S	16 17.0 +00.5	4 53.8 +02.2	S	14 24.0 -00.1	20 55.6 +02.3	S	18 57.5 +00.0	18			
19	123 38.2 +00.8	S	16 17.5 +00.5	19 56.0 +02.2	S	14 23.9 -00.1	35 57.9 +02.3	S	18 57.5 -00.1	19			
20	138 39.0 +00.7	S	16 18.0 +00.5	34 58.2 +02.2	S	14 23.8 -00.1	51 00.2 +02.3	S	18 57.4 +00.0	20			
21	153 39.7 +00.8	S	16 18.5 +00.6	50 00.4 +02.2	S	14 23.7 -00.1	66 02.5 +02.2	S	18 57.4 -00.1	21			
22	168 40.5 +00.8	S	16 19.1 +00.5	65 02.6 +02.2	S	14 23.6 -00.1	81 04.7 +02.3	S	18 57.3 +00.0	22			
23	183 41.3 +00.7	S	16 19.6 +00.5	80 04.8 +02.2	S	14 23.5 -00.1	96 07.0 +02.3	S	18 57.3 -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 137° 137° 137° 137° 137° 137°			SHA 033° 033° 033° 033° 033° 033°			SHA 049° 049° 049° 049° 049° 049°						
	Greenwich Culmination Time: 10:45			Greenwich Culmination Time: 17:40			Greenwich Culmination Time: 16:36						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 25.6 -00.2	S	20 20.3 +00.5	135 21.4 +00.4	S	26 03.9 -00.4	320 56.3 -30.6	N	26 20.4 -00.2	00			
01	198 25.4 -00.2	S	20 20.8 +00.5	150 21.8 +00.5	S	26 03.5 -00.3	335 25.7 -30.7	N	26 20.2 -00.3	01			
02	213 25.2 -00.1	S	20 21.3 +00.5	165 22.3 +00.4	S	26 03.2 -00.4	349 55.0 -30.6	N	26 19.9 -00.5	02			
03	228 25.1 -00.2	S	20 21.8 +00.5	180 22.7 +00.4	S	26 02.8 -00.3	4 24.4 -30.7	N	26 19.4 -00.6	03			
04	243 24.9 -00.2	S	20 22.3 +00.5	195 23.1 +00.5	S	26 02.5 -00.4	18 53.7 -30.7	N	26 18.8 -00.8	04			
05	258 24.7 -00.2	S	20 22.8 +00.6	210 23.6 +00.4	S	26 02.1 -00.3	33 23.0 -30.7	N	26 18.0 -00.8	05			
06	273 24.5 -00.1	S	20 23.4 +00.5	225 24.0 +00.4	S	26 01.8 -00.3	47 52.3 -30.6	N	26 17.2 -01.0	06			
07	288 24.4 -00.2	S	20 23.9 +00.5	240 24.4 +00.5	S	26 01.5 -00.4	62 21.7 -30.7	N	26 16.2 -01.1	07			
08	303 24.2 -00.2	S	20 24.4 +00.5	255 24.9 +00.4	S	26 01.1 -00.3	76 51.0 -30.7	N	26 15.1 -01.2	08			
09	318 24.0 -00.2	S	20 24.9 +00.5	270 25.3 +00.5	S	26 00.8 -00.4	91 20.3 -30.7	N	26 13.9 -01.4	09			
10	333 23.8 -00.1	S	20 25.4 +00.5	285 25.8 +00.4	S	26 00.4 -00.3	105 49.6 -30.6	N	26 12.5 -01.5	10			
11	348 23.7 -00.2	S	20 25.9 +00.6	300 26.2 +00.4	S	26 00.1 -00.4	120 19.0 -30.7	N	26 11.0 -01.6	11			
12	3 23.5 -00.2	S	20 26.5 +00.5	315 26.6 +00.5	S	25 59.7 -00.3	134 48.3 -30.7	N	26 09.4 -01.8	12			
13	18 23.3 -00.2	S	20 27.0 +00.5	330 27.1 +00.5	S	25 59.4 -00.4	149 17.6 -30.6	N	26 07.6 -01.8	13			
14	33 23.1 -00.1	S	20 27.5 +00.5	345 27.6 +00.4	S	25 59.0 -00.3	163 47.0 -30.6	N	26 05.8 -02.0	14			
15	48 23.0 -00.2	S	20 28.0 +00.5	0 28.0 +00.5	S	25 58.7 -00.4	178 16.4 -30.7	N	26 03.8 -02.2	15			
16	63 22.8 -00.2	S	20 28.5 +00.5	15 28.5 +00.4	S	25 58.3 -00.3	192 45.7 -30.6	N	26 01.6 -02.2	16			
17	78 22.6 -00.2	S	20 29.0 +00.5	30 28.9 +00.5	S	25 58.0 -00.4	207 15.1 -30.6	N	25 59.4 -02.4	17			
18	93 22.4 -00.1	S	20 29.5 +00.5	45 29.4 +00.4	S	25 57.6 -00.3	221 44.5 -30.6	N	25 57.0 -02.5	18			
19	108 22.3 -00.2	S	20 30.0 +00.5	60 29.8 +00.5	S	25 57.3 -00.4	236 13.9 -30.6	N	25 54.5 -02.6	19			
20	123 22.1 -00.2	S	20 30.5 +00.5	75 30.3 +00.5	S	25 56.9 -00.3	250 43.3 -30.6	N	25 51.9 -02.8	20			
21	138 21.9 -00.2	S	20 31.0 +00.6	90 30.8 +00.5	S	25 56.6 -00.4	265 12.7 -30.6	N	25 49.1 -02.9	21			
22	153 21.7 -00.2	S	20 31.6 +00.5	105 31.3 +00.4	S	25 56.2 -00.3	279 42.1 -30.5	N	25 46.2 -03.0	22			
23	168 21.5 -00.1	S	20 32.1 +00.5	120 31.7 +00.5	S	25 55.9 -00.4	294 11.6 -30.6	N	25 43.2 -03.1	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 00'3 00'3 00'3 00'3 00'3 00'3			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 00'3 00'3 00'3 00'3 00'3 00'3			HP 54'1 54'2 54'2 54'3 54'3 54'4						
	SHA 121° 121° 121° 121° 120° 120°			SHA 073° 073° 073° 073° 073° 072°			SHA 258° 255° 253° 251° 249° 247°						
	Greenwich Culmination Time: 11:46			Greenwich Culmination Time: 14:58			Greenwich Culmination Time: 02:41						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	198 42.0 +00.8	S	16 20.1 +00.5	95 07.0 +02.2	S	14 23.4 -00.1	111 09.3 +02.3	S	18 57.2 +00.0	00			
01	213 42.8 +00.7	S	16 20.6 +00.5	110 09.2 +02.2	S	14 23.3 -00.1	126 11.6 +02.3	S	18 57.2 +00.0	01			
02	228 43.5 +00.8	S	16 21.1 +00.5	125 11.4 +02.2	S	14 23.2 -00.1	141 13.9 +02.3	S	18 57.2 -00.1	02			
03	243 44.3 +00.8	S	16 21.6 +00.6	140 13.6 +02.2	S	14 23.1 -00.1	156 16.2 +02.3	S	18 57.1 +00.0	03			
04	258 45.1 +00.7	S	16 22.2 +00.5	155 15.8 +02.2	S	14 23.0 -00.1	171 18.5 +02.3	S	18 57.1 -00.1	04			
05	273 45.8 +00.8	S	16 22.7 +00.5	170 18.0 +02.2	S	14 22.9 -00.1	186 20.8 +02.3	S	18 57.0 +00.0	05			
06	288 46.6 +00.7	S	16 23.2 +00.5	185 20.2 +02.1	S	14 22.8 -00.1	201 23.1 +02.3	S	18 57.0 -00.1	06			
07	303 47.3 +00.8	S	16 23.7 +00.5	200 22.3 +02.2	S	14 22.7 -00.1	216 25.4 +02.3	S	18 56.9 +00.0	07			
08	318 48.1 +00.8	S	16 24.2 +00.5	215 24.5 +02.2	S	14 22.6 -00.1	231 27.7 +02.2	S	18 56.9 -00.1	08			
09	333 48.9 +00.7	S	16 24.7 +00.6	230 26.7 +02.2	S	14 22.5 -00.1	246 29.9 +02.3	S	18 56.8 +00.0	09			
10	348 49.6 +00.8	S	16 25.3 +00.5	245 28.9 +02.2	S	14 22.4 -00.1	261 32.2 +02.3	S	18 56.8 +00.0	10			
11	3 50.4 +00.7	S	16 25.8 +00.5	260 31.1 +02.2	S	14 22.3 -00.1	276 34.5 +02.3	S	18 56.8 -00.1	11			
12	18 51.1 +00.8	S	16 26.3 +00.5	275 33.3 +02.2	S	14 22.2 -00.1	291 36.8 +02.3	S	18 56.7 +00.0	12			
13	33 51.9 +00.8	S	16 26.8 +00.5	290 35.5 +02.2	S	14 22.1 -00.1	306 39.1 +02.3	S	18 56.7 -00.1	13			
14	48 52.7 +00.7	S	16 27.3 +00.5	305 37.7 +02.2	S	14 22.0 -00.1	321 41.4 +02.3	S	18 56.6 +00.0	14			
15	63 53.4 +00.8	S	16 27.8 +00.5	320 39.9 +02.2	S	14 21.9 -00.1	336 43.7 +02.3	S	18 56.6 -00.1	15			
16	78 54.2 +00.7	S	16 28.3 +00.6	335 42.1 +02.1	S	14 21.8 -00.1	351 46.0 +02.3	S	18 56.5 +00.0	16			
17	93 54.9 +00.8	S	16 28.9 +00.5	350 44.2 +02.2	S	14 21.7 -00.1	6 48.3 +02.2	S	18 56.5 -00.1	17			
18	108 55.7 +00.7	S	16 29.4 +00.5	5 46.4 +02.2	S	14 21.6 -00.1	21 50.5 +02.3	S	18 56.4 +00.0	18			
19	123 56.4 +00.8	S	16 29.9 +00.5	20 48.6 +02.2	S	14 21.5 -00.1	36 52.8 +02.3	S	18 56.4 -00.1	19			
20	138 57.2 +00.8	S	16 30.4 +00.5	35 50.8 +02.2	S	14 21.4 -00.1	51 55.1 +02.3	S	18 56.3 +00.0	20			
21	153 58.0 +00.7	S	16 30.9 +00.5	50 53.0 +02.2	S	14 21.3 -00.1	66 57.4 +02.3	S	18 56.3 +00.0	21			
22	168 58.7 +00.8	S	16 31.4 +00.5	65 55.2 +02.2	S	14 21.2 -00.1	81 59.7 +02.3	S	18 56.3 -00.1	22			
23	183 59.5 +00.7	S	16 31.9 +00.5	80 57.4 +02.2	S	14 21.1 -00.1	97 02.0 +02.3	S	18 56.2 +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 00'0 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 136° 136° 136° 136° 136° 136°			SHA 033° 033° 033° 033° 033° 033°			SHA 049° 049° 049° 049° 049° 049°						
	Greenwich Culmination Time: 10:44			Greenwich Culmination Time: 17:36			Greenwich Culmination Time: 16:32						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 21.4 -00.2	S	20 32.6 +00.5	135 32.2 +00.5	S	25 55.5 -00.3	308 41.0 -30.5	N	25 40.1 -03.3	00			
01	198 21.2 -00.2	S	20 33.1 +00.5	150 32.7 +00.5	S	25 55.2 -00.4	323 10.5 -30.5	N	25 36.8 -03.3	01			
02	213 21.0 -00.2	S	20 33.6 +00.5	165 33.2 +00.4	S	25 54.8 -00.4	337 40.0 -30.5	N	25 33.5 -03.6	02			
03	228 20.8 -00.2	S	20 34.1 +00.5	180 33.6 +00.5	S	25 54.4 -00.3	352 09.5 -30.5	N	25 29.9 -03.6	03			
04	243 20.6 -00.1	S	20 34.6 +00.5	195 34.1 +00.5	S	25 54.1 -00.4	6 39.0 -30.4	N	25 26.3 -03.7	04			
05	258 20.5 -00.2	S	20 35.1 +00.5	210 34.6 +00.5	S	25 53.7 -00.3	21 08.6 -30.4	N	25 22.6 -03.9	05			
06	273 20.3 -00.2	S	20 35.6 +00.5	225 35.1 +00.5	S	25 53.4 -00.4	35 38.2 -30.5	N	25 18.7 -04.0	06			
07	288 20.1 -00.2	S	20 36.1 +00.5	240 35.6 +00.5	S	25 53.0 -00.4	50 07.7 -30.3	N	25 14.7 -04.1	07			
08	303 19.9 -00.2	S	20 36.6 +00.5	255 36.1 +00.5	S	25 52.6 -00.3	64 37.4 -30.4	N	25 10.6 -04.3	08			
09	318 19.7 -00.2	S	20 37.1 +00.5	270 36.6 +00.5	S	25 52.3 -00.4	79 07.0 -30.4	N	25 06.3 -04.4	09			
10	333 19.5 -00.1	S	20 37.6 +00.5	285 37.1 +00.5	S	25 51.9 -00.3	93 36.6 -30.3	N	25 01.9 -04.5	10			
11	348 19.4 -00.2	S	20 38.1 +00.5	300 37.6 +00.5	S	25 51.6 -00.4	108 06.3 -30.3	N	24 57.4 -04.6	11			
12	3 19.2 -00.2	S	20 38.6 +00.5	315 38.1 +00.5	S	25 51.2 -00.4	122 36.0 -30.3	N	24 52.8 -04.7	12			
13	18 19.0 -00.2	S	20 39.1 +00.5	330 38.6 +00.5	S	25 50.8 -00.3	137 05.7 -30.2	N	24 48.1 -04.9	13			
14	33 18.8 -00.2	S	20 39.6 +00.5	345 39.1 +00.5	S	25 50.5 -00.4	151 35.5 -30.2	N	24 43.2 -04.9	14			
15	48 18.6 -00.2	S	20 40.1 +00.5	0 39.6 +00.5	S	25 50.1 -00.4	166 05.3 -30.2	N	24 38.3 -05.1	15			
16	63 18.4 -00.1	S	20 40.6 +00.5	15 40.1 +00.5	S	25 49.7 -00.3	180 35.1 -30.2	N	24 33.2 -05.3	16			
17	78 18.3 -00.2	S	20 41.1 +00.5	30 40.6 +00.5	S	25 49.4 -00.4	195 04.9 -30.2	N	24 27.9 -05.3	17			
18	93 18.1 -00.2	S	20 41.6 +00.4	45 41.1 +00.5	S	25 49.0 -00.4	209 34.7 -30.1	N	24 22.6 -05.5	18			
19	108 17.9 -00.2	S	20 42.0 +00.5	60 41.6 +00.6	S	25 48.6 -00.3	224 04.6 -30.1	N	24 17.1 -05.5	19			
20	123 17.7 -00.2	S	20 42.5 +00.5	75 42.2 +00.5	S	25 48.3 -00.4	238 34.5 -30.1	N	24 11.6 -05.7	20			
21	138 17.5 -00.2	S	20 43.0 +00.5	90 42.7 +00.5	S	25 47.9 -00.4	253 04.4 -30.0	N	24 05.9 -05.8	21			
22	153 17.3 -00.2	S	20 43.5 +00.5	105 43.2 +00.5	S	25 47.5 -00.3	267 34.4 -30.0	N	24 00.1 -06.0	22			
23	168 17.1 -00.1	S	20 44.0 +00.5	120 43.7 +00.6	S	25 47.2 -00.4	282 04.4 -30.0	N	23 54.1 -06.0	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 00'3 00'3 00'3 00'3 00'3 00'3			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 00'3 00'3 00'3 00'3 00'3 00'3			HP 54'4 54'5 54'5 54'6 54'7 54'8						
	SHA 120° 120° 120° 120° 119° 119°			SHA 072° 072° 072° 072° 072° 072°			SHA 244° 242° 240° 238° 236° 233°						
	Greenwich Culmination Time: 11:46			Greenwich Culmination Time: 14:57			Greenwich Culmination Time: 03:32						
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	199 00.2 +00.8	S	16 32.4 +00.6	95 59.6 +02.2	S	14 21.0 -00.1	112 04.3 +02.3	S	18 56.2 -00.1	00			
01	214 01.0 +00.7	S	16 33.0 +00.5	111 01.8 +02.1	S	14 20.9 -00.1	127 06.6 +02.3	S	18 56.1 +00.0	01			
02	229 01.7 +00.8	S	16 33.5 +00.5	126 03.9 +02.2	S	14 20.8 -00.1	142 08.9 +02.2	S	18 56.1 -00.1	02			
03	244 02.5 +00.8	S	16 34.0 +00.5	141 06.1 +02.2	S	14 20.7 -00.1	157 11.1 +02.3	S	18 56.0 +00.0	03			
04	259 03.3 +00.7	S	16 34.5 +00.5	156 08.3 +02.2	S	14 20.6 -00.1	172 13.4 +02.3	S	18 56.0 -00.1	04			
05	274 04.0 +00.8	S	16 35.0 +00.5	171 10.5 +02.2	S	14 20.5 -00.1	187 15.7 +02.3	S	18 55.9 +00.0	05			
06	289 04.8 +00.7	S	16 35.5 +00.5	186 12.7 +02.2	S	14 20.4 -00.1	202 18.0 +02.3	S	18 55.9 +00.0	06			
07	304 05.5 +00.8	S	16 36.0 +00.5	201 14.9 +02.2	S	14 20.3 -00.1	217 20.3 +02.3	S	18 55.9 -00.1	07			
08	319 06.3 +00.7	S	16 36.5 +00.5	216 17.1 +02.1	S	14 20.2 -00.1	232 22.6 +02.3	S	18 55.8 +00.0	08			
09	334 07.0 +00.8	S	16 37.0 +00.6	231 19.2 +02.2	S	14 20.1 -00.1	247 24.9 +02.2	S	18 55.8 -00.1	09			
10	349 07.8 +00.7	S	16 37.6 +00.5	246 21.4 +02.2	S	14 20.0 -00.1	262 27.1 +02.3	S	18 55.7 +00.0	10			
11	4 08.5 +00.8	S	16 38.1 +00.5	261 23.6 +02.2	S	14 19.9 -00.1	277 29.4 +02.3	S	18 55.7 -00.1	11			
12	19 09.3 +00.7	S	16 38.6 +00.5	276 25.8 +02.2	S	14 19.8 -00.1	292 31.7 +02.3	S	18 55.6 +00.0	12			
13	34 10.0 +00.8	S	16 39.1 +00.5	291 28.0 +02.2	S	14 19.7 -00.1	307 34.0 +02.3	S	18 55.6 -00.1	13			
14	49 10.8 +00.7	S	16 39.6 +00.5	306 30.2 +02.1	S	14 19.6 -00.1	322 36.3 +02.3	S	18 55.5 +00.0	14			
15	64 11.5 +00.8	S	16 40.1 +00.5	321 32.3 +02.2	S	14 19.5 -00.1	337 38.6 +02.3	S	18 55.5 -00.1	15			
16	79 12.3 +00.8	S	16 40.6 +00.5	336 34.5 +02.2	S	14 19.4 -00.1	352 40.9 +02.2	S	18 55.4 +00.0	16			
17	94 13.1 +00.7	S	16 41.1 +00.5	351 36.7 +02.2	S	14 19.3 -00.1	7 43.1 +02.3	S	18 55.4 -00.1	17			
18	109 13.8 +00.8	S	16 41.6 +00.5	6 38.9 +02.2	S	14 19.2 -00.1	22 45.4 +02.3	S	18 55.3 +00.0	18			
19	124 14.6 +00.7	S	16 42.1 +00.5	21 41.1 +02.2	S	14 19.1 -00.1	37 47.7 +02.3	S	18 55.3 +00.0	19			
20	139 15.3 +00.8	S	16 42.6 +00.5	36 43.3 +02.1	S	14 19.0 -00.1	52 50.0 +02.3	S	18 55.3 -00.1	20			
21	154 16.1 +00.7	S	16 43.1 +00.6	51 45.4 +02.2	S	14 18.9 -00.1	67 52.3 +02.3	S	18 55.2 +00.0	21			
22	169 16.8 +00.8	S	16 43.7 +00.5	66 47.6 +02.2	S	14 18.8 -00.1	82 54.6 +02.3	S	18 55.2 -00.1	22			
23	184 17.6 +00.7	S	16 44.2 +00.5	81 49.8 +02.2	S	14 18.7 -00.1	97 56.9 +02.2	S	18 55.1 +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 00'0 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 136° 136° 136° 135° 135° 135°			SHA 033° 033° 033° 033° 033° 033°			SHA 049° 049° 049° 049° 049° 049°						
	Greenwich Culmination Time: 10:43			Greenwich Culmination Time: 17:33			Greenwich Culmination Time: 16:29						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 17.0 -00.2	S	20 44.5 +00.5	135 44.3 +00.5	S	25 46.8 -00.4	296 34.4 -29.9	N	23 48.1 -06.2	00			
01	198 16.8 -00.2	S	20 45.0 +00.5	150 44.8 +00.5	S	25 46.4 -00.4	311 04.5 -29.9	N	23 41.9 -06.3	01			
02	213 16.6 -00.2	S	20 45.5 +00.5	165 45.3 +00.6	S	25 46.0 -00.3	325 34.6 -29.9	N	23 35.6 -06.4	02			
03	228 16.4 -00.2	S	20 46.0 +00.5	180 45.9 +00.5	S	25 45.7 -00.4	340 04.7 -29.9	N	23 29.2 -06.5	03			
04	243 16.2 -00.2	S	20 46.5 +00.4	195 46.4 +00.5	S	25 45.3 -00.4	354 34.8 -29.8	N	23 22.7 -06.6	04			
05	258 16.0 -00.2	S	20 46.9 +00.5	210 46.9 +00.6	S	25 44.9 -00.4	9 05.0 -29.8	N	23 16.1 -06.7	05			
06	273 15.8 -00.2	S	20 47.4 +00.5	225 47.5 +00.5	S	25 44.5 -00.3	23 35.2 -29.7	N	23 09.4 -06.9	06			
07	288 15.6 -00.2	S	20 47.9 +00.5	240 48.0 +00.6	S	25 44.2 -00.4	38 05.5 -29.8	N	23 02.5 -07.0	07			
08	303 15.4 -00.1	S	20 48.4 +00.5	255 48.6 +00.5	S	25 43.8 -00.4	52 35.7 -29.7	N	22 55.5 -07.1	08			
09	318 15.3 -00.2	S	20 48.9 +00.5	270 49.1 +00.6	S	25 43.4 -00.4	67 06.0 -29.6	N	22 48.4 -07.1	09			
10	333 15.1 -00.2	S	20 49.4 +00.4	285 49.7 +00.5	S	25 43.0 -00.3	81 36.4 -29.6	N	22 41.3 -07.4	10			
11	348 14.9 -00.2	S	20 49.8 +00.5	300 50.2 +00.6	S	25 42.7 -00.4	96 06.8 -29.6	N	22 33.9 -07.4	11			
12	3 14.7 -00.2	S	20 50.3 +00.5	315 50.8 +00.5	S	25 42.3 -00.4	110 37.2 -29.6	N	22 26.5 -07.5	12			
13	18 14.5 -00.2	S	20 50.8 +00.5	330 51.3 +00.6	S	25 41.9 -00.4	125 07.6 -29.5	N	22 19.0 -07.6	13			
14	33 14.3 -00.2	S	20 51.3 +00.5	345 51.9 +00.6	S	25 41.5 -00.4	139 38.1 -29.5	N	22 11.4 -07.8	14			
15	48 14.1 -00.2	S	20 51.8 +00.4	0 52.5 +00.5	S	25 41.1 -00.3	154 08.6 -29.5	N	22 03.6 -07.9	15			
16	63 13.9 -00.2	S	20 52.2 +00.5	15 53.0 +00.6	S	25 40.8 -00.4	168 39.1 -29.4	N	21 55.7 -07.9	16			
17	78 13.7 -00.2	S	20 52.7 +00.5	30 53.6 +00.6	S	25 40.4 -00.4	183 09.7 -29.4	N	21 47.8 -08.1	17			
18	93 13.5 -00.2	S	20 53.2 +00.5	45 54.2 +00.5	S	25 40.0 -00.4	197 40.3 -29.4	N	21 39.7 -08.2	18			
19	108 13.3 -00.2	S	20 53.7 +00.5	60 54.7 +00.6	S	25 39.6 -00.4	212 10.9 -29.3	N	21 31.5 -08.3	19			
20	123 13.1 -00.2	S	20 54.2 +00.4	75 55.3 +00.6	S	25 39.2 -00.3	226 41.6 -29.3	N	21 23.2 -08.4	20			
21	138 12.9 -00.2	S	20 54.6 +00.5	90 55.9 +00.6	S	25 38.9 -00.4	241 12.3 -29.2	N	21 14.8 -08.5	21			
22	153 12.7 -00.2	S	20 55.1 +00.5	105 56.5 +00.6	S	25 38.5 -00.4	255 43.1 -29.2	N	21 06.3 -08.6	22			
23	168 12.5 -00.1	S	20 55.6 +00.5	120 57.1 +00.5	S	25 38.1 -00.4	270 13.9 -29.2	N	20 57.7 -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 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 14'9 15'0 15'0 15'0 15'0 15'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'3 00'3 00'3 00'3 00'3 00'3			HP 54'8 54'9 55'0 55'1 55'2 55'3						
	SHA 119° 119° 119° 119° 118° 118°			SHA 072° 071° 071° 071° 071° 071°			SHA 231° 229° 227° 225° 223° 221°						
	Greenwich Culmination Time: 11:47			Greenwich Culmination Time: 14:56			Greenwich Culmination Time: 04:22						

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	199 18.3 +00.8	S	16 44.7 +00.5	96 52.0 +02.2	S	14 18.6 -00.1	112 59.1 +02.3	S	18 55.1 -00.1	00			
01	214 19.1 +00.7	S	16 45.2 +00.5	111 54.2 +02.1	S	14 18.5 -00.1	128 01.4 +02.3	S	18 55.0 +00.0	01			
02	229 19.8 +00.8	S	16 45.7 +00.5	126 56.3 +02.2	S	14 18.4 -00.1	143 03.7 +02.3	S	18 55.0 -00.1	02			
03	244 20.6 +00.7	S	16 46.2 +00.5	141 58.5 +02.2	S	14 18.3 -00.1	158 06.0 +02.3	S	18 54.9 +00.0	03			
04	259 21.3 +00.8	S	16 46.7 +00.5	157 00.7 +02.2	S	14 18.2 -00.1	173 08.3 +02.3	S	18 54.9 -00.1	04			
05	274 22.1 +00.7	S	16 47.2 +00.5	172 02.9 +02.2	S	14 18.1 -00.1	188 10.6 +02.2	S	18 54.8 +00.0	05			
06	289 22.8 +00.8	S	16 47.7 +00.5	187 05.1 +02.1	S	14 18.0 -00.1	203 12.8 +02.3	S	18 54.8 -00.1	06			
07	304 23.6 +00.7	S	16 48.2 +00.5	202 07.2 +02.2	S	14 17.9 -00.2	218 15.1 +02.3	S	18 54.7 +00.0	07			
08	319 24.3 +00.8	S	16 48.7 +00.5	217 09.4 +02.2	S	14 17.7 -00.1	233 17.4 +02.3	S	18 54.7 +00.0	08			
09	334 25.1 +00.7	S	16 49.2 +00.5	232 11.6 +02.2	S	14 17.6 -00.1	248 19.7 +02.3	S	18 54.7 -00.1	09			
10	349 25.8 +00.8	S	16 49.7 +00.5	247 13.8 +02.2	S	14 17.5 -00.1	263 22.0 +02.3	S	18 54.6 +00.0	10			
11	4 26.6 +00.7	S	16 50.2 +00.5	262 16.0 +02.1	S	14 17.4 -00.1	278 24.3 +02.2	S	18 54.6 -00.1	11			
12	19 27.3 +00.8	S	16 50.7 +00.5	277 18.1 +02.2	S	14 17.3 -00.1	293 26.5 +02.3	S	18 54.5 +00.0	12			
13	34 28.1 +00.7	S	16 51.2 +00.5	292 20.3 +02.2	S	14 17.2 -00.1	308 28.8 +02.3	S	18 54.5 -00.1	13			
14	49 28.8 +00.8	S	16 51.7 +00.5	307 22.5 +02.2	S	14 17.1 -00.1	323 31.1 +02.3	S	18 54.4 +00.0	14			
15	64 29.6 +00.7	S	16 52.2 +00.5	322 24.7 +02.1	S	14 17.0 -00.1	338 33.4 +02.3	S	18 54.4 -00.1	15			
16	79 30.3 +00.7	S	16 52.7 +00.6	337 26.8 +02.2	S	14 16.9 -00.1	353 35.7 +02.3	S	18 54.3 +00.0	16			
17	94 31.0 +00.8	S	16 53.3 +00.5	352 29.0 +02.2	S	14 16.8 -00.1	8 38.0 +02.2	S	18 54.3 -00.1	17			
18	109 31.8 +00.7	S	16 53.8 +00.5	7 31.2 +02.2	S	14 16.7 -00.1	23 40.2 +02.3	S	18 54.2 +00.0	18			
19	124 32.5 +00.8	S	16 54.3 +00.5	22 33.4 +02.1	S	14 16.6 -00.1	38 42.5 +02.3	S	18 54.2 -00.1	19			
20	139 33.3 +00.7	S	16 54.8 +00.5	37 35.5 +02.2	S	14 16.5 -00.1	53 44.8 +02.3	S	18 54.1 +00.0	20			
21	154 34.0 +00.8	S	16 55.3 +00.5	52 37.7 +02.2	S	14 16.4 -00.1	68 47.1 +02.3	S	18 54.1 -00.1	21			
22	169 34.8 +00.7	S	16 55.8 +00.5	67 39.9 +02.2	S	14 16.3 -00.1	83 49.4 +02.2	S	18 54.0 +00.0	22			
23	184 35.5 +00.8	S	16 56.3 +00.5	82 42.1 +02.1	S	14 16.2 -00.1	98 51.6 +02.3	S	18 54.0 +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 135° 135° 135° 135° 135° 135°			SHA 033° 033° 033° 033° 033° 033°			SHA 049° 049° 049° 049° 049° 049°						
	Greenwich Culmination Time: 10:42			Greenwich Culmination Time: 17:29			Greenwich Culmination Time: 16:25						

UT	Sun				Venus				Moon				UT
	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	
00	183 12.4 -00.2	S	20 56.1 +00.4	135 57.6 +00.6	S	25 37.7 -00.4	284 44.7 -29.2	N	20 49.0 -08.8	00			
01	198 12.2 -00.2	S	20 56.5 +00.5	150 58.2 +00.6	S	25 37.3 -00.4	299 15.5 -29.1	N	20 40.2 -09.0	01			
02	213 12.0 -00.2	S	20 57.0 +00.5	165 58.8 +00.6	S	25 36.9 -00.4	313 46.4 -29.1	N	20 31.2 -09.0	02			
03	228 11.8 -00.2	S	20 57.5 +00.4	180 59.4 +00.6	S	25 36.5 -00.3	328 17.3 -29.0	N	20 22.2 -09.1	03			
04	243 11.6 -00.2	S	20 57.9 +00.5	195 60.0 +00.6	S	25 36.2 -00.4	342 48.3 -29.1	N	20 13.1 -09.2	04			
05	258 11.4 -00.2	S	20 58.4 +00.5	211 00.6 +00.6	S	25 35.8 -00.4	357 19.2 -29.0	N	20 03.9 -09.4	05			
06	273 11.2 -00.2	S	20 58.9 +00.4	226 01.2 +00.6	S	25 35.4 -00.4	11 50.2 -28.9	N	19 54.5 -09.4	06			
07	288 11.0 -00.2	S	20 59.3 +00.5	241 01.8 +00.6	S	25 35.0 -00.4	26 21.3 -28.9	N	19 45.1 -09.5	07			
08	303 10.8 -00.2	S	20 59.8 +00.5	256 02.4 +00.6	S	25 34.6 -00.4	40 52.4 -28.9	N	19 35.6 -09.7	08			
09	318 10.6 -00.2	S	21 00.3 +00.4	271 03.0 +00.6	S	25 34.2 -00.4	55 23.5 -28.9	N	19 25.9 -09.7	09			
10	333 10.4 -00.2	S	21 00.7 +00.5	286 03.6 +00.6	S	25 33.8 -00.4	69 54.6 -28.8	N	19 16.2 -09.8	10			
11	348 10.2 -00.2	S	21 01.2 +00.5	301 04.2 +00.6	S	25 33.4 -00.4	84 25.8 -28.8	N	19 06.4 -10.0	11			
12	3 10.0 -00.2	S	21 01.7 +00.4	316 04.8 +00.6	S	25 33.0 -00.4	98 57.0 -28.8	N	18 56.4 -10.0	12			
13	18 09.8 -00.2	S	21 02.1 +00.5	331 05.4 +00.7	S	25 32.6 -00.4	113 28.2 -28.7	N	18 46.4 -10.1	13			
14	33 09.6 -00.2	S	21 02.6 +00.5	346 06.1 +00.6	S	25 32.2 -00.4	127 59.5 -28.7	N	18 36.3 -10.2	14			
15	48 09.4 -00.2	S	21 03.1 +00.4	1 06.7 +00.6	S	25 31.8 -00.4	142 30.8 -28.7	N	18 26.1 -10.3	15			
16	63 09.2 -00.2	S	21 03.5 +00.5	16 07.3 +00.6	S	25 31.4 -00.3	157 02.1 -28.6	N	18 15.8 -10.4	16			
17	78 09.0 -00.2	S	21 04.0 +00.5	31 07.9 +00.7	S	25 31.1 -00.4	171 33.5 -28.6	N	18 05.4 -10.5	17			
18	93 08.8 -00.2	S	21 04.5 +00.4	46 08.6 +00.6	S	25 30.7 -00.4	186 04.9 -28.6	N	17 54.9 -10.6	18			
19	108 08.6 -00.2	S	21 04.9 +00.5	61 09.2 +00.6	S	25 30.3 -00.4	200 36.3 -28.5	N	17 44.3 -10.7	19			
20	123 08.4 -00.2	S	21 05.4 +00.4	76 09.8 +00.7	S	25 29.9 -00.4	215 07.8 -28.6	N	17 33.6 -10.8	20			
21	138 08.2 -00.2	S	21 05.8 +00.5	91 10.5 +00.6	S	25 29.5 -00.4	229 39.2 -28.5	N	17 22.8 -10.9	21			
22	153 08.0 -00.2	S	21 06.3 +00.5	106 11.1 +00.6	S	25 29.1 -00.4	244 10.7 -28.4	N	17 11.9 -10.9	22			
23	168 07.8 -00.2	S	21 06.8 +00.4	121 11.7 +00.7	S	25 28.7 -00.4	258 42.3 -28.5	N	17 01.0 -11.1	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 00'3 00'3 00'3 00'3 00'3 00'3			SD 15'1 15'1 15'2 15'2 15'2 15'2						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'3 00'3 00'3 00'3 00'3 00'3			HP 55'4 55'5 55'6 55'7 55'8 56'0						
	SHA 118° 118° 118° 117° 117° 117°			SHA 071° 071° 071° 070° 070° 070°			SHA 219° 216° 214° 212° 210° 208°						
	Greenwich Culmination Time: 11:47			Greenwich Culmination Time: 14:55			Greenwich Culmination Time: 05:11						

UT	Mars				Jupiter				Saturn				UT
	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	
00	199 36.3 +00.7	S	16 56.8 +00.5	97 44.2 +02.2	S	14 16.1 -00.1	113 53.9 +02.3	S	18 54.0 -00.1	00			
01	214 37.0 +00.8	S	16 57.3 +00.5	112 46.4 +02.2	S	14 16.0 -00.1	128 56.2 +02.3	S	18 53.9 +00.0	01			
02	229 37.8 +00.7	S	16 57.8 +00.5	127 48.6 +02.2	S	14 15.9 -00.1	143 58.5 +02.3	S	18 53.9 -00.1	02			
03	244 38.5 +00.7	S	16 58.3 +00.5	142 50.8 +02.1	S	14 15.8 -00.1	159 00.8 +02.2	S	18 53.8 +00.0	03			
04	259 39.2 +00.8	S	16 58.8 +00.5	157 52.9 +02.2	S	14 15.7 -00.2	174 03.0 +02.3	S	18 53.8 -00.1	04			
05	274 40.0 +00.7	S	16 59.3 +00.5	172 55.1 +02.2	S	14 15.5 -00.1	189 05.3 +02.3	S	18 53.7 +00.0	05			
06	289 40.7 +00.8	S	16 59.8 +00.5	187 57.3 +02.2	S	14 15.4 -00.1	204 07.6 +02.3	S	18 53.7 -00.1	06			
07	304 41.5 +00.7	S	17 00.3 +00.5	202 59.5 +02.1	S	14 15.3 -00.1	219 09.9 +02.3	S	18 53.6 +00.0	07			
08	319 42.2 +00.8	S	17 00.8 +00.5	218 01.6 +02.2	S	14 15.2 -00.1	234 12.2 +02.2	S	18 53.6 -00.1	08			
09	334 43.0 +00.7	S	17 01.3 +00.5	233 03.8 +02.2	S	14 15.1 -00.1	249 14.4 +02.3	S	18 53.5 +00.0	09			
10	349 43.7 +00.8	S	17 01.8 +00.5	248 06.0 +02.1	S	14 15.0 -00.1	264 16.7 +02.3	S	18 53.5 -00.1	10			
11	4 44.5 +00.7	S	17 02.3 +00.5	263 08.1 +02.2	S	14 14.9 -00.1	279 19.0 +02.3	S	18 53.4 +00.0	11			
12	19 45.2 +00.7	S	17 02.8 +00.5	278 10.3 +02.2	S	14 14.8 -00.1	294 21.3 +02.3	S	18 53.4 -00.1	12			
13	34 45.9 +00.8	S	17 03.3 +00.5	293 12.5 +02.2	S	14 14.7 -00.1	309 23.6 +02.2	S	18 53.3 +00.0	13			
14	49 46.7 +00.7	S	17 03.8 +00.5	308 14.7 +02.1	S	14 14.6 -00.1	324 25.8 +02.3	S	18 53.3 -00.1	14			
15	64 47.4 +00.8	S	17 04.3 +00.5	323 16.8 +02.2	S	14 14.5 -00.1	339 28.1 +02.3	S	18 53.2 +00.0	15			
16	79 48.2 +00.7	S	17 04.8 +00.5	338 19.0 +02.2	S	14 14.4 -00.1	354 30.4 +02.3	S	18 53.2 -00.1	16			
17	94 48.9 +00.8	S	17 05.3 +00.5	353 21.2 +02.1	S	14 14.3 -00.1	9 32.7 +02.3	S	18 53.1 +00.0	17			
18	109 49.7 +00.7	S	17 05.8 +00.5	8 23.3 +02.2	S	14 14.2 -00.1	24 35.0 +02.2	S	18 53.1 +00.0	18			
19	124 50.4 +00.7	S	17 06.3 +00.5	23 25.5 +02.2	S	14 14.1 -00.2	39 37.2 +02.3	S	18 53.1 -00.1	19			
20	139 51.1 +00.8	S	17 06.8 +00.5	38 27.7 +02.1	S	14 13.9 -00.1	54 39.5 +02.3	S	18 53.0 +00.0	20			
21	154 51.9 +00.7	S	17 07.3 +00.5	53 29.8 +02.2	S	14 13.8 -00.1	69 41.8 +02.3	S	18 53.0 -00.1	21			
22	169 52.6 +00.8	S	17 07.8 +00.4	68 32.0 +02.2	S	14 13.7 -00.1	84 44.1 +02.3	S	18 52.9 +00.0	22			
23	184 53.4 +00.7	S	17 08.2 +00.5	83 34.2 +02.2	S	14 13.6 -00.1	99 46.4 +02.2	S	18 52.9 -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 00'0 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 134° 134° 134° 134° 134° 134°			SHA 033° 033° 033° 033° 033° 032°			SHA 049° 049° 049° 049° 049° 049°						
	Greenwich Culmination Time: 10:41			Greenwich Culmination Time: 17:26			Greenwich Culmination Time: 16:21						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 07.6 -00.2	S	21 07.2 +00.5	136 12.4 +00.6	S	25 28.3 -00.4	273 13.8 -28.4	N	16 49.9 -11.1	00			
01	198 07.4 -00.2	S	21 07.7 +00.4	151 13.0 +00.7	S	25 27.9 -00.4	287 45.4 -28.4	N	16 38.8 -11.3	01			
02	213 07.2 -00.2	S	21 08.1 +00.5	166 13.7 +00.6	S	25 27.5 -00.4	302 17.0 -28.4	N	16 27.5 -11.3	02			
03	228 07.0 -00.3	S	21 08.6 +00.4	181 14.3 +00.7	S	25 27.1 -00.4	316 48.6 -28.3	N	16 16.2 -11.4	03			
04	243 06.7 -00.2	S	21 09.0 +00.5	196 15.0 +00.6	S	25 26.7 -00.4	331 20.3 -28.3	N	16 04.8 -11.5	04			
05	258 06.5 -00.2	S	21 09.5 +00.4	211 15.6 +00.7	S	25 26.3 -00.4	345 52.0 -28.3	N	15 53.3 -11.5	05			
06	273 06.3 -00.2	S	21 09.9 +00.5	226 16.3 +00.6	S	25 25.9 -00.5	0 23.7 -28.3	N	15 41.8 -11.7	06			
07	288 06.1 -00.2	S	21 10.4 +00.4	241 16.9 +00.7	S	25 25.4 -00.4	14 55.4 -28.2	N	15 30.1 -11.7	07			
08	303 05.9 -00.2	S	21 10.8 +00.5	256 17.6 +00.7	S	25 25.0 -00.4	29 27.2 -28.2	N	15 18.4 -11.9	08			
09	318 05.7 -00.2	S	21 11.3 +00.4	271 18.3 +00.6	S	25 24.6 -00.4	43 59.0 -28.3	N	15 06.5 -11.9	09			
10	333 05.5 -00.2	S	21 11.7 +00.5	286 18.9 +00.7	S	25 24.2 -00.4	58 30.7 -28.1	N	14 54.6 -12.0	10			
11	348 05.3 -00.2	S	21 12.2 +00.4	301 19.6 +00.7	S	25 23.8 -00.4	73 02.6 -28.2	N	14 42.6 -12.0	11			
12	3 05.1 -00.2	S	21 12.6 +00.5	316 20.3 +00.6	S	25 23.4 -00.4	87 34.4 -28.1	N	14 30.6 -12.2	12			
13	18 04.9 -00.2	S	21 13.1 +00.4	331 20.9 +00.7	S	25 23.0 -00.4	102 06.3 -28.2	N	14 18.4 -12.2	13			
14	33 04.7 -00.2	S	21 13.5 +00.5	346 21.6 +00.7	S	25 22.6 -00.4	116 38.1 -28.1	N	14 06.2 -12.3	14			
15	48 04.5 -00.2	S	21 14.0 +00.4	1 22.3 +00.7	S	25 22.2 -00.4	131 10.0 -28.1	N	13 53.9 -12.4	15			
16	63 04.3 -00.2	S	21 14.4 +00.5	16 23.0 +00.7	S	25 21.8 -00.4	145 41.9 -28.1	N	13 41.5 -12.5	16			
17	78 04.1 -00.3	S	21 14.9 +00.4	31 23.7 +00.6	S	25 21.4 -00.4	160 13.8 -28.0	N	13 29.0 -12.6	17			
18	93 03.8 -00.2	S	21 15.3 +00.5	46 24.3 +00.7	S	25 21.0 -00.4	174 45.8 -28.1	N	13 16.4 -12.6	18			
19	108 03.6 -00.2	S	21 15.8 +00.4	61 25.0 +00.7	S	25 20.6 -00.5	189 17.7 -28.0	N	13 03.8 -12.7	19			
20	123 03.4 -00.2	S	21 16.2 +00.5	76 25.7 +00.7	S	25 20.1 -00.4	203 49.7 -28.0	N	12 51.1 -12.7	20			
21	138 03.2 -00.2	S	21 16.7 +00.4	91 26.4 +00.7	S	25 19.7 -00.4	218 21.7 -28.0	N	12 38.4 -12.9	21			
22	153 03.0 -00.2	S	21 17.1 +00.4	106 27.1 +00.7	S	25 19.3 -00.4	232 53.7 -28.0	N	12 25.5 -12.9	22			
23	168 02.8 -00.2	S	21 17.5 +00.5	121 27.8 +00.7	S	25 18.9 -00.4	247 25.7 -28.0	N	12 12.6 -13.0	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 117° 117° 117° 116° 116° 116° Greenwich Culmination Time: 11:47				UT 02 06 10 14 18 22 SD 00'3 00'3 00'3 00'3 00'3 00'3 HP 00'3 00'3 00'3 00'3 00'3 00'3 SHA 070° 070° 070° 070° 070° 069° Greenwich Culmination Time: 14:54				UT 02 06 10 14 18 22 SD 15'3 15'3 15'4 15'4 15'4 15'5 HP 56'1 56'2 56'3 56'5 56'6 56'8 SHA 206° 204° 202° 200° 198° 196° Greenwich Culmination Time: 05:58					
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	199 54.1 +00.7	S	17 08.7 +00.5	98 36.4 +02.1	S	14 13.5 -00.1	114 48.6 +02.3	S	18 52.8 +00.0	00			
01	214 54.8 +00.8	S	17 09.2 +00.5	113 38.5 +02.2	S	14 13.4 -00.1	129 50.9 +02.3	S	18 52.8 -00.1	01			
02	229 55.6 +00.7	S	17 09.7 +00.5	128 40.7 +02.2	S	14 13.3 -00.1	144 53.2 +02.3	S	18 52.7 +00.0	02			
03	244 56.3 +00.8	S	17 10.2 +00.5	143 42.9 +02.1	S	14 13.2 -00.1	159 55.5 +02.2	S	18 52.7 -00.1	03			
04	259 57.1 +00.7	S	17 10.7 +00.5	158 45.0 +02.2	S	14 13.1 -00.1	174 57.7 +02.3	S	18 52.6 +00.0	04			
05	274 57.8 +00.7	S	17 11.2 +00.5	173 47.2 +02.2	S	14 13.0 -00.1	190 00.0 +02.3	S	18 52.6 -00.1	05			
06	289 58.5 +00.8	S	17 11.7 +00.5	188 49.4 +02.1	S	14 12.9 -00.1	205 02.3 +02.3	S	18 52.5 +00.0	06			
07	304 59.3 +00.7	S	17 12.2 +00.5	203 51.5 +02.2	S	14 12.8 -00.2	220 04.6 +02.2	S	18 52.5 -00.1	07			
08	320 00.0 +00.7	S	17 12.7 +00.5	218 53.7 +02.2	S	14 12.6 -00.1	235 06.8 +02.3	S	18 52.4 +00.0	08			
09	335 00.7 +00.8	S	17 13.2 +00.5	233 55.9 +02.1	S	14 12.5 -00.1	250 09.1 +02.3	S	18 52.4 -00.1	09			
10	350 01.5 +00.7	S	17 13.7 +00.5	248 58.0 +02.2	S	14 12.4 -00.1	265 11.4 +02.3	S	18 52.3 +00.0	10			
11	5 02.2 +00.8	S	17 14.2 +00.5	264 00.2 +02.2	S	14 12.3 -00.1	280 13.7 +02.3	S	18 52.3 -00.1	11			
12	20 03.0 +00.7	S	17 14.7 +00.5	279 02.4 +02.1	S	14 12.2 -00.1	295 16.0 +02.2	S	18 52.2 +00.0	12			
13	35 03.7 +00.7	S	17 15.2 +00.5	294 04.5 +02.2	S	14 12.1 -00.1	310 18.2 +02.3	S	18 52.2 -00.1	13			
14	50 04.4 +00.8	S	17 15.7 +00.5	309 06.7 +02.1	S	14 12.0 -00.1	325 20.5 +02.3	S	18 52.1 +00.0	14			
15	65 05.2 +00.7	S	17 16.2 +00.5	324 08.8 +02.2	S	14 11.9 -00.1	340 22.8 +02.3	S	18 52.1 -00.1	15			
16	80 05.9 +00.7	S	17 16.7 +00.4	339 11.0 +02.2	S	14 11.8 -00.1	355 25.1 +02.2	S	18 52.0 +00.0	16			
17	95 06.6 +00.8	S	17 17.1 +00.5	354 13.2 +02.1	S	14 11.7 -00.1	10 27.3 +02.3	S	18 52.0 -00.1	17			
18	110 07.4 +00.7	S	17 17.6 +00.5	9 15.3 +02.2	S	14 11.6 -00.2	25 29.6 +02.3	S	18 51.9 +00.0	18			
19	125 08.1 +00.8	S	17 18.1 +00.5	24 17.5 +02.2	S	14 11.4 -00.1	40 31.9 +02.3	S	18 51.9 -00.1	19			
20	140 08.9 +00.7	S	17 18.6 +00.5	39 19.7 +02.1	S	14 11.3 -00.1	55 34.2 +02.2	S	18 51.8 +00.0	20			
21	155 09.6 +00.7	S	17 19.1 +00.5	54 21.8 +02.2	S	14 11.2 -00.1	70 36.4 +02.3	S	18 51.8 -00.1	21			
22	170 10.3 +00.8	S	17 19.6 +00.5	69 24.0 +02.2	S	14 11.1 -00.1	85 38.7 +02.3	S	18 51.7 +00.0	22			
23	185 11.1 +00.7	S	17 20.1 +00.5	84 26.2 +02.1	S	14 11.0 -00.1	100 41.0 +02.3	S	18 51.7 +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 134° 134° 133° 133° 133° 133° Greenwich Culmination Time: 10:39				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 032° 032° 032° 032° 032° 032° Greenwich Culmination Time: 17:23				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° 049° 049° 049° Greenwich Culmination Time: 16:18					

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 02.6 -00.2	S	21 18.0 +00.4	136 28.5 +00.7	S	25 18.5 -00.4	261 57.7 -28.0	N	11 59.6 -13.1	00			
01	198 02.4 -00.2	S	21 18.4 +00.5	151 29.2 +00.7	S	25 18.1 -00.4	276 29.7 -27.9	N	11 46.5 -13.1	01			
02	213 02.2 -00.2	S	21 18.9 +00.4	166 29.9 +00.7	S	25 17.7 -00.4	291 01.8 -28.0	N	11 33.4 -13.2	02			
03	228 02.0 -00.3	S	21 19.3 +00.4	181 30.6 +00.7	S	25 17.3 -00.5	305 33.8 -28.0	N	11 20.2 -13.3	03			
04	243 01.7 -00.2	S	21 19.7 +00.5	196 31.3 +00.8	S	25 16.8 -00.4	320 05.8 -27.9	N	11 06.9 -13.3	04			
05	258 01.5 -00.2	S	21 20.2 +00.4	211 32.1 +00.7	S	25 16.4 -00.4	334 37.9 -27.9	N	10 53.6 -13.4	05			
06	273 01.3 -00.2	S	21 20.6 +00.4	226 32.8 +00.7	S	25 16.0 -00.4	349 10.0 -28.0	N	10 40.2 -13.5	06			
07	288 01.1 -00.2	S	21 21.0 +00.5	241 33.5 +00.7	S	25 15.6 -00.4	3 42.0 -27.9	N	10 26.7 -13.6	07			
08	303 00.9 -00.2	S	21 21.5 +00.4	256 34.2 +00.7	S	25 15.2 -00.4	18 14.1 -27.9	N	10 13.1 -13.6	08			
09	318 00.7 -00.2	S	21 21.9 +00.4	271 34.9 +00.8	S	25 14.8 -00.5	32 46.2 -28.0	N	09 59.5 -13.6	09			
10	333 00.5 -00.3	S	21 22.3 +00.5	286 35.7 +00.7	S	25 14.3 -00.4	47 18.2 -27.9	N	09 45.9 -13.8	10			
11	348 00.2 -00.2	S	21 22.8 +00.4	301 36.4 +00.7	S	25 13.9 -00.4	61 50.3 -27.9	N	09 32.1 -13.8	11			
12	3 00.0 -00.2	S	21 23.2 +00.4	316 37.1 +00.8	S	25 13.5 -00.4	76 22.4 -28.0	N	09 18.3 -13.8	12			
13	17 59.8 -00.2	S	21 23.6 +00.5	331 37.9 +00.7	S	25 13.1 -00.4	90 54.4 -27.9	N	09 04.5 -14.0	13			
14	32 59.6 -00.2	S	21 24.1 +00.4	346 38.6 +00.7	S	25 12.7 -00.5	105 26.5 -27.9	N	08 50.5 -13.9	14			
15	47 59.4 -00.2	S	21 24.5 +00.4	1 39.3 +00.8	S	25 12.2 -00.4	119 58.6 -28.0	N	08 36.6 -14.1	15			
16	62 59.2 -00.2	S	21 24.9 +00.5	16 40.1 +00.7	S	25 11.8 -00.4	134 30.6 -27.9	N	08 22.5 -14.1	16			
17	77 59.0 -00.3	S	21 25.4 +00.4	31 40.8 +00.8	S	25 11.4 -00.4	149 02.7 -28.0	N	08 08.4 -14.1	17			
18	92 58.7 -00.2	S	21 25.8 +00.4	46 41.6 +00.7	S	25 11.0 -00.5	163 34.7 -27.9	N	07 54.3 -14.3	18			
19	107 58.5 -00.2	S	21 26.2 +00.4	61 42.3 +00.8	S	25 10.5 -00.4	178 06.8 -28.0	N	07 40.0 -14.2	19			
20	122 58.3 -00.2	S	21 26.6 +00.5	76 43.1 +00.7	S	25 10.1 -00.4	192 38.8 -28.0	N	07 25.8 -14.4	20			
21	137 58.1 -00.2	S	21 27.1 +00.4	91 43.8 +00.8	S	25 09.7 -00.4	207 10.8 -28.0	N	07 11.4 -14.3	21			
22	152 57.9 -00.3	S	21 27.5 +00.4	106 44.6 +00.8	S	25 09.3 -00.5	221 42.8 -28.0	N	06 57.1 -14.5	22			
23	167 57.6 -00.2	S	21 27.9 +00.4	121 45.4 +00.7	S	25 08.8 -00.4	236 14.8 -28.0	N	06 42.6 -14.4	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 00'3 00'3 00'3 00'3 00'3 00'3			SD 15'5 15'5 15'6 15'6 15'7 15'7						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'3 00'3 00'3 00'3 00'3 00'3			HP 56'9 57'1 57'2 57'4 57'5 57'7						
	SHA 116° 116° 115° 115° 115° 115°			SHA 069° 069° 069° 069° 069° 069°			SHA 194° 192° 190° 188° 186° 184°						
	Greenwich Culmination Time: 11:47			Greenwich Culmination Time: 14:53			Greenwich Culmination Time: 06:44						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	200 11.8 +00.7	S	17 20.6 +00.5	99 28.3 +02.2	S	14 10.9 -00.1	115 43.3 +02.2	S	18 51.7 -00.1	00			
01	215 12.5 +00.8	S	17 21.1 +00.5	114 30.5 +02.1	S	14 10.8 -00.1	130 45.5 +02.3	S	18 51.6 +00.0	01			
02	230 13.3 +00.7	S	17 21.6 +00.5	129 32.6 +02.2	S	14 10.7 -00.1	145 47.8 +02.3	S	18 51.6 -00.1	02			
03	245 14.0 +00.7	S	17 22.1 +00.5	144 34.8 +02.2	S	14 10.6 -00.1	160 50.1 +02.3	S	18 51.5 +00.0	03			
04	260 14.7 +00.8	S	17 22.6 +00.4	159 37.0 +02.1	S	14 10.5 -00.2	175 52.4 +02.2	S	18 51.5 -00.1	04			
05	275 15.5 +00.7	S	17 23.0 +00.5	174 39.1 +02.2	S	14 10.3 -00.1	190 54.6 +02.3	S	18 51.4 +00.0	05			
06	290 16.2 +00.7	S	17 23.5 +00.5	189 41.3 +02.1	S	14 10.2 -00.1	205 56.9 +02.3	S	18 51.4 -00.1	06			
07	305 16.9 +00.8	S	17 24.0 +00.5	204 43.4 +02.2	S	14 10.1 -00.1	220 59.2 +02.2	S	18 51.3 +00.0	07			
08	320 17.7 +00.7	S	17 24.5 +00.5	219 45.6 +02.2	S	14 10.0 -00.1	236 01.4 +02.3	S	18 51.3 -00.1	08			
09	335 18.4 +00.7	S	17 25.0 +00.5	234 47.8 +02.1	S	14 09.9 -00.1	251 03.7 +02.3	S	18 51.2 +00.0	09			
10	350 19.1 +00.8	S	17 25.5 +00.5	249 49.9 +02.2	S	14 09.8 -00.1	266 06.0 +02.3	S	18 51.2 -00.1	10			
11	5 19.9 +00.7	S	17 26.0 +00.5	264 52.1 +02.1	S	14 09.7 -00.1	281 08.3 +02.2	S	18 51.1 +00.0	11			
12	20 20.6 +00.7	S	17 26.5 +00.5	279 54.2 +02.2	S	14 09.6 -00.1	296 10.5 +02.3	S	18 51.1 -00.1	12			
13	35 21.3 +00.8	S	17 27.0 +00.4	294 56.4 +02.2	S	14 09.5 -00.1	311 12.8 +02.3	S	18 51.0 +00.0	13			
14	50 22.1 +00.7	S	17 27.4 +00.5	309 58.6 +02.1	S	14 09.4 -00.2	326 15.1 +02.3	S	18 51.0 -00.1	14			
15	65 22.8 +00.7	S	17 27.9 +00.5	325 00.7 +02.2	S	14 09.2 -00.1	341 17.4 +02.2	S	18 50.9 +00.0	15			
16	80 23.5 +00.8	S	17 28.4 +00.5	340 02.9 +02.1	S	14 09.1 -00.1	356 19.6 +02.3	S	18 50.9 -00.1	16			
17	95 24.3 +00.7	S	17 28.9 +00.5	355 05.0 +02.2	S	14 09.0 -00.1	11 21.9 +02.3	S	18 50.8 +00.0	17			
18	110 25.0 +00.7	S	17 29.4 +00.5	10 07.2 +02.1	S	14 08.9 -00.1	26 24.2 +02.2	S	18 50.8 -00.1	18			
19	125 25.7 +00.7	S	17 29.9 +00.5	25 09.3 +02.2	S	14 08.8 -00.1	41 26.4 +02.3	S	18 50.7 +00.0	19			
20	140 26.4 +00.8	S	17 30.4 +00.4	40 11.5 +02.2	S	14 08.7 -00.1	56 28.7 +02.3	S	18 50.7 -00.1	20			
21	155 27.2 +00.7	S	17 30.8 +00.5	55 13.7 +02.1	S	14 08.6 -00.1	71 31.0 +02.3	S	18 50.6 +00.0	21			
22	170 27.9 +00.7	S	17 31.3 +00.5	70 15.8 +02.2	S	14 08.5 -00.2	86 33.3 +02.2	S	18 50.6 -00.1	22			
23	185 28.6 +00.8	S	17 31.8 +00.5	85 18.0 +02.1	S	14 08.3 -00.1	101 35.5 +02.3	S	18 50.5 +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 00'0 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 133° 133° 133° 133° 133° 132°			SHA 032° 032° 032° 032° 032° 032°			SHA 049° 049° 049° 049° 049° 049°						
	Greenwich Culmination Time: 10:38			Greenwich Culmination Time: 17:19			Greenwich Culmination Time: 16:14						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 57.4 -00.2	S	21 28.3 +00.5	136 46.1 +00.8	S	25 08.4 -00.4	250 46.8 -28.0	N	06 28.2 -14.6	00			
01	197 57.2 -00.2	S	21 28.8 +00.4	151 46.9 +00.8	S	25 08.0 -00.4	265 18.8 -28.1	N	06 13.6 -14.6	01			
02	212 57.0 -00.2	S	21 29.2 +00.4	166 47.7 +00.7	S	25 07.6 -00.5	279 50.7 -28.0	N	05 59.0 -14.6	02			
03	227 56.8 -00.2	S	21 29.6 +00.4	181 48.4 +00.8	S	25 07.1 -00.4	294 22.7 -28.1	N	05 44.4 -14.7	03			
04	242 56.6 -00.3	S	21 30.0 +00.5	196 49.2 +00.8	S	25 06.7 -00.4	308 54.6 -28.1	N	05 29.7 -14.7	04			
05	257 56.3 -00.2	S	21 30.5 +00.4	211 50.0 +00.8	S	25 06.3 -00.5	323 26.5 -28.1	N	05 15.0 -14.8	05			
06	272 56.1 -00.2	S	21 30.9 +00.4	226 50.8 +00.7	S	25 05.8 -00.4	337 58.4 -28.2	N	05 00.2 -14.8	06			
07	287 55.9 -00.2	S	21 31.3 +00.4	241 51.5 +00.8	S	25 05.4 -00.4	352 30.2 -28.1	N	04 45.4 -14.8	07			
08	302 55.7 -00.2	S	21 31.7 +00.4	256 52.3 +00.8	S	25 05.0 -00.4	7 02.1 -28.2	N	04 30.6 -14.9	08			
09	317 55.5 -00.3	S	21 32.1 +00.4	271 53.1 +00.8	S	25 04.6 -00.5	21 33.9 -28.2	N	04 15.7 -15.0	09			
10	332 55.2 -00.2	S	21 32.5 +00.5	286 53.9 +00.8	S	25 04.1 -00.4	36 05.7 -28.2	N	04 00.7 -15.0	10			
11	347 55.0 -00.2	S	21 33.0 +00.4	301 54.7 +00.8	S	25 03.7 -00.4	50 37.5 -28.3	N	03 45.7 -15.0	11			
12	2 54.8 -00.2	S	21 33.4 +00.4	316 55.5 +00.8	S	25 03.3 -00.5	65 09.2 -28.3	N	03 30.7 -15.1	12			
13	17 54.6 -00.3	S	21 33.8 +00.4	331 56.3 +00.8	S	25 02.8 -00.4	79 40.9 -28.3	N	03 15.6 -15.1	13			
14	32 54.3 -00.2	S	21 34.2 +00.4	346 57.1 +00.8	S	25 02.4 -00.4	94 12.6 -28.3	N	03 00.5 -15.1	14			
15	47 54.1 -00.2	S	21 34.6 +00.4	1 57.9 +00.8	S	25 02.0 -00.5	108 44.3 -28.4	N	02 45.4 -15.2	15			
16	62 53.9 -00.2	S	21 35.0 +00.4	16 58.7 +00.8	S	25 01.5 -00.4	123 15.9 -28.4	N	02 30.2 -15.2	16			
17	77 53.7 -00.3	S	21 35.4 +00.4	31 59.5 +00.8	S	25 01.1 -00.4	137 47.5 -28.5	N	02 15.0 -15.2	17			
18	92 53.4 -00.2	S	21 35.8 +00.5	47 00.3 +00.8	S	25 00.7 -00.5	152 19.0 -28.5	N	01 59.8 -15.3	18			
19	107 53.2 -00.2	S	21 36.3 +00.4	62 01.1 +00.8	S	25 00.2 -00.4	166 50.5 -28.5	N	01 44.5 -15.3	19			
20	122 53.0 -00.2	S	21 36.7 +00.4	77 01.9 +00.9	S	24 59.8 -00.5	181 22.0 -28.5	N	01 29.2 -15.3	20			
21	137 52.8 -00.3	S	21 37.1 +00.4	92 02.8 +00.8	S	24 59.3 -00.4	195 53.5 -28.6	N	01 13.9 -15.4	21			
22	152 52.5 -00.2	S	21 37.5 +00.4	107 03.6 +00.8	S	24 58.9 -00.4	210 24.9 -28.6	N	00 58.5 -15.4	22			
23	167 52.3 -00.2	S	21 37.9 +00.4	122 04.4 +00.8	S	24 58.5 -00.5	224 56.3 -28.7	N	00 43.1 -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 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 15'8 15'8 15'8 15'9 15'9 16'0						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'3 00'3 00'3 00'3 00'3 00'3			HP 57'8 58'0 58'1 58'3 58'5 58'6						
	SHA 115° 115° 114° 114° 114° 114°			SHA 069° 068° 068° 068° 068° 068°			SHA 182° 180° 178° 176° 173° 171°						
	Greenwich Culmination Time: 11:48			Greenwich Culmination Time: 14:52			Greenwich Culmination Time: 07:30						
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	200 29.4 +00.7	S	17 32.3 +00.5	100 20.1 +02.2	S	14 08.2 -00.1	116 37.8 +02.3	S	18 50.5 -00.1	00			
01	215 30.1 +00.7	S	17 32.8 +00.5	115 22.3 +02.1	S	14 08.1 -00.1	131 40.1 +02.2	S	18 50.4 +00.0	01			
02	230 30.8 +00.8	S	17 33.3 +00.5	130 24.4 +02.2	S	14 08.0 -00.1	146 42.3 +02.3	S	18 50.4 -00.1	02			
03	245 31.6 +00.7	S	17 33.8 +00.4	145 26.6 +02.2	S	14 07.9 -00.1	161 44.6 +02.3	S	18 50.3 +00.0	03			
04	260 32.3 +00.7	S	17 34.2 +00.5	160 28.8 +02.1	S	14 07.8 -00.1	176 46.9 +02.3	S	18 50.3 -00.1	04			
05	275 33.0 +00.7	S	17 34.7 +00.5	175 30.9 +02.2	S	14 07.7 -00.1	191 49.2 +02.2	S	18 50.2 +00.0	05			
06	290 33.7 +00.8	S	17 35.2 +00.5	190 33.1 +02.1	S	14 07.6 -00.2	206 51.4 +02.3	S	18 50.2 -00.1	06			
07	305 34.5 +00.7	S	17 35.7 +00.5	205 35.2 +02.2	S	14 07.4 -00.1	221 53.7 +02.3	S	18 50.1 +00.0	07			
08	320 35.2 +00.7	S	17 36.2 +00.5	220 37.4 +02.1	S	14 07.3 -00.1	236 56.0 +02.2	S	18 50.1 -00.1	08			
09	335 35.9 +00.7	S	17 36.7 +00.4	235 39.5 +02.2	S	14 07.2 -00.1	251 58.2 +02.3	S	18 50.0 +00.0	09			
10	350 36.6 +00.8	S	17 37.1 +00.5	250 41.7 +02.1	S	14 07.1 -00.1	267 00.5 +02.3	S	18 50.0 -00.1	10			
11	5 37.4 +00.7	S	17 37.6 +00.5	265 43.8 +02.2	S	14 07.0 -00.1	282 02.8 +02.2	S	18 49.9 +00.0	11			
12	20 38.1 +00.7	S	17 38.1 +00.5	280 46.0 +02.1	S	14 06.9 -00.1	297 05.0 +02.3	S	18 49.9 -00.1	12			
13	35 38.8 +00.8	S	17 38.6 +00.5	295 48.1 +02.2	S	14 06.8 -00.1	312 07.3 +02.3	S	18 49.8 +00.0	13			
14	50 39.6 +00.7	S	17 39.1 +00.5	310 50.3 +02.1	S	14 06.7 -00.2	327 09.6 +02.3	S	18 49.8 -00.1	14			
15	65 40.3 +00.7	S	17 39.6 +00.4	325 52.4 +02.2	S	14 06.5 -00.1	342 11.9 +02.2	S	18 49.7 +00.0	15			
16	80 41.0 +00.7	S	17 40.0 +00.5	340 54.6 +02.1	S	14 06.4 -00.1	357 14.1 +02.3	S	18 49.7 -00.1	16			
17	95 41.7 +00.8	S	17 40.5 +00.5	355 56.7 +02.2	S	14 06.3 -00.1	12 16.4 +02.3	S	18 49.6 +00.0	17			
18	110 42.5 +00.7	S	17 41.0 +00.5	10 58.9 +02.1	S	14 06.2 -00.1	27 18.7 +02.2	S	18 49.6 -00.1	18			
19	125 43.2 +00.7	S	17 41.5 +00.5	26 01.0 +02.2	S	14 06.1 -00.1	42 20.9 +02.3	S	18 49.5 +00.0	19			
20	140 43.9 +00.7	S	17 42.0 +00.4	41 03.2 +02.1	S	14 06.0 -00.1	57 23.2 +02.3	S	18 49.5 -00.1	20			
21	155 44.6 +00.8	S	17 42.4 +00.5	56 05.3 +02.2	S	14 05.9 -00.2	72 25.5 +02.2	S	18 49.4 +00.0	21			
22	170 45.4 +00.7	S	17 42.9 +00.5	71 07.5 +02.1	S	14 05.7 -00.1	87 27.7 +02.3	S	18 49.4 -00.1	22			
23	185 46.1 +00.7	S	17 43.4 +00.5	86 09.6 +02.2	S	14 05.6 -00.1	102 30.0 +02.3	S	18 49.3 +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 00'0 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 132° 132° 132° 132° 132° 132°			SHA 032° 032° 032° 032° 032° 032°			SHA 049° 049° 048° 048° 048° 048°						
	Greenwich Culmination Time: 10:37			Greenwich Culmination Time: 17:16			Greenwich Culmination Time: 16:11						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 52.1 -00.2	S	21 38.3 +00.4	137 05.2 +00.9	S	24 58.0 -00.4	239 27.6 -28.7	N	00 27.7 -15.4				
01	197 51.9 -00.3	S	21 38.7 +00.4	152 06.1 +00.8	S	24 57.6 -00.4	253 58.9 -28.8	N	00 12.3 -15.5				
02	212 51.6 -00.2	S	21 39.1 +00.4	167 06.9 +00.8	S	24 57.2 -00.5	268 30.1 -28.8	S	00 03.2 +15.5				
03	227 51.4 -00.2	S	21 39.5 +00.4	182 07.7 +00.9	S	24 56.7 -00.4	283 01.3 -28.9	S	00 18.7 +15.5				
04	242 51.2 -00.2	S	21 39.9 +00.4	197 08.6 +00.8	S	24 56.3 -00.5	297 32.4 -28.9	S	00 34.2 +15.5				
05	257 51.0 -00.3	S	21 40.3 +00.4	212 09.4 +00.9	S	24 55.8 -00.4	312 03.5 -28.9	S	00 49.7 +15.5				
06	272 50.7 -00.2	S	21 40.7 +00.4	227 10.3 +00.8	S	24 55.4 -00.5	326 34.6 -29.0	S	01 05.2 +15.6				
07	287 50.5 -00.2	S	21 41.1 +00.4	242 11.1 +00.8	S	24 54.9 -00.4	341 05.6 -29.1	S	01 20.8 +15.6				
08	302 50.3 -00.2	S	21 41.5 +00.4	257 11.9 +00.9	S	24 54.5 -00.4	355 36.5 -29.1	S	01 36.4 +15.5				
09	317 50.1 -00.3	S	21 41.9 +00.4	272 12.8 +00.9	S	24 54.1 -00.5	10 07.4 -29.1	S	01 51.9 +15.6				
10	332 49.8 -00.2	S	21 42.3 +00.4	287 13.7 +00.8	S	24 53.6 -00.4	24 38.3 -29.2	S	02 07.5 +15.6				
11	347 49.6 -00.2	S	21 42.7 +00.4	302 14.5 +00.9	S	24 53.2 -00.5	39 09.1 -29.3	S	02 23.1 +15.7				
12	2 49.4 -00.3	S	21 43.1 +00.4	317 15.4 +00.8	S	24 52.7 -00.4	53 39.8 -29.3	S	02 38.8 +15.6				
13	17 49.1 -00.2	S	21 43.5 +00.4	332 16.2 +00.9	S	24 52.3 -00.5	68 10.5 -29.4	S	02 54.4 +15.6				
14	32 48.9 -00.2	S	21 43.9 +00.4	347 17.1 +00.9	S	24 51.8 -00.4	82 41.1 -29.4	S	03 10.0 +15.7				
15	47 48.7 -00.3	S	21 44.3 +00.4	2 18.0 +00.8	S	24 51.4 -00.4	97 11.7 -29.6	S	03 25.7 +15.6				
16	62 48.4 -00.2	S	21 44.7 +00.4	17 18.8 +00.9	S	24 51.0 -00.5	111 42.1 -29.5	S	03 41.3 +15.7				
17	77 48.2 -00.2	S	21 45.1 +00.4	32 19.7 +00.9	S	24 50.5 -00.4	126 12.6 -29.7	S	03 57.0 +15.6				
18	92 48.0 -00.2	S	21 45.5 +00.4	47 20.6 +00.9	S	24 50.1 -00.5	140 42.9 -29.7	S	04 12.6 +15.6				
19	107 47.8 -00.3	S	21 45.9 +00.4	62 21.5 +00.8	S	24 49.6 -00.4	155 13.2 -29.7	S	04 28.2 +15.7				
20	122 47.5 -00.2	S	21 46.3 +00.4	77 22.3 +00.9	S	24 49.2 -00.5	169 43.5 -29.9	S	04 43.9 +15.6				
21	137 47.3 -00.2	S	21 46.7 +00.4	92 23.2 +00.9	S	24 48.7 -00.4	184 13.6 -29.9	S	04 59.5 +15.7				
22	152 47.1 -00.3	S	21 47.1 +00.4	107 24.1 +00.9	S	24 48.3 -00.5	198 43.7 -29.9	S	05 15.2 +15.6				
23	167 46.8 -00.2	S	21 47.5 +00.3	122 25.0 +00.9	S	24 47.8 -00.4	213 13.8 -30.1	S	05 30.8 +15.6				
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22				UT 02 06 10 14 18 22					
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'3 00'3 00'3 00'3 00'3 00'3				SD 16'0 16'1 16'1 16'1 16'2 16'2					
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'3 00'3 00'3 00'3 00'3 00'3				HP 58'8 59'0 59'1 59'3 59'4 59'6					
	SHA 114° 114° 113° 113° 113° 113°			SHA 068° 068° 068° 068° 068° 067°				SHA 169° 167° 165° 163° 161° 159°					
	Greenwich Culmination Time: 11:48			Greenwich Culmination Time: 14:50				Greenwich Culmination Time: 08:18					

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	200 46.8 +00.7	S	17 43.9 +00.5	101 11.8 +02.1	S	14 05.5 -00.1	117 32.3 +02.2	S	18 49.3 -00.1				
01	215 47.5 +00.8	S	17 44.4 +00.4	116 13.9 +02.2	S	14 05.4 -00.1	132 34.5 +02.3	S	18 49.2 +00.0				
02	230 48.3 +00.7	S	17 44.8 +00.5	131 16.1 +02.1	S	14 05.3 -00.1	147 36.8 +02.3	S	18 49.2 -00.1				
03	245 49.0 +00.7	S	17 45.3 +00.5	146 18.2 +02.2	S	14 05.2 -00.1	162 39.1 +02.2	S	18 49.1 +00.0				
04	260 49.7 +00.7	S	17 45.8 +00.5	161 20.4 +02.1	S	14 05.1 -00.2	177 41.3 +02.3	S	18 49.1 -00.1				
05	275 50.4 +00.7	S	17 46.3 +00.5	176 22.5 +02.2	S	14 04.9 -00.1	192 43.6 +02.3	S	18 49.0 +00.0				
06	290 51.1 +00.8	S	17 46.8 +00.4	191 24.7 +02.1	S	14 04.8 -00.1	207 45.9 +02.2	S	18 49.0 -00.1				
07	305 51.9 +00.7	S	17 47.2 +00.5	206 26.8 +02.2	S	14 04.7 -00.1	222 48.1 +02.3	S	18 48.9 +00.0				
08	320 52.6 +00.7	S	17 47.7 +00.5	221 29.0 +02.1	S	14 04.6 -00.1	237 50.4 +02.3	S	18 48.9 -00.1				
09	335 53.3 +00.7	S	17 48.2 +00.5	236 31.1 +02.2	S	14 04.5 -00.1	252 52.7 +02.2	S	18 48.8 +00.0				
10	350 54.0 +00.8	S	17 48.7 +00.4	251 33.3 +02.1	S	14 04.4 -00.2	267 54.9 +02.3	S	18 48.8 -00.1				
11	5 54.8 +00.7	S	17 49.1 +00.5	266 35.4 +02.2	S	14 04.2 -00.1	282 57.2 +02.3	S	18 48.7 +00.0				
12	20 55.5 +00.7	S	17 49.6 +00.5	281 37.6 +02.1	S	14 04.1 -00.1	297 59.5 +02.2	S	18 48.7 -00.1				
13	35 56.2 +00.7	S	17 50.1 +00.5	296 39.7 +02.2	S	14 04.0 -00.1	313 01.7 +02.3	S	18 48.6 +00.0				
14	50 56.9 +00.7	S	17 50.6 +00.5	311 41.9 +02.1	S	14 03.9 -00.1	328 04.0 +02.3	S	18 48.6 -00.1				
15	65 57.6 +00.8	S	17 51.1 +00.4	326 44.0 +02.2	S	14 03.8 -00.1	343 06.3 +02.2	S	18 48.5 -00.1				
16	80 58.4 +00.7	S	17 51.5 +00.5	341 46.2 +02.1	S	14 03.7 -00.2	358 08.5 +02.3	S	18 48.4 +00.0				
17	95 59.1 +00.7	S	17 52.0 +00.5	356 48.3 +02.2	S	14 03.5 -00.1	13 10.8 +02.3	S	18 48.4 -00.1				
18	110 59.8 +00.7	S	17 52.5 +00.5	11 50.5 +02.1	S	14 03.4 -00.1	28 13.1 +02.2	S	18 48.3 +00.0				
19	126 00.5 +00.7	S	17 53.0 +00.4	26 52.6 +02.1	S	14 03.3 -00.1	43 15.3 +02.3	S	18 48.3 -00.1				
20	141 01.2 +00.8	S	17 53.4 +00.5	41 54.7 +02.2	S	14 03.2 -00.1	58 17.6 +02.3	S	18 48.2 +00.0				
21	156 02.0 +00.7	S	17 53.9 +00.5	56 56.9 +02.1	S	14 03.1 -00.1	73 19.9 +02.2	S	18 48.2 -00.1				
22	171 02.7 +00.7	S	17 54.4 +00.5	71 59.0 +02.2	S	14 03.0 -00.1	88 22.1 +02.3	S	18 48.1 +00.0				
23	186 03.4 +00.7	S	17 54.9 +00.4	87 01.2 +02.1	S	14 02.9 -00.2	103 24.4 +02.3	S	18 48.1 -00.1				
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22				UT 02 06 10 14 18 22					
	SD 00'0 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 132° 132° 131° 131° 131° 131°			SHA 032° 032° 032° 032° 032° 032°				SHA 048° 048° 048° 048° 048° 048°					
	Greenwich Culmination Time: 10:36			Greenwich Culmination Time: 17:12				Greenwich Culmination Time: 16:07					

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 46.6 -00.2	S 21 47.8 +00.4	137 25.9 +00.9	S 24 47.4 -00.5	227 43.7 -30.1	S 05 46.4 +15.6	00						
01	197 46.4 -00.3	S 21 48.2 +00.4	152 26.8 +00.9	S 24 46.9 -00.4	242 13.6 -30.2	S 06 02.0 +15.6	01						
02	212 46.1 -00.2	S 21 48.6 +00.4	167 27.7 +00.9	S 24 46.5 -00.5	256 43.4 -30.3	S 06 17.6 +15.6	02						
03	227 45.9 -00.2	S 21 49.0 +00.4	182 28.6 +00.9	S 24 46.0 -00.4	271 13.1 -30.3	S 06 33.2 +15.6	03						
04	242 45.7 -00.3	S 21 49.4 +00.4	197 29.5 +00.9	S 24 45.6 -00.5	285 42.8 -30.5	S 06 48.8 +15.5	04						
05	257 45.4 -00.2	S 21 49.8 +00.4	212 30.4 +00.9	S 24 45.1 -00.4	300 12.3 -30.5	S 07 04.3 +15.6	05						
06	272 45.2 -00.2	S 21 50.2 +00.4	227 31.3 +00.9	S 24 44.7 -00.5	314 41.8 -30.6	S 07 19.9 +15.5	06						
07	287 45.0 -00.3	S 21 50.6 +00.3	242 32.2 +01.0	S 24 44.2 -00.4	329 11.2 -30.6	S 07 35.4 +15.5	07						
08	302 44.7 -00.2	S 21 50.9 +00.4	257 33.2 +00.9	S 24 43.8 -00.5	343 40.6 -30.8	S 07 50.9 +15.4	08						
09	317 44.5 -00.3	S 21 51.3 +00.4	272 34.1 +00.9	S 24 43.3 -00.5	358 09.8 -30.8	S 08 06.3 +15.5	09						
10	332 44.2 -00.2	S 21 51.7 +00.4	287 35.0 +00.9	S 24 42.8 -00.4	12 39.0 -30.9	S 08 21.8 +15.4	10						
11	347 44.0 -00.2	S 21 52.1 +00.4	302 35.9 +00.9	S 24 42.4 -00.5	27 08.1 -31.0	S 08 37.2 +15.4	11						
12	2 43.8 -00.3	S 21 52.5 +00.3	317 36.8 +01.0	S 24 41.9 -00.4	41 37.1 -31.1	S 08 52.6 +15.3	12						
13	17 43.5 -00.2	S 21 52.8 +00.4	332 37.8 +00.9	S 24 41.5 -00.5	56 06.0 -31.2	S 09 07.9 +15.4	13						
14	32 43.3 -00.2	S 21 53.2 +00.4	347 38.7 +00.9	S 24 41.0 -00.4	70 34.8 -31.3	S 09 23.3 +15.2	14						
15	47 43.1 -00.3	S 21 53.6 +00.4	2 39.6 +01.0	S 24 40.6 -00.5	85 03.5 -31.4	S 09 38.5 +15.3	15						
16	62 42.8 -00.2	S 21 54.0 +00.4	17 40.6 +00.9	S 24 40.1 -00.4	99 32.1 -31.4	S 09 53.8 +15.2	16						
17	77 42.6 -00.2	S 21 54.4 +00.3	32 41.5 +01.0	S 24 39.7 -00.5	114 00.7 -31.6	S 10 09.0 +15.2	17						
18	92 42.4 -00.3	S 21 54.7 +00.4	47 42.5 +00.9	S 24 39.2 -00.5	128 29.1 -31.6	S 10 24.2 +15.1	18						
19	107 42.1 -00.2	S 21 55.1 +00.4	62 43.4 +01.0	S 24 38.7 -00.4	142 57.5 -31.8	S 10 39.3 +15.1	19						
20	122 41.9 -00.3	S 21 55.5 +00.4	77 44.4 +00.9	S 24 38.3 -00.5	157 25.7 -31.8	S 10 54.4 +15.0	20						
21	137 41.6 -00.2	S 21 55.9 +00.3	92 45.3 +01.0	S 24 37.8 -00.4	171 53.9 -31.9	S 11 09.4 +15.0	21						
22	152 41.4 -00.2	S 21 56.2 +00.4	107 46.3 +00.9	S 24 37.4 -00.5	186 22.0 -32.1	S 11 24.4 +15.0	22						
23	167 41.2 -00.3	S 21 56.6 +00.4	122 47.2 +01.0	S 24 36.9 -00.5	200 49.9 -32.1	S 11 39.4 +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 00'3 00'3 00'3 00'3 00'3 00'3		SD 16'3 16'3 16'4 16'4 16'4 16'5								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'3 00'3 00'3 00'3 00'3 00'3		HP 59'7 59'9 60'0 60'2 60'3 60'4								
	SHA 113° 112° 112° 112° 112° 112°		SHA 067° 067° 067° 067° 067° 067°		SHA 157° 154° 152° 150° 148° 145°								
	Greenwich Culmination Time: 11:49		Greenwich Culmination Time: 14:49		Greenwich Culmination Time: 09:07								

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	201 04.1 +00.7	S 17 55.3 +00.5	102 03.3 +02.2	S 14 02.7 -00.1	118 26.7 +02.2	S 18 48.0 +00.0	00						
01	216 04.8 +00.7	S 17 55.8 +00.5	117 05.5 +02.1	S 14 02.6 -00.1	133 28.9 +02.3	S 18 48.0 -00.1	01						
02	231 05.5 +00.8	S 17 56.3 +00.5	132 07.6 +02.1	S 14 02.5 -00.1	148 31.2 +02.3	S 18 47.9 +00.0	02						
03	246 06.3 +00.7	S 17 56.8 +00.4	147 09.7 +02.2	S 14 02.4 -00.1	163 33.5 +02.2	S 18 47.9 -00.1	03						
04	261 07.0 +00.7	S 17 57.2 +00.5	162 11.9 +02.1	S 14 02.3 -00.2	178 35.7 +02.3	S 18 47.8 +00.0	04						
05	276 07.7 +00.7	S 17 57.7 +00.5	177 14.0 +02.2	S 14 02.1 -00.1	193 38.0 +02.3	S 18 47.8 -00.1	05						
06	291 08.4 +00.7	S 17 58.2 +00.4	192 16.2 +02.1	S 14 02.0 -00.1	208 40.3 +02.2	S 18 47.7 +00.0	06						
07	306 09.1 +00.8	S 17 58.6 +00.5	207 18.3 +02.2	S 14 01.9 -00.1	223 42.5 +02.3	S 18 47.7 -00.1	07						
08	321 09.9 +00.7	S 17 59.1 +00.5	222 20.5 +02.1	S 14 01.8 -00.1	238 44.8 +02.2	S 18 47.6 +00.0	08						
09	336 10.6 +00.7	S 17 59.6 +00.5	237 22.6 +02.1	S 14 01.7 -00.1	253 47.0 +02.3	S 18 47.6 -00.1	09						
10	351 11.3 +00.7	S 18 00.1 +00.4	252 24.7 +02.2	S 14 01.6 -00.2	268 49.3 +02.3	S 18 47.5 +00.0	10						
11	6 12.0 +00.7	S 18 00.5 +00.5	267 26.9 +02.1	S 14 01.4 -00.1	283 51.6 +02.2	S 18 47.5 -00.1	11						
12	21 12.7 +00.7	S 18 01.0 +00.5	282 29.0 +02.2	S 14 01.3 -00.1	298 53.8 +02.3	S 18 47.4 +00.0	12						
13	36 13.4 +00.7	S 18 01.5 +00.4	297 31.2 +02.1	S 14 01.2 -00.1	313 56.1 +02.3	S 18 47.4 -00.1	13						
14	51 14.1 +00.8	S 18 01.9 +00.5	312 33.3 +02.1	S 14 01.1 -00.1	328 58.4 +02.2	S 18 47.3 +00.0	14						
15	66 14.9 +00.7	S 18 02.4 +00.5	327 35.4 +02.2	S 14 01.0 -00.1	344 00.6 +02.3	S 18 47.3 -00.1	15						
16	81 15.6 +00.7	S 18 02.9 +00.5	342 37.6 +02.1	S 14 00.9 -00.2	359 02.9 +02.2	S 18 47.2 +00.0	16						
17	96 16.3 +00.7	S 18 03.4 +00.4	357 39.7 +02.2	S 14 00.7 -00.1	14 05.1 +02.3	S 18 47.2 -00.1	17						
18	111 17.0 +00.7	S 18 03.8 +00.5	12 41.9 +02.1	S 14 00.6 -00.1	29 07.4 +02.3	S 18 47.1 +00.0	18						
19	126 17.7 +00.7	S 18 04.3 +00.5	27 44.0 +02.1	S 14 00.5 -00.1	44 09.7 +02.2	S 18 47.1 -00.1	19						
20	141 18.4 +00.8	S 18 04.8 +00.4	42 46.1 +02.2	S 14 00.4 -00.1	59 11.9 +02.3	S 18 47.0 -00.1	20						
21	156 19.2 +00.7	S 18 05.2 +00.5	57 48.3 +02.1	S 14 00.3 -00.2	74 14.2 +02.3	S 18 46.9 +00.0	21						
22	171 19.9 +00.7	S 18 05.7 +00.5	72 50.4 +02.2	S 14 00.1 -00.1	89 16.5 +02.2	S 18 46.9 -00.1	22						
23	186 20.6 +00.7	S 18 06.2 +00.4	87 52.6 +02.1	S 14 00.0 -00.1	104 18.7 +02.3	S 18 46.8 +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 131° 131° 131° 131° 130° 130°		SHA 032° 032° 032° 032° 032° 032°		SHA 048° 048° 048° 048° 048° 048°								
	Greenwich Culmination Time: 10:35		Greenwich Culmination Time: 17:09		Greenwich Culmination Time: 16:03								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 40.9 -00.2	S	21 57.0 +00.3	137 48.2 +01.0	S	24 36.4 -00.4	215 17.8 -32.2	S	11 54.2 +14.9	00			
01	197 40.7 -00.3	S	21 57.3 +00.4	152 49.2 +00.9	S	24 36.0 -00.5	229 45.6 -32.4	S	12 09.1 +14.7	01			
02	212 40.4 -00.2	S	21 57.7 +00.4	167 50.1 +01.0	S	24 35.5 -00.4	244 13.2 -32.4	S	12 23.8 +14.8	02			
03	227 40.2 -00.2	S	21 58.1 +00.4	182 51.1 +01.0	S	24 35.1 -00.5	258 40.8 -32.5	S	12 38.6 +14.6	03			
04	242 40.0 -00.3	S	21 58.5 +00.3	197 52.1 +01.0	S	24 34.6 -00.5	273 08.3 -32.7	S	12 53.2 +14.6	04			
05	257 39.7 -00.2	S	21 58.8 +00.4	212 53.1 +00.9	S	24 34.1 -00.4	287 35.6 -32.7	S	13 07.8 +14.5	05			
06	272 39.5 -00.3	S	21 59.2 +00.4	227 54.0 +01.0	S	24 33.7 -00.5	302 02.9 -32.9	S	13 22.3 +14.5	06			
07	287 39.2 -00.2	S	21 59.6 +00.3	242 55.0 +01.0	S	24 33.2 -00.5	316 30.0 -32.9	S	13 36.8 +14.4	07			
08	302 39.0 -00.2	S	21 59.9 +00.4	257 56.0 +01.0	S	24 32.7 -00.4	330 57.1 -33.1	S	13 51.2 +14.3	08			
09	317 38.8 -00.3	S	22 00.3 +00.4	272 57.0 +01.0	S	24 32.3 -00.5	345 24.0 -33.2	S	14 05.5 +14.3	09			
10	332 38.5 -00.2	S	22 00.7 +00.3	287 58.0 +01.0	S	24 31.8 -00.5	359 50.8 -33.3	S	14 19.8 +14.1	10			
11	347 38.3 -00.3	S	22 01.0 +00.4	302 59.0 +01.0	S	24 31.3 -00.4	14 17.5 -33.4	S	14 33.9 +14.1	11			
12	2 38.0 -00.2	S	22 01.4 +00.3	317 60.0 +01.0	S	24 30.9 -00.5	28 44.1 -33.5	S	14 48.0 +14.0	12			
13	17 37.8 -00.3	S	22 01.7 +00.4	333 01.0 +01.0	S	24 30.4 -00.4	43 10.6 -33.6	S	15 02.0 +14.0	13			
14	32 37.5 -00.2	S	22 02.1 +00.4	348 02.0 +01.0	S	24 30.0 -00.5	57 37.0 -33.7	S	15 16.0 +13.8	14			
15	47 37.3 -00.3	S	22 02.5 +00.3	3 03.0 +01.0	S	24 29.5 -00.5	72 03.3 -33.8	S	15 29.8 +13.8	15			
16	62 37.0 -00.2	S	22 02.8 +00.4	18 04.0 +01.0	S	24 29.0 -00.5	86 29.5 -34.0	S	15 43.6 +13.6	16			
17	77 36.8 -00.2	S	22 03.2 +00.3	33 05.0 +01.0	S	24 28.5 -00.4	100 55.5 -34.1	S	15 57.2 +13.6	17			
18	92 36.6 -00.3	S	22 03.5 +00.4	48 06.0 +01.0	S	24 28.1 -00.5	115 21.4 -34.1	S	16 10.8 +13.5	18			
19	107 36.3 -00.2	S	22 03.9 +00.4	63 07.0 +01.1	S	24 27.6 -00.5	129 47.3 -34.3	S	16 24.3 +13.4	19			
20	122 36.1 -00.3	S	22 04.3 +00.3	78 08.1 +01.0	S	24 27.1 -00.4	144 13.0 -34.4	S	16 37.7 +13.3	20			
21	137 35.8 -00.2	S	22 04.6 +00.4	93 09.1 +01.0	S	24 26.7 -00.5	158 38.6 -34.5	S	16 51.0 +13.2	21			
22	152 35.6 -00.3	S	22 05.0 +00.3	108 10.1 +01.0	S	24 26.2 -00.5	173 04.1 -34.7	S	17 04.2 +13.1	22			
23	167 35.3 -00.2	S	22 05.3 +00.4	123 11.1 +01.1	S	24 25.7 -00.4	187 29.4 -34.7	S	17 17.3 +12.9	23			
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	00'3	00'3	00'3	00'3	00'3	00'3
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'3	00'3	00'3	00'3	00'4	00'4
SHA	112°	111°	111°	111°	111°	111°	SHA	067°	067°	066°	066°	066°	066°
Greenwich Culmination Time: 11:49							Greenwich Culmination Time: 14:47						
Greenwich Culmination Time: 10:00													

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	201 21.3 +00.7	S	18 06.6 +00.5	102 54.7 +02.1	S	13 59.9 -00.1	119 21.0 +02.2	S	18 46.8 -00.1	00			
01	216 22.0 +00.7	S	18 07.1 +00.5	117 56.8 +02.2	S	13 59.8 -00.1	134 23.2 +02.3	S	18 46.7 +00.0	01			
02	231 22.7 +00.7	S	18 07.6 +00.4	132 59.0 +02.1	S	13 59.7 -00.2	149 25.5 +02.3	S	18 46.7 -00.1	02			
03	246 23.4 +00.7	S	18 08.0 +00.5	148 01.1 +02.1	S	13 59.5 -00.1	164 27.8 +02.2	S	18 46.6 +00.0	03			
04	261 24.1 +00.8	S	18 08.5 +00.5	163 03.2 +02.2	S	13 59.4 -00.1	179 30.0 +02.3	S	18 46.6 -00.1	04			
05	276 24.9 +00.7	S	18 09.0 +00.4	178 05.4 +02.1	S	13 59.3 -00.1	194 32.3 +02.3	S	18 46.5 +00.0	05			
06	291 25.6 +00.7	S	18 09.4 +00.5	193 07.5 +02.2	S	13 59.2 -00.1	209 34.6 +02.2	S	18 46.5 -00.1	06			
07	306 26.3 +00.7	S	18 09.9 +00.5	208 09.7 +02.1	S	13 59.1 -00.1	224 36.8 +02.3	S	18 46.4 +00.0	07			
08	321 27.0 +00.7	S	18 10.4 +00.4	223 11.8 +02.1	S	13 59.0 -00.2	239 39.1 +02.2	S	18 46.4 -00.1	08			
09	336 27.7 +00.7	S	18 10.8 +00.5	238 13.9 +02.2	S	13 58.8 -00.1	254 41.3 +02.3	S	18 46.3 +00.0	09			
10	351 28.4 +00.7	S	18 11.3 +00.5	253 16.1 +02.1	S	13 58.7 -00.1	269 43.6 +02.3	S	18 46.3 -00.1	10			
11	6 29.1 +00.7	S	18 11.8 +00.4	268 18.2 +02.1	S	13 58.6 -00.1	284 45.9 +02.2	S	18 46.2 +00.0	11			
12	21 29.8 +00.7	S	18 12.2 +00.5	283 20.3 +02.2	S	13 58.5 -00.1	299 48.1 +02.3	S	18 46.2 -00.1	12			
13	36 30.5 +00.8	S	18 12.7 +00.5	298 22.5 +02.1	S	13 58.4 -00.2	314 50.4 +02.2	S	18 46.1 +00.0	13			
14	51 31.3 +00.7	S	18 13.2 +00.4	313 24.6 +02.1	S	13 58.2 -00.1	329 52.6 +02.3	S	18 46.1 -00.1	14			
15	66 32.0 +00.7	S	18 13.6 +00.5	328 26.7 +02.2	S	13 58.1 -00.1	344 54.9 +02.3	S	18 46.0 -00.1	15			
16	81 32.7 +00.7	S	18 14.1 +00.5	343 28.9 +02.1	S	13 58.0 -00.1	359 57.2 +02.2	S	18 45.9 +00.0	16			
17	96 33.4 +00.7	S	18 14.6 +00.4	358 31.0 +02.1	S	13 57.9 -00.2	14 59.4 +02.3	S	18 45.9 -00.1	17			
18	111 34.1 +00.7	S	18 15.0 +00.5	13 33.1 +02.2	S	13 57.7 -00.1	30 01.7 +02.2	S	18 45.8 +00.0	18			
19	126 34.8 +00.7	S	18 15.5 +00.5	28 35.3 +02.1	S	13 57.6 -00.1	45 03.9 +02.3	S	18 45.8 -00.1	19			
20	141 35.5 +00.7	S	18 16.0 +00.4	43 37.4 +02.1	S	13 57.5 -00.1	60 06.2 +02.3	S	18 45.7 +00.0	20			
21	156 36.2 +00.7	S	18 16.4 +00.5	58 39.5 +02.2	S	13 57.4 -00.1	75 08.5 +02.2	S	18 45.7 -00.1	21			
22	171 36.9 +00.7	S	18 16.9 +00.4	73 41.7 +02.1	S	13 57.3 -00.2	90 10.7 +02.3	S	18 45.6 +00.0	22			
23	186 37.6 +00.7	S	18 17.3 +00.5	88 43.8 +02.1	S	13 57.1 -00.1	105 13.0 +02.2	S	18 45.6 -00.1	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	00'3	00'3	00'3	00'3	00'3	00'3
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	130°	130°	130°	130°	130°	130°	SHA	032°	032°	032°	032°	032°	032°
Greenwich Culmination Time: 10:34							Greenwich Culmination Time: 17:05						
Greenwich Culmination Time: 16:00													

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 35.1 -00.3	S	22 05.7 +00.3	138 12.2 +01.0	S	24 25.3 -00.5	201 54.7 -34.9	S	17 30.2 +12.9	00			
01	197 34.8 -00.2	S	22 06.0 +00.4	153 13.2 +01.0	S	24 24.8 -00.5	216 19.8 -34.9	S	17 43.1 +12.8	01			
02	212 34.6 -00.3	S	22 06.4 +00.3	168 14.2 +01.1	S	24 24.3 -00.4	230 44.9 -35.1	S	17 55.9 +12.6	02			
03	227 34.3 -00.2	S	22 06.7 +00.4	183 15.3 +01.0	S	24 23.9 -00.5	245 09.8 -35.2	S	18 08.5 +12.6	03			
04	242 34.1 -00.2	S	22 07.1 +00.3	198 16.3 +01.1	S	24 23.4 -00.5	259 34.6 -35.3	S	18 21.1 +12.4	04			
05	257 33.9 -00.3	S	22 07.4 +00.4	213 17.4 +01.0	S	24 22.9 -00.5	273 59.3 -35.4	S	18 33.5 +12.3	05			
06	272 33.6 -00.2	S	22 07.8 +00.3	228 18.4 +01.1	S	24 22.4 -00.4	288 23.9 -35.6	S	18 45.8 +12.2	06			
07	287 33.4 -00.3	S	22 08.1 +00.4	243 19.5 +01.0	S	24 22.0 -00.5	302 48.3 -35.6	S	18 58.0 +12.1	07			
08	302 33.1 -00.2	S	22 08.5 +00.3	258 20.5 +01.1	S	24 21.5 -00.5	317 12.7 -35.8	S	19 10.1 +11.9	08			
09	317 32.9 -00.3	S	22 08.8 +00.4	273 21.6 +01.1	S	24 21.0 -00.5	331 36.9 -35.9	S	19 22.0 +11.8	09			
10	332 32.6 -00.2	S	22 09.2 +00.3	288 22.7 +01.0	S	24 20.5 -00.4	346 01.0 -36.0	S	19 33.8 +11.7	10			
11	347 32.4 -00.3	S	22 09.5 +00.4	303 23.7 +01.1	S	24 20.1 -00.5	0 25.0 -36.1	S	19 45.5 +11.6	11			
12	2 32.1 -00.2	S	22 09.9 +00.3	318 24.8 +01.1	S	24 19.6 -00.5	14 48.9 -36.2	S	19 57.1 +11.4	12			
13	17 31.9 -00.3	S	22 10.2 +00.4	333 25.9 +01.1	S	24 19.1 -00.5	29 12.7 -36.3	S	20 08.5 +11.3	13			
14	32 31.6 -00.2	S	22 10.6 +00.3	348 27.0 +01.0	S	24 18.6 -00.4	43 36.4 -36.5	S	20 19.8 +11.1	14			
15	47 31.4 -00.3	S	22 10.9 +00.4	3 28.0 +01.1	S	24 18.2 -00.5	57 59.9 -36.5	S	20 30.9 +11.0	15			
16	62 31.1 -00.2	S	22 11.3 +00.3	18 29.1 +01.1	S	24 17.7 -00.5	72 23.4 -36.6	S	20 41.9 +10.9	16			
17	77 30.9 -00.3	S	22 11.6 +00.3	33 30.2 +01.1	S	24 17.2 -00.5	86 46.8 -36.8	S	20 52.8 +10.7	17			
18	92 30.6 -00.2	S	22 11.9 +00.4	48 31.3 +01.1	S	24 16.7 -00.4	101 10.0 -36.9	S	21 03.5 +10.5	18			
19	107 30.4 -00.3	S	22 12.3 +00.3	63 32.4 +01.1	S	24 16.3 -00.5	115 33.1 -37.0	S	21 14.0 +10.5	19			
20	122 30.1 -00.2	S	22 12.6 +00.4	78 33.5 +01.1	S	24 15.8 -00.5	129 56.1 -37.0	S	21 24.5 +10.2	20			
21	137 29.9 -00.3	S	22 13.0 +00.3	93 34.6 +01.1	S	24 15.3 -00.5	144 19.1 -37.2	S	21 34.7 +10.1	21			
22	152 29.6 -00.2	S	22 13.3 +00.3	108 35.7 +01.1	S	24 14.8 -00.5	158 41.9 -37.3	S	21 44.8 +10.0	22			
23	167 29.4 -00.3	S	22 13.6 +00.4	123 36.8 +01.1	S	24 14.3 -00.4	173 04.6 -37.4	S	21 54.8 +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 00'3 00'3 00'3 00'3 00'3 00'3			SD 16'7 16'7 16'7 16'7 16'7 16'7						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'4 00'4 00'4 00'4 00'4 00'4			HP 61'1 61'2 61'3 61'3 61'3 61'4						
	SHA 110° 110° 110° 110° 110° 110°			SHA 066° 066° 066° 066° 066° 066°			SHA 129° 126° 124° 121° 118° 116°						
	Greenwich Culmination Time: 11:49			Greenwich Culmination Time: 14:46			Greenwich Culmination Time: 10:58						
UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	201 38.3 +00.7	S	18 17.8 +00.5	103 45.9 +02.2	S	13 57.0 -00.1	120 15.2 +02.3	S	18 45.5 +00.0	00			
01	216 39.0 +00.8	S	18 18.3 +00.4	118 48.1 +02.1	S	13 56.9 -00.1	135 17.5 +02.2	S	18 45.5 -00.1	01			
02	231 39.8 +00.7	S	18 18.7 +00.5	133 50.2 +02.1	S	13 56.8 -00.1	150 19.7 +02.3	S	18 45.4 +00.0	02			
03	246 40.5 +00.7	S	18 19.2 +00.5	148 52.3 +02.2	S	13 56.7 -00.2	165 22.0 +02.3	S	18 45.4 -00.1	03			
04	261 41.2 +00.7	S	18 19.7 +00.4	163 54.5 +02.1	S	13 56.5 -00.1	180 24.3 +02.2	S	18 45.3 +00.0	04			
05	276 41.9 +00.7	S	18 20.1 +00.5	178 56.6 +02.1	S	13 56.4 -00.1	195 26.5 +02.3	S	18 45.3 -00.1	05			
06	291 42.6 +00.7	S	18 20.6 +00.4	193 58.7 +02.2	S	13 56.3 -00.1	210 28.8 +02.2	S	18 45.2 -00.1	06			
07	306 43.3 +00.7	S	18 21.0 +00.5	209 00.9 +02.1	S	13 56.2 -00.1	225 31.0 +02.3	S	18 45.1 +00.0	07			
08	321 44.0 +00.7	S	18 21.5 +00.5	224 03.0 +02.1	S	13 56.1 -00.2	240 33.3 +02.3	S	18 45.1 -00.1	08			
09	336 44.7 +00.7	S	18 22.0 +00.4	239 05.1 +02.1	S	13 55.9 -00.1	255 35.6 +02.2	S	18 45.0 +00.0	09			
10	351 45.4 +00.7	S	18 22.4 +00.5	254 07.2 +02.2	S	13 55.8 -00.1	270 37.8 +02.3	S	18 45.0 -00.1	10			
11	6 46.1 +00.7	S	18 22.9 +00.4	269 09.4 +02.1	S	13 55.7 -00.1	285 40.1 +02.2	S	18 44.9 +00.0	11			
12	21 46.8 +00.7	S	18 23.3 +00.5	284 11.5 +02.1	S	13 55.6 -00.2	300 42.3 +02.3	S	18 44.9 -00.1	12			
13	36 47.5 +00.7	S	18 23.8 +00.5	299 13.6 +02.2	S	13 55.4 -00.1	315 44.6 +02.2	S	18 44.8 +00.0	13			
14	51 48.2 +00.7	S	18 24.3 +00.4	314 15.8 +02.1	S	13 55.3 -00.1	330 46.8 +02.3	S	18 44.8 -00.1	14			
15	66 48.9 +00.7	S	18 24.7 +00.5	329 17.9 +02.1	S	13 55.2 -00.1	345 49.1 +02.3	S	18 44.7 +00.0	15			
16	81 49.6 +00.7	S	18 25.2 +00.4	344 20.0 +02.1	S	13 55.1 -00.2	0 51.4 +02.2	S	18 44.7 -00.1	16			
17	96 50.3 +00.7	S	18 25.6 +00.5	359 22.1 +02.2	S	13 54.9 -00.1	15 53.6 +02.3	S	18 44.6 +00.0	17			
18	111 51.0 +00.7	S	18 26.1 +00.4	14 24.3 +02.1	S	13 54.8 -00.1	30 55.9 +02.2	S	18 44.6 -00.1	18			
19	126 51.7 +00.8	S	18 26.5 +00.5	29 26.4 +02.1	S	13 54.7 -00.1	45 58.1 +02.3	S	18 44.5 -00.1	19			
20	141 52.5 +00.7	S	18 27.0 +00.5	44 28.5 +02.2	S	13 54.6 -00.1	61 00.4 +02.2	S	18 44.4 +00.0	20			
21	156 53.2 +00.7	S	18 27.5 +00.4	59 30.7 +02.1	S	13 54.5 -00.2	76 02.6 +02.3	S	18 44.4 -00.1	21			
22	171 53.9 +00.7	S	18 27.9 +00.5	74 32.8 +02.1	S	13 54.3 -00.1	91 04.9 +02.2	S	18 44.3 +00.0	22			
23	186 54.6 +00.7	S	18 28.4 +00.4	89 34.9 +02.1	S	13 54.2 -00.1	106 07.1 +02.3	S	18 44.3 -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 130° 129° 129° 129° 129° 129°			SHA 032° 032° 032° 032° 032° 032°			SHA 048° 048° 048° 048° 048° 048°						
	Greenwich Culmination Time: 10:32			Greenwich Culmination Time: 17:02			Greenwich Culmination Time: 15:56						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 29.1 -00.3	S	22 14.0 +00.3	138 37.9 +01.1	S	24 13.9 -00.5	187 27.2 -37.5	S	22 04.6 +09.6	00			
01	197 28.8 -00.2	S	22 14.3 +00.3	153 39.0 +01.1	S	24 13.4 -00.5	201 49.7 -37.6	S	22 14.2 +09.5	01			
02	212 28.6 -00.3	S	22 14.6 +00.4	168 40.1 +01.1	S	24 12.9 -00.5	216 12.1 -37.6	S	22 23.7 +09.3	02			
03	227 28.3 -00.2	S	22 15.0 +00.3	183 41.2 +01.1	S	24 12.4 -00.5	230 34.5 -37.8	S	22 33.0 +09.2	03			
04	242 28.1 -00.3	S	22 15.3 +00.3	198 42.3 +01.2	S	24 11.9 -00.4	244 56.7 -37.9	S	22 42.2 +09.0	04			
05	257 27.8 -00.2	S	22 15.6 +00.4	213 43.5 +01.1	S	24 11.5 -00.5	259 18.8 -37.9	S	22 51.2 +08.8	05			
06	272 27.6 -00.3	S	22 16.0 +00.3	228 44.6 +01.1	S	24 11.0 -00.5	273 40.9 -38.1	S	22 60.0 +08.6	06			
07	287 27.3 -00.2	S	22 16.3 +00.3	243 45.7 +01.1	S	24 10.5 -00.5	288 02.8 -38.1	S	23 08.6 +08.5	07			
08	302 27.1 -00.3	S	22 16.6 +00.4	258 46.8 +01.2	S	24 10.0 -00.5	302 24.7 -38.3	S	23 17.1 +08.3	08			
09	317 26.8 -00.2	S	22 17.0 +00.3	273 48.0 +01.1	S	24 09.5 -00.5	316 46.4 -38.3	S	23 25.4 +08.1	09			
10	332 26.6 -00.3	S	22 17.3 +00.3	288 49.1 +01.2	S	24 09.0 -00.4	331 08.1 -38.4	S	23 33.5 +08.0	10			
11	347 26.3 -00.2	S	22 17.6 +00.4	303 50.3 +01.1	S	24 08.6 -00.5	345 29.7 -38.5	S	23 41.5 +07.7	11			
12	2 26.1 -00.3	S	22 18.0 +00.3	318 51.4 +01.1	S	24 08.1 -00.5	359 51.2 -38.5	S	23 49.2 +07.6	12			
13	17 25.8 -00.3	S	22 18.3 +00.3	333 52.5 +01.2	S	24 07.6 -00.5	14 12.7 -38.7	S	23 56.8 +07.4	13			
14	32 25.5 -00.2	S	22 18.6 +00.3	348 53.7 +01.1	S	24 07.1 -00.5	28 34.0 -38.7	S	24 04.2 +07.2	14			
15	47 25.3 -00.3	S	22 18.9 +00.4	3 54.8 +01.2	S	24 06.6 -00.5	42 55.3 -38.7	S	24 11.4 +07.1	15			
16	62 25.0 -00.2	S	22 19.3 +00.3	18 56.0 +01.2	S	24 06.1 -00.4	57 16.6 -38.9	S	24 18.5 +06.8	16			
17	77 24.8 -00.3	S	22 19.6 +00.3	33 57.2 +01.1	S	24 05.7 -00.5	71 37.7 -38.9	S	24 25.3 +06.7	17			
18	92 24.5 -00.2	S	22 19.9 +00.3	48 58.3 +01.2	S	24 05.2 -00.5	85 58.8 -39.0	S	24 32.0 +06.4	18			
19	107 24.3 -00.3	S	22 20.2 +00.3	63 59.5 +01.2	S	24 04.7 -00.5	100 19.8 -39.0	S	24 38.4 +06.3	19			
20	122 24.0 -00.3	S	22 20.5 +00.4	79 00.7 +01.1	S	24 04.2 -00.5	114 40.8 -39.1	S	24 44.7 +06.1	20			
21	137 23.7 -00.2	S	22 20.9 +00.3	94 01.8 +01.2	S	24 03.7 -00.5	129 01.7 -39.2	S	24 50.8 +05.9	21			
22	152 23.5 -00.3	S	22 21.2 +00.3	109 03.0 +01.2	S	24 03.2 -00.5	143 22.5 -39.2	S	24 56.7 +05.7	22			
23	167 23.2 -00.2	S	22 21.5 +00.3	124 04.2 +01.2	S	24 02.7 -00.4	157 43.3 -39.3	S	25 02.4 +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 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'3 00'3 00'3 00'3 00'3 00'3			SD 16'7 16'7 16'7 16'7 16'7 16'7						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'4 00'4 00'4 00'4 00'4 00'4			HP 61'4 61'4 61'4 61'4 61'4 61'4						
	SHA 109° 109° 109° 109° 109° 108°			SHA 066° 065° 065° 065° 065° 065°			SHA 113° 110° 108° 105° 102° 099°						
	Greenwich Culmination Time: 11:50			Greenwich Culmination Time: 14:44			Greenwich Culmination Time: 12:00						
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	201 55.3 +00.7	S	18 28.8 +00.5	104 37.0 +02.2	S	13 54.1 -00.1	121 09.4 +02.3	S	18 44.2 +00.0	00			
01	216 56.0 +00.7	S	18 29.3 +00.4	119 39.2 +02.1	S	13 54.0 -00.2	136 11.7 +02.2	S	18 44.2 -00.1	01			
02	231 56.7 +00.7	S	18 29.7 +00.5	134 41.3 +02.1	S	13 53.8 -00.1	151 13.9 +02.3	S	18 44.1 +00.0	02			
03	246 57.4 +00.7	S	18 30.2 +00.5	149 43.4 +02.1	S	13 53.7 -00.1	166 16.2 +02.2	S	18 44.1 -00.1	03			
04	261 58.1 +00.7	S	18 30.7 +00.4	164 45.5 +02.2	S	13 53.6 -00.1	181 18.4 +02.3	S	18 44.0 +00.0	04			
05	276 58.8 +00.7	S	18 31.1 +00.5	179 47.7 +02.1	S	13 53.5 -00.2	196 20.7 +02.2	S	18 44.0 -00.1	05			
06	291 59.5 +00.7	S	18 31.6 +00.4	194 49.8 +02.1	S	13 53.3 -00.1	211 22.9 +02.3	S	18 43.9 +00.0	06			
07	307 00.2 +00.7	S	18 32.0 +00.5	209 51.9 +02.1	S	13 53.2 -00.1	226 25.2 +02.2	S	18 43.9 -00.1	07			
08	322 00.9 +00.7	S	18 32.5 +00.4	224 54.0 +02.2	S	13 53.1 -00.1	241 27.4 +02.3	S	18 43.8 -00.1	08			
09	337 01.6 +00.7	S	18 32.9 +00.5	239 56.2 +02.1	S	13 53.0 -00.2	256 29.7 +02.3	S	18 43.7 +00.0	09			
10	352 02.3 +00.7	S	18 33.4 +00.4	254 58.3 +02.1	S	13 52.8 -00.1	271 32.0 +02.2	S	18 43.7 -00.1	10			
11	7 03.0 +00.7	S	18 33.8 +00.5	270 00.4 +02.1	S	13 52.7 -00.1	286 34.2 +02.3	S	18 43.6 +00.0	11			
12	22 03.7 +00.7	S	18 34.3 +00.4	285 02.5 +02.2	S	13 52.6 -00.1	301 36.5 +02.2	S	18 43.6 -00.1	12			
13	37 04.4 +00.7	S	18 34.7 +00.5	300 04.7 +02.1	S	13 52.5 -00.1	316 38.7 +02.3	S	18 43.5 +00.0	13			
14	52 05.1 +00.7	S	18 35.2 +00.4	315 06.8 +02.1	S	13 52.4 -00.2	331 41.0 +02.2	S	18 43.5 -00.1	14			
15	67 05.8 +00.7	S	18 35.6 +00.5	330 08.9 +02.1	S	13 52.2 -00.1	346 43.2 +02.3	S	18 43.4 +00.0	15			
16	82 06.5 +00.7	S	18 36.1 +00.5	345 11.0 +02.1	S	13 52.1 -00.1	1 45.5 +02.2	S	18 43.4 -00.1	16			
17	97 07.2 +00.7	S	18 36.6 +00.4	0 13.1 +02.2	S	13 52.0 -00.1	16 47.7 +02.3	S	18 43.3 +00.0	17			
18	112 07.9 +00.7	S	18 37.0 +00.5	15 15.3 +02.1	S	13 51.9 -00.2	31 50.0 +02.2	S	18 43.3 -00.1	18			
19	127 08.6 +00.7	S	18 37.5 +00.4	30 17.4 +02.1	S	13 51.7 -00.1	46 52.2 +02.3	S	18 43.2 -00.1	19			
20	142 09.3 +00.7	S	18 37.9 +00.5	45 19.5 +02.1	S	13 51.6 -00.1	61 54.5 +02.2	S	18 43.1 +00.0	20			
21	157 10.0 +00.7	S	18 38.4 +00.4	60 21.6 +02.2	S	13 51.5 -00.1	76 56.7 +02.3	S	18 43.1 -00.1	21			
22	172 10.7 +00.7	S	18 38.8 +00.5	75 23.8 +02.1	S	13 51.4 -00.2	91 59.0 +02.2	S	18 43.0 +00.0	22			
23	187 11.4 +00.7	S	18 39.3 +00.4	90 25.9 +02.1	S	13 51.2 -00.1	107 01.2 +02.3	S	18 43.0 -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 129° 129° 129° 128° 128° 128°			SHA 032° 032° 032° 032° 031° 031°			SHA 048° 048° 048° 048° 048° 048°						
	Greenwich Culmination Time: 10:31			Greenwich Culmination Time: 16:59			Greenwich Culmination Time: 15:52						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 23.0 -00.3	S	22 21.8 +00.3	139 05.4 +01.2	S	24 02.3 -00.5	172 04.0 -39.3	S	25 07.9 +05.3	00			
01	197 22.7 -00.2	S	22 22.1 +00.4	154 06.6 +01.2	S	24 01.8 -00.5	186 24.7 -39.4	S	25 13.2 +05.1	01			
02	212 22.5 -00.3	S	22 22.5 +00.3	169 07.8 +01.1	S	24 01.3 -00.5	200 45.3 -39.4	S	25 18.3 +04.9	02			
03	227 22.2 -00.3	S	22 22.8 +00.3	184 08.9 +01.2	S	24 00.8 -00.5	215 05.9 -39.4	S	25 23.2 +04.7	03			
04	242 21.9 -00.2	S	22 23.1 +00.3	199 10.1 +01.2	S	24 00.3 -00.5	229 26.5 -39.5	S	25 27.9 +04.5	04			
05	257 21.7 -00.3	S	22 23.4 +00.3	214 11.3 +01.2	S	23 59.8 -00.5	243 47.0 -39.6	S	25 32.4 +04.3	05			
06	272 21.4 -00.2	S	22 23.7 +00.3	229 12.5 +01.2	S	23 59.3 -00.5	258 07.4 -39.5	S	25 36.7 +04.1	06			
07	287 21.2 -00.3	S	22 24.0 +00.3	244 13.7 +01.3	S	23 58.8 -00.5	272 27.9 -39.6	S	25 40.8 +03.9	07			
08	302 20.9 -00.3	S	22 24.3 +00.4	259 15.0 +01.2	S	23 58.3 -00.5	286 48.3 -39.6	S	25 44.7 +03.7	08			
09	317 20.6 -00.2	S	22 24.7 +00.3	274 16.2 +01.2	S	23 57.8 -00.4	301 08.7 -39.6	S	25 48.4 +03.5	09			
10	332 20.4 -00.3	S	22 25.0 +00.3	289 17.4 +01.2	S	23 57.4 -00.5	315 29.1 -39.7	S	25 51.9 +03.3	10			
11	347 20.1 -00.2	S	22 25.3 +00.3	304 18.6 +01.2	S	23 56.9 -00.5	329 49.4 -39.6	S	25 55.2 +03.1	11			
12	2 19.9 -00.3	S	22 25.6 +00.3	319 19.8 +01.2	S	23 56.4 -00.5	344 09.8 -39.7	S	25 58.3 +02.9	12			
13	17 19.6 -00.3	S	22 25.9 +00.3	334 21.0 +01.3	S	23 55.9 -00.5	358 30.1 -39.7	S	26 01.2 +02.6	13			
14	32 19.3 -00.2	S	22 26.2 +00.3	349 22.3 +01.2	S	23 55.4 -00.5	12 50.4 -39.7	S	26 03.8 +02.5	14			
15	47 19.1 -00.3	S	22 26.5 +00.3	4 23.5 +01.2	S	23 54.9 -00.5	27 10.7 -39.7	S	26 06.3 +02.3	15			
16	62 18.8 -00.3	S	22 26.8 +00.3	19 24.7 +01.3	S	23 54.4 -00.5	41 31.0 -39.7	S	26 08.6 +02.0	16			
17	77 18.5 -00.2	S	22 27.1 +00.3	34 26.0 +01.2	S	23 53.9 -00.5	55 51.3 -39.7	S	26 10.6 +01.9	17			
18	92 18.3 -00.3	S	22 27.4 +00.3	49 27.2 +01.3	S	23 53.4 -00.5	70 11.6 -39.7	S	26 12.5 +01.6	18			
19	107 18.0 -00.2	S	22 27.7 +00.3	64 28.5 +01.2	S	23 52.9 -00.5	84 31.9 -39.7	S	26 14.1 +01.5	19			
20	122 17.8 -00.3	S	22 28.0 +00.3	79 29.7 +01.3	S	23 52.4 -00.5	98 52.2 -39.6	S	26 15.6 +01.2	20			
21	137 17.5 -00.3	S	22 28.3 +00.3	94 31.0 +01.2	S	23 51.9 -00.5	113 12.6 -39.7	S	26 16.8 +01.0	21			
22	152 17.2 -00.2	S	22 28.6 +00.3	109 32.2 +01.3	S	23 51.4 -00.5	127 32.9 -39.6	S	26 17.8 +00.8	22			
23	167 17.0 -00.3	S	22 28.9 +00.3	124 33.5 +01.2	S	23 50.9 -00.5	141 53.3 -39.6	S	26 18.6 +00.7	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 00'3 00'3 00'3 00'3 00'3 00'3				SD 16'7 16'7 16'7 16'7 16'7 16'6					
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'4 00'4 00'4 00'4 00'4 00'4				HP 61'4 61'3 61'3 61'2 61'1 61'0					
	SHA 108° 108° 108° 108° 108° 107°			SHA 065° 065° 065° 065° 065° 065°				SHA 097° 094° 091° 088° 085° 083°					
	Greenwich Culmination Time: 11:50			Greenwich Culmination Time: 14:42				Greenwich Culmination Time: 13:06					

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	202 12.1 +00.6	S	18 39.7 +00.5	105 28.0 +02.1	S	13 51.1 -00.1	122 03.5 +02.3	S	18 42.9 +00.0	00			
01	217 12.7 +00.7	S	18 40.2 +00.4	120 30.1 +02.1	S	13 51.0 -00.2	137 05.8 +02.2	S	18 42.9 -00.1	01			
02	232 13.4 +00.7	S	18 40.6 +00.5	135 32.2 +02.2	S	13 50.8 -00.1	152 08.0 +02.3	S	18 42.8 +00.0	02			
03	247 14.1 +00.7	S	18 41.1 +00.4	150 34.4 +02.1	S	13 50.7 -00.1	167 10.3 +02.2	S	18 42.8 -00.1	03			
04	262 14.8 +00.7	S	18 41.5 +00.5	165 36.5 +02.1	S	13 50.6 -00.1	182 12.5 +02.3	S	18 42.7 -00.1	04			
05	277 15.5 +00.7	S	18 42.0 +00.4	180 38.6 +02.1	S	13 50.5 -00.2	197 14.8 +02.2	S	18 42.6 +00.0	05			
06	292 16.2 +00.7	S	18 42.4 +00.5	195 40.7 +02.1	S	13 50.3 -00.1	212 17.0 +02.3	S	18 42.6 -00.1	06			
07	307 16.9 +00.7	S	18 42.9 +00.4	210 42.8 +02.1	S	13 50.2 -00.1	227 19.3 +02.2	S	18 42.5 +00.0	07			
08	322 17.6 +00.7	S	18 43.3 +00.5	225 44.9 +02.2	S	13 50.1 -00.1	242 21.5 +02.3	S	18 42.5 -00.1	08			
09	337 18.3 +00.7	S	18 43.8 +00.4	240 47.1 +02.1	S	13 50.0 -00.2	257 23.8 +02.2	S	18 42.4 +00.0	09			
10	352 19.0 +00.7	S	18 44.2 +00.4	255 49.2 +02.1	S	13 49.8 -00.1	272 26.0 +02.3	S	18 42.4 -00.1	10			
11	7 19.7 +00.7	S	18 44.6 +00.5	270 51.3 +02.1	S	13 49.7 -00.1	287 28.3 +02.2	S	18 42.3 +00.0	11			
12	22 20.4 +00.7	S	18 45.1 +00.4	285 53.4 +02.1	S	13 49.6 -00.1	302 30.5 +02.3	S	18 42.3 -00.1	12			
13	37 21.1 +00.7	S	18 45.5 +00.5	300 55.5 +02.2	S	13 49.5 -00.2	317 32.8 +02.2	S	18 42.2 -00.1	13			
14	52 21.8 +00.7	S	18 46.0 +00.4	315 57.7 +02.1	S	13 49.3 -00.1	332 35.0 +02.3	S	18 42.1 +00.0	14			
15	67 22.5 +00.7	S	18 46.4 +00.5	330 59.8 +02.1	S	13 49.2 -00.1	347 37.3 +02.2	S	18 42.1 -00.1	15			
16	82 23.2 +00.7	S	18 46.9 +00.4	346 01.9 +02.1	S	13 49.1 -00.1	2 39.5 +02.3	S	18 42.0 +00.0	16			
17	97 23.9 +00.7	S	18 47.3 +00.5	1 04.0 +02.1	S	13 49.0 -00.2	17 41.8 +02.2	S	18 42.0 -00.1	17			
18	112 24.6 +00.7	S	18 47.8 +00.4	16 06.1 +02.1	S	13 48.8 -00.1	32 44.0 +02.3	S	18 41.9 +00.0	18			
19	127 25.3 +00.6	S	18 48.2 +00.5	31 08.2 +02.2	S	13 48.7 -00.1	47 46.3 +02.2	S	18 41.9 -00.1	19			
20	142 25.9 +00.7	S	18 48.7 +00.4	46 10.4 +02.1	S	13 48.6 -00.2	62 48.5 +02.3	S	18 41.8 +00.0	20			
21	157 26.6 +00.7	S	18 49.1 +00.5	61 12.5 +02.1	S	13 48.4 -00.1	77 50.8 +02.2	S	18 41.8 -00.1	21			
22	172 27.3 +00.7	S	18 49.6 +00.4	76 14.6 +02.1	S	13 48.3 -00.1	92 53.0 +02.3	S	18 41.7 -00.1	22			
23	187 28.0 +00.7	S	18 50.0 +00.4	91 16.7 +02.1	S	13 48.2 -00.1	107 55.3 +02.2	S	18 41.6 +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 128° 128° 128° 128° 128° 128°			SHA 031° 031° 031° 031° 031° 031°				SHA 048° 048° 048° 048° 048° 048°					
	Greenwich Culmination Time: 10:30			Greenwich Culmination Time: 16:55				Greenwich Culmination Time: 15:49					

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 16.7 -00.3	S	22 29.2 +00.3	139 34.7 +01.3	S	23 50.4 -00.4	156 13.7 -39.6	S	26 19.3 +00.4				
01	197 16.4 -00.2	S	22 29.5 +00.3	154 36.0 +01.3	S	23 50.0 -00.5	170 34.1 -39.6	S	26 19.7 +00.2				
02	212 16.2 -00.3	S	22 29.8 +00.3	169 37.3 +01.2	S	23 49.5 -00.5	184 54.5 -39.5	S	26 19.9 +00.0				
03	227 15.9 -00.3	S	22 30.1 +00.3	184 38.5 +01.3	S	23 49.0 -00.5	199 15.0 -39.5	S	26 19.9 -00.2				
04	242 15.6 -00.2	S	22 30.4 +00.3	199 39.8 +01.3	S	23 48.5 -00.5	213 35.5 -39.4	S	26 19.7 -00.4				
05	257 15.4 -00.3	S	22 30.7 +00.3	214 41.1 +01.3	S	23 48.0 -00.5	227 56.1 -39.4	S	26 19.3 -00.6				
06	272 15.1 -00.2	S	22 31.0 +00.3	229 42.4 +01.3	S	23 47.5 -00.5	242 16.7 -39.4	S	26 18.7 -00.8				
07	287 14.9 -00.3	S	22 31.3 +00.3	244 43.7 +01.2	S	23 47.0 -00.5	256 37.3 -39.3	S	26 17.9 -01.0				
08	302 14.6 -00.3	S	22 31.6 +00.3	259 44.9 +01.3	S	23 46.5 -00.5	270 58.0 -39.3	S	26 16.9 -01.3				
09	317 14.3 -00.2	S	22 31.9 +00.3	274 46.2 +01.3	S	23 46.0 -00.5	285 18.7 -39.2	S	26 15.6 -01.4				
10	332 14.1 -00.3	S	22 32.2 +00.3	289 47.5 +01.3	S	23 45.5 -00.5	299 39.5 -39.1	S	26 14.2 -01.6				
11	347 13.8 -00.3	S	22 32.5 +00.3	304 48.8 +01.3	S	23 45.0 -00.5	314 00.4 -39.1	S	26 12.6 -01.8				
12	2 13.5 -00.2	S	22 32.8 +00.3	319 50.1 +01.3	S	23 44.5 -00.5	328 21.3 -39.1	S	26 10.8 -02.0				
13	17 13.3 -00.3	S	22 33.1 +00.3	334 51.4 +01.3	S	23 44.0 -00.5	342 42.2 -38.9	S	26 08.8 -02.2				
14	32 13.0 -00.3	S	22 33.4 +00.3	349 52.7 +01.4	S	23 43.5 -00.5	357 03.3 -38.9	S	26 06.6 -02.4				
15	47 12.7 -00.2	S	22 33.7 +00.2	4 54.1 +01.3	S	23 43.0 -00.5	11 24.4 -38.9	S	26 04.2 -02.6				
16	62 12.5 -00.3	S	22 33.9 +00.3	19 55.4 +01.3	S	23 42.5 -00.5	25 45.5 -38.7	S	26 01.6 -02.7				
17	77 12.2 -00.3	S	22 34.2 +00.3	34 56.7 +01.3	S	23 42.0 -00.5	40 06.8 -38.7	S	25 58.9 -03.0				
18	92 11.9 -00.2	S	22 34.5 +00.3	49 58.0 +01.3	S	23 41.5 -00.5	54 28.1 -38.6	S	25 55.9 -03.2				
19	107 11.7 -00.3	S	22 34.8 +00.3	64 59.3 +01.4	S	23 41.0 -00.5	68 49.5 -38.5	S	25 52.7 -03.3				
20	122 11.4 -00.3	S	22 35.1 +00.3	80 00.7 +01.3	S	23 40.5 -00.5	83 11.0 -38.5	S	25 49.4 -03.6				
21	137 11.1 -00.3	S	22 35.4 +00.3	95 02.0 +01.3	S	23 40.0 -00.5	97 32.5 -38.3	S	25 45.8 -03.7				
22	152 10.8 -00.2	S	22 35.7 +00.2	110 03.3 +01.4	S	23 39.5 -00.5	111 54.2 -38.3	S	25 42.1 -03.9				
23	167 10.6 -00.3	S	22 35.9 +00.3	125 04.7 +01.3	S	23 39.0 -00.5	126 15.9 -38.1	S	25 38.2 -04.1				
	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 00'4 00'4 00'4 00'4 00'4 00'4				SD 16'6 16'6 16'6 16'5 16'5 16'5					
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'4 00'4 00'4 00'4 00'4 00'4				HP 61'0 60'9 60'8 60'7 60'5 60'4					
	SHA 107° 107° 107° 107° 106° 106°			SHA 065° 064° 064° 064° 064° 064°				SHA 080° 077° 074° 071° 069° 066°					
	Greenwich Culmination Time: 11:51			Greenwich Culmination Time: 14:40				Greenwich Culmination Time: 14:12					

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	202 28.7 +00.7	S	18 50.4 +00.5	106 18.8 +02.1	S	13 48.1 -00.2	122 57.5 +02.3	S	18 41.6 -00.1				
01	217 29.4 +00.7	S	18 50.9 +00.4	121 20.9 +02.1	S	13 47.9 -00.1	137 59.8 +02.2	S	18 41.5 +00.0				
02	232 30.1 +00.7	S	18 51.3 +00.5	136 23.0 +02.2	S	13 47.8 -00.1	153 02.0 +02.3	S	18 41.5 -00.1				
03	247 30.8 +00.7	S	18 51.8 +00.4	151 25.2 +02.1	S	13 47.7 -00.2	168 04.3 +02.2	S	18 41.4 +00.0				
04	262 31.5 +00.7	S	18 52.2 +00.5	166 27.3 +02.1	S	13 47.5 -00.1	183 06.5 +02.3	S	18 41.4 -00.1				
05	277 32.2 +00.7	S	18 52.7 +00.4	181 29.4 +02.1	S	13 47.4 -00.1	198 08.8 +02.2	S	18 41.3 +00.0				
06	292 32.9 +00.7	S	18 53.1 +00.4	196 31.5 +02.1	S	13 47.3 -00.1	213 11.0 +02.3	S	18 41.3 -00.1				
07	307 33.6 +00.6	S	18 53.5 +00.5	211 33.6 +02.1	S	13 47.2 -00.2	228 13.3 +02.2	S	18 41.2 -00.1				
08	322 34.2 +00.7	S	18 54.0 +00.4	226 35.7 +02.1	S	13 47.0 -00.1	243 15.5 +02.3	S	18 41.1 +00.0				
09	337 34.9 +00.7	S	18 54.4 +00.5	241 37.8 +02.2	S	13 46.9 -00.1	258 17.8 +02.2	S	18 41.1 -00.1				
10	352 35.6 +00.7	S	18 54.9 +00.4	256 40.0 +02.1	S	13 46.8 -00.1	273 20.0 +02.3	S	18 41.0 +00.0				
11	7 36.3 +00.7	S	18 55.3 +00.4	271 42.1 +02.1	S	13 46.7 -00.2	288 22.3 +02.2	S	18 41.0 -00.1				
12	22 37.0 +00.7	S	18 55.7 +00.5	286 44.2 +02.1	S	13 46.5 -00.1	303 24.5 +02.3	S	18 40.9 +00.0				
13	37 37.7 +00.7	S	18 56.2 +00.4	301 46.3 +02.1	S	13 46.4 -00.1	318 26.8 +02.2	S	18 40.9 -00.1				
14	52 38.4 +00.7	S	18 56.6 +00.5	316 48.4 +02.1	S	13 46.3 -00.2	333 29.0 +02.3	S	18 40.8 -00.1				
15	67 39.1 +00.7	S	18 57.1 +00.4	331 50.5 +02.1	S	13 46.1 -00.1	348 31.3 +02.2	S	18 40.7 +00.0				
16	82 39.8 +00.6	S	18 57.5 +00.5	346 52.6 +02.1	S	13 46.0 -00.1	3 33.5 +02.3	S	18 40.7 -00.1				
17	97 40.4 +00.7	S	18 58.0 +00.4	1 54.7 +02.1	S	13 45.9 -00.2	18 35.8 +02.2	S	18 40.6 +00.0				
18	112 41.1 +00.7	S	18 58.4 +00.4	16 56.8 +02.2	S	13 45.7 -00.1	33 38.0 +02.3	S	18 40.6 -00.1				
19	127 41.8 +00.7	S	18 58.8 +00.5	31 59.0 +02.1	S	13 45.6 -00.1	48 40.3 +02.2	S	18 40.5 +00.0				
20	142 42.5 +00.7	S	18 59.3 +00.4	47 01.1 +02.1	S	13 45.5 -00.1	63 42.5 +02.2	S	18 40.5 -00.1				
21	157 43.2 +00.7	S	18 59.7 +00.4	62 03.2 +02.1	S	13 45.4 -00.2	78 44.7 +02.3	S	18 40.4 +00.0				
22	172 43.9 +00.7	S	19 00.1 +00.5	77 05.3 +02.1	S	13 45.2 -00.1	93 47.0 +02.2	S	18 40.4 -00.1				
23	187 44.6 +00.7	S	19 00.6 +00.4	92 07.4 +02.1	S	13 45.1 -00.1	108 49.2 +02.3	S	18 40.3 -00.1				
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22				UT 02 06 10 14 18 22					
	SD 00'0 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 127° 127° 127° 127° 127° 127°			SHA 031° 031° 031° 031° 031° 031°				SHA 048° 048° 048° 048° 048° 048°					
	Greenwich Culmination Time: 10:29			Greenwich Culmination Time: 16:52				Greenwich Culmination Time: 15:45					

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!

Sun					Venus					Moon					A: 13%					
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT							
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "								
00	182	10.3	-00.3	S 22 36.2	+00.3	140	06.0	+01.4	S 23 38.5	-00.5	140	37.8	-38.1	S 25 34.1	-04.3	00				
01	197	10.0	-00.2	S 22 36.5	+00.3	155	07.4	+01.3	S 23 38.0	-00.5	154	59.7	-38.0	S 25 29.8	-04.4	01				
02	212	09.8	-00.3	S 22 36.8	+00.3	170	08.7	+01.4	S 23 37.5	-00.5	169	21.7	-37.9	S 25 25.4	-04.7	02				
03	227	09.5	-00.3	S 22 37.1	+00.2	185	10.1	+01.3	S 23 37.0	-00.5	183	43.8	-37.8	S 25 20.7	-04.8	03				
04	242	09.2	-00.2	S 22 37.3	+00.3	200	11.4	+01.4	S 23 36.5	-00.5	198	06.0	-37.7	S 25 15.9	-05.0	04				
05	257	09.0	-00.3	S 22 37.6	+00.3	215	12.8	+01.3	S 23 36.0	-00.5	212	28.3	-37.6	S 25 10.9	-05.1	05				
06	272	08.7	-00.3	S 22 37.9	+00.3	230	14.1	+01.4	S 23 35.5	-00.5	226	50.7	-37.4	S 25 05.8	-05.4	06				
07	287	08.4	-00.3	S 22 38.2	+00.2	245	15.5	+01.4	S 23 35.0	-00.6	241	13.3	-37.4	S 25 00.4	-05.5	07				
08	302	08.1	-00.2	S 22 38.4	+00.3	260	16.9	+01.4	S 23 34.4	-00.5	255	35.9	-37.3	S 24 54.9	-05.6	08				
09	317	07.9	-00.3	S 22 38.7	+00.3	275	18.3	+01.3	S 23 33.9	-00.5	269	58.6	-37.1	S 24 49.3	-05.9	09				
10	332	07.6	-00.3	S 22 39.0	+00.3	290	19.6	+01.4	S 23 33.4	-00.5	284	21.5	-37.1	S 24 43.4	-06.0	10				
11	347	07.3	-00.2	S 22 39.3	+00.2	305	21.0	+01.4	S 23 32.9	-00.5	298	44.4	-36.9	S 24 37.4	-06.2	11				
12	2	07.1	-00.3	S 22 39.5	+00.3	320	22.4	+01.4	S 23 32.4	-00.5	313	07.5	-36.8	S 24 31.2	-06.3	12				
13	17	06.8	-00.3	S 22 39.8	+00.3	335	23.8	+01.4	S 23 31.9	-00.5	327	30.7	-36.7	S 24 24.9	-06.5	13				
14	32	06.5	-00.3	S 22 40.1	+00.3	350	25.2	+01.4	S 23 31.4	-00.5	341	54.0	-36.6	S 24 18.4	-06.7	14				
15	47	06.2	-00.2	S 22 40.4	+00.2	5	26.6	+01.4	S 23 30.9	-00.5	356	17.4	-36.5	S 24 11.7	-06.8	15				
16	62	06.0	-00.3	S 22 40.6	+00.3	20	28.0	+01.4	S 23 30.4	-00.5	10	40.9	-36.3	S 24 04.9	-06.9	16				
17	77	05.7	-00.3	S 22 40.9	+00.3	35	29.4	+01.4	S 23 29.9	-00.5	25	04.6	-36.3	S 23 58.0	-07.1	17				
18	92	05.4	-00.2	S 22 41.2	+00.2	50	30.8	+01.4	S 23 29.4	-00.5	39	28.3	-36.1	S 23 50.9	-07.3	18				
19	107	05.2	-00.3	S 22 41.4	+00.3	65	32.2	+01.4	S 23 28.9	-00.5	53	52.2	-36.0	S 23 43.6	-07.4	19				
20	122	04.9	-00.3	S 22 41.7	+00.3	80	33.6	+01.4	S 23 28.4	-00.5	68	16.2	-35.8	S 23 36.2	-07.6	20				
21	137	04.6	-00.3	S 22 42.0	+00.2	95	35.0	+01.4	S 23 27.9	-00.5	82	40.4	-35.7	S 23 28.6	-07.7	21				
22	152	04.3	-00.2	S 22 42.2	+00.3	110	36.4	+01.5	S 23 27.4	-00.5	97	04.7	-35.7	S 23 20.9	-07.9	22				
23	167	04.1	-00.3	S 22 42.5	+00.3	125	37.9	+01.4	S 23 26.9	-00.6	111	29.0	-35.4	S 23 13.0	-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	00'4	00'4	00'4	00'4	00'4	00'4	SD	16'4	16'4	16'4	16'3	16'3	16'2
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'4	00'4	00'4	00'4	00'4	00'4	HP	60'3	60'2	60'0	59'9	59'7	59'6
SHA	106°	106°	106°	106°	105°	105°	SHA	064°	064°	064°	064°	064°	064°	SHA	063°	061°	058°	055°	053°	050°
Greenwich Culmination Time: 11:51							Greenwich Culmination Time: 14:38							Greenwich Culmination Time: 15:15						

Mars					Jupiter					Saturn										
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT							
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "								
00	202	45.3	+00.6	S 19 01.0	+00.5	107	09.5	+02.1	S 13 45.0	-00.2	123	51.5	+02.2	S 18 40.2	+00.0	00				
01	217	45.9	+00.7	S 19 01.5	+00.4	122	11.6	+02.1	S 13 44.8	-00.1	138	53.7	+02.3	S 18 40.2	-00.1	01				
02	232	46.6	+00.7	S 19 01.9	+00.4	137	13.7	+02.1	S 13 44.7	-00.1	153	56.0	+02.2	S 18 40.1	+00.0	02				
03	247	47.3	+00.7	S 19 02.3	+00.5	152	15.8	+02.1	S 13 44.6	-00.1	168	58.2	+02.3	S 18 40.1	-00.1	03				
04	262	48.0	+00.7	S 19 02.8	+00.4	167	17.9	+02.2	S 13 44.5	-00.2	184	00.5	+02.2	S 18 40.0	+00.0	04				
05	277	48.7	+00.7	S 19 03.2	+00.4	182	20.1	+02.1	S 13 44.3	-00.1	199	02.7	+02.3	S 18 40.0	-00.1	05				
06	292	49.4	+00.7	S 19 03.6	+00.5	197	22.2	+02.1	S 13 44.2	-00.1	214	05.0	+02.2	S 18 39.9	-00.1	06				
07	307	50.1	+00.6	S 19 04.1	+00.4	212	24.3	+02.1	S 13 44.1	-00.2	229	07.2	+02.3	S 18 39.8	+00.0	07				
08	322	50.7	+00.7	S 19 04.5	+00.4	227	26.4	+02.1	S 13 43.9	-00.1	244	09.5	+02.2	S 18 39.8	-00.1	08				
09	337	51.4	+00.7	S 19 04.9	+00.5	242	28.5	+02.1	S 13 43.8	-00.1	259	11.7	+02.2	S 18 39.7	+00.0	09				
10	352	52.1	+00.7	S 19 05.4	+00.4	257	30.6	+02.1	S 13 43.7	-00.2	274	13.9	+02.3	S 18 39.7	-00.1	10				
11	7	52.8	+00.7	S 19 05.8	+00.5	272	32.7	+02.1	S 13 43.5	-00.1	289	16.2	+02.2	S 18 39.6	+00.0	11				
12	22	53.5	+00.7	S 19 06.3	+00.4	287	34.8	+02.1	S 13 43.4	-00.1	304	18.4	+02.3	S 18 39.6	-00.1	12				
13	37	54.2	+00.6	S 19 06.7	+00.4	302	36.9	+02.1	S 13 43.3	-00.2	319	20.7	+02.2	S 18 39.5	-00.1	13				
14	52	54.8	+00.7	S 19 07.1	+00.5	317	39.0	+02.1	S 13 43.1	-00.1	334	22.9	+02.3	S 18 39.4	+00.0	14				
15	67	55.5	+00.7	S 19 07.6	+00.4	332	41.1	+02.1	S 13 43.0	-00.1	349	25.2	+02.2	S 18 39.4	-00.1	15				
16	82	56.2	+00.7	S 19 08.0	+00.4	347	43.2	+02.1	S 13 42.9	-00.1	4	27.4	+02.3	S 18 39.3	+00.0	16				
17	97	56.9	+00.7	S 19 08.4	+00.5	2	45.3	+02.1	S 13 42.8	-00.2	19	29.7	+02.2	S 18 39.3	-00.1	17				
18	112	57.6	+00.7	S 19 08.9	+00.4	17	47.4	+02.1	S 13 42.6	-00.1	34	31.9	+02.3	S 18 39.2	+00.0	18				
19	127	58.3	+00.6	S 19 09.3	+00.4	32	49.5	+02.1	S 13 42.5	-00.1	49	34.2	+02.2	S 18 39.2	-00.1	19				
20	142	58.9	+00.7	S 19 09.7	+00.5	47	51.6	+02.2	S 13 42.4	-00.2	64	36.4	+02.2	S 18 39.1	-00.1	20				
21	157	59.6	+00.7	S 19 10.2	+00.4	62	53.8	+02.1	S 13 42.2	-00.1	79	38.6	+02.3	S 18 39.0	+00.0	21				
22	173	00.3	+00.7	S 19 10.6	+00.4	77	55.9	+02.1	S 13 42.1	-00.1	94	40.9	+02.2	S 18 39.0	-00.1	22				
23	188	01.0	+00.7	S 19 11.0	+00.4	92	58.0	+02.1	S 13 42.0	-00.2	109	43.1	+02.3	S 18 38.9	+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	00'0	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	127°	127°	126°	126°	126°	126°	SHA	031°	031°	031°	031°	031°	SHA	048°	048°	048°	048°	048°	048°	
Greenwich Culmination Time: 10:28							Greenwich Culmination Time: 16:49							Greenwich Culmination Time: 15:42						

Sun					Venus					Moon					A: 17%
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT		
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "			
00	182 03.8 -00.3	S	22 42.8 +00.2		140 39.3 +01.4	S	23 26.3 -00.5		125 53.6 -35.4	S	23 05.0 -08.1		00		
01	197 03.5 -00.3	S	22 43.0 +00.3		155 40.7 +01.5	S	23 25.8 -00.5		140 18.2 -35.2	S	22 56.9 -08.3		01		
02	212 03.2 -00.2	S	22 43.3 +00.2		170 42.2 +01.4	S	23 25.3 -00.5		154 43.0 -35.1	S	22 48.6 -08.4		02		
03	227 03.0 -00.3	S	22 43.5 +00.3		185 43.6 +01.4	S	23 24.8 -00.5		169 07.9 -35.0	S	22 40.2 -08.5		03		
04	242 02.7 -00.3	S	22 43.8 +00.3		200 45.0 +01.5	S	23 24.3 -00.5		183 32.9 -34.9	S	22 31.7 -08.7		04		
05	257 02.4 -00.3	S	22 44.1 +00.2		215 46.5 +01.4	S	23 23.8 -00.5		197 58.0 -34.7	S	22 23.0 -08.8		05		
06	272 02.1 -00.2	S	22 44.3 +00.3		230 47.9 +01.5	S	23 23.3 -00.5		212 23.3 -34.6	S	22 14.2 -09.0		06		
07	287 01.9 -00.3	S	22 44.6 +00.2		245 49.4 +01.4	S	23 22.8 -00.5		226 48.7 -34.4	S	22 05.2 -09.0		07		
08	302 01.6 -00.3	S	22 44.8 +00.3		260 50.8 +01.5	S	23 22.3 -00.5		241 14.3 -34.3	S	21 56.2 -09.2		08		
09	317 01.3 -00.3	S	22 45.1 +00.3		275 52.3 +01.5	S	23 21.8 -00.5		255 40.0 -34.2	S	21 47.0 -09.3		09		
10	332 01.0 -00.2	S	22 45.4 +00.2		290 53.8 +01.4	S	23 21.3 -00.6		270 05.8 -34.1	S	21 37.7 -09.5		10		
11	347 00.8 -00.3	S	22 45.6 +00.3		305 55.2 +01.5	S	23 20.7 -00.5		284 31.7 -34.0	S	21 28.2 -09.5		11		
12	2 00.5 -00.3	S	22 45.9 +00.2		320 56.7 +01.5	S	23 20.2 -00.5		298 57.7 -33.8	S	21 18.7 -09.7		12		
13	17 00.2 -00.3	S	22 46.1 +00.3		335 58.2 +01.4	S	23 19.7 -00.5		313 23.9 -33.6	S	21 09.0 -09.8		13		
14	31 59.9 -00.2	S	22 46.4 +00.2		350 59.6 +01.5	S	23 19.2 -00.5		327 50.3 -33.6	S	20 59.2 -09.8		14		
15	46 59.7 -00.3	S	22 46.6 +00.3		6 01.1 +01.5	S	23 18.7 -00.5		342 16.7 -33.4	S	20 49.4 -10.0		15		
16	61 59.4 -00.3	S	22 46.9 +00.2		21 02.6 +01.5	S	23 18.2 -00.5		356 43.3 -33.3	S	20 39.4 -10.2		16		
17	76 59.1 -00.3	S	22 47.1 +00.3		36 04.1 +01.5	S	23 17.7 -00.5		11 10.0 -33.2	S	20 29.2 -10.2		17		
18	91 58.8 -00.3	S	22 47.4 +00.2		51 05.6 +01.5	S	23 17.2 -00.6		25 36.8 -33.0	S	20 19.0 -10.3		18		
19	106 58.5 -00.2	S	22 47.6 +00.3		66 07.1 +01.5	S	23 16.6 -00.5		40 03.8 -32.9	S	20 08.7 -10.4		19		
20	121 58.3 -00.3	S	22 47.9 +00.2		81 08.6 +01.5	S	23 16.1 -00.5		54 30.9 -32.8	S	19 58.3 -10.6		20		
21	136 58.0 -00.3	S	22 48.1 +00.3		96 10.1 +01.5	S	23 15.6 -00.5		68 58.1 -32.6	S	19 47.7 -10.6		21		
22	151 57.7 -00.3	S	22 48.4 +00.2		111 11.6 +01.5	S	23 15.1 -00.5		83 25.5 -32.5	S	19 37.1 -10.7		22		
23	166 57.4 -00.2	S	22 48.6 +00.2		126 13.1 +01.5	S	23 14.6 -00.5		97 53.0 -32.4	S	19 26.4 -10.9		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 00'4 00'4 00'4 00'4 00'4 00'4					SD 16'2 16'2 16'1 16'1 16'0 16'0					
HP 00'1 00'1 00'1 00'1 00'1 00'1					HP 00'4 00'4 00'4 00'4 00'4 00'4					HP 59'4 59'3 59'1 59'0 58'8 58'7					
SHA 105° 105° 105° 104° 104° 104°					SHA 064° 064° 064° 063° 063° 063°					SHA 048° 045° 043° 040° 038° 036°					
Greenwich Culmination Time: 11:51					Greenwich Culmination Time: 14:35					Greenwich Culmination Time: 16:13					

Mars					Jupiter					Saturn					
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT		
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "			
00	203 01.7 +00.6	S	19 11.4 +00.5		108 00.1 +02.1	S	13 41.8 -00.1		124 45.4 +02.2	S	18 38.9 -00.1		00		
01	218 02.3 +00.7	S	19 11.9 +00.4		123 02.2 +02.1	S	13 41.7 -00.1		139 47.6 +02.3	S	18 38.8 +00.0		01		
02	233 03.0 +00.7	S	19 12.3 +00.4		138 04.3 +02.1	S	13 41.6 -00.2		154 49.9 +02.2	S	18 38.8 -00.1		02		
03	248 03.7 +00.7	S	19 12.7 +00.5		153 06.4 +02.1	S	13 41.4 -00.1		169 52.1 +02.3	S	18 38.7 -00.1		03		
04	263 04.4 +00.7	S	19 13.2 +00.4		168 08.5 +02.1	S	13 41.3 -00.1		184 54.4 +02.2	S	18 38.6 +00.0		04		
05	278 05.1 +00.6	S	19 13.6 +00.4		183 10.6 +02.1	S	13 41.2 -00.2		199 56.6 +02.2	S	18 38.6 -00.1		05		
06	293 05.7 +00.7	S	19 14.0 +00.5		198 12.7 +02.1	S	13 41.0 -00.1		214 58.8 +02.3	S	18 38.5 +00.0		06		
07	308 06.4 +00.7	S	19 14.5 +00.4		213 14.8 +02.1	S	13 40.9 -00.1		230 01.1 +02.2	S	18 38.5 -00.1		07		
08	323 07.1 +00.7	S	19 14.9 +00.4		228 16.9 +02.1	S	13 40.8 -00.2		245 03.3 +02.3	S	18 38.4 +00.0		08		
09	338 07.8 +00.7	S	19 15.3 +00.4		243 19.0 +02.1	S	13 40.6 -00.1		260 05.6 +02.2	S	18 38.4 -00.1		09		
10	353 08.5 +00.6	S	19 15.7 +00.5		258 21.1 +02.1	S	13 40.5 -00.1		275 07.8 +02.3	S	18 38.3 -00.1		10		
11	8 09.1 +00.7	S	19 16.2 +00.4		273 23.2 +02.1	S	13 40.4 -00.2		290 10.1 +02.2	S	18 38.2 +00.0		11		
12	23 09.8 +00.7	S	19 16.6 +00.4		288 25.3 +02.1	S	13 40.2 -00.1		305 12.3 +02.2	S	18 38.2 -00.1		12		
13	38 10.5 +00.7	S	19 17.0 +00.5		303 27.4 +02.1	S	13 40.1 -00.1		320 14.5 +02.3	S	18 38.1 +00.0		13		
14	53 11.2 +00.7	S	19 17.5 +00.4		318 29.5 +02.1	S	13 40.0 -00.2		335 16.8 +02.2	S	18 38.1 -00.1		14		
15	68 11.9 +00.6	S	19 17.9 +00.4		333 31.6 +02.1	S	13 39.8 -00.1		350 19.0 +02.3	S	18 38.0 -00.1		15		
16	83 12.5 +00.7	S	19 18.3 +00.4		348 33.7 +02.1	S	13 39.7 -00.1		5 21.3 +02.2	S	18 37.9 +00.0		16		
17	98 13.2 +00.7	S	19 18.7 +00.5		3 35.8 +02.1	S	13 39.6 -00.2		20 23.5 +02.2	S	18 37.9 -00.1		17		
18	113 13.9 +00.7	S	19 19.2 +00.4		18 37.9 +02.1	S	13 39.4 -00.1		35 25.7 +02.3	S	18 37.8 +00.0		18		
19	128 14.6 +00.6	S	19 19.6 +00.4		33 40.0 +02.1	S	13 39.3 -00.1		50 28.0 +02.2	S	18 37.8 -00.1		19		
20	143 15.2 +00.7	S	19 20.0 +00.4		48 42.1 +02.1	S	13 39.2 -00.2		65 30.2 +02.3	S	18 37.7 +00.0		20		
21	158 15.9 +00.7	S	19 20.4 +00.5		63 44.2 +02.1	S	13 39.0 -00.1		80 32.5 +02.2	S	18 37.7 -00.1		21		
22	173 16.6 +00.7	S	19 20.9 +00.4		78 46.3 +02.1	S	13 38.9 -00.1		95 34.7 +02.3	S	18 37.6 -00.1		22		
23	188 17.3 +00.6	S	19 21.3 +00.4		93 48.4 +02.1	S	13 38.8 -00.2		110 37.0 +02.2	S	18 37.5 +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 00'0 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 126° 126° 126° 126° 126° 125°					SHA 031° 031° 031° 031° 031° 031°					SHA 048° 048° 048° 048° 048° 048°					
Greenwich Culmination Time: 10:27					Greenwich Culmination Time: 16:45					Greenwich Culmination Time: 15:38					

Sun					Venus					Moon					A: 21%
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT		
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "			
00	181	57.2 -00.3	S 22 48.8 +00.3		141	14.6 +01.5	S 23 14.1 -00.5		112	20.6 -32.3	S 19 15.5 -10.9		00		
01	196	56.9 -00.3	S 22 49.1 +00.2		156	16.1 +01.6	S 23 13.6 -00.5		126	48.3 -32.1	S 19 04.6 -11.0		01		
02	211	56.6 -00.3	S 22 49.3 +00.3		171	17.7 +01.5	S 23 13.1 -00.6		141	16.2 -32.1	S 18 53.6 -11.1		02		
03	226	56.3 -00.3	S 22 49.6 +00.2		186	19.2 +01.5	S 23 12.5 -00.5		155	44.1 -31.8	S 18 42.5 -11.2		03		
04	241	56.0 -00.2	S 22 49.8 +00.3		201	20.7 +01.5	S 23 12.0 -00.5		170	12.3 -31.8	S 18 31.3 -11.3		04		
05	256	55.8 -00.3	S 22 50.1 +00.2		216	22.2 +01.6	S 23 11.5 -00.5		184	40.5 -31.7	S 18 20.0 -11.3		05		
06	271	55.5 -00.3	S 22 50.3 +00.2		231	23.8 +01.5	S 23 11.0 -00.5		199	08.8 -31.5	S 18 08.7 -11.5		06		
07	286	55.2 -00.3	S 22 50.5 +00.3		246	25.3 +01.6	S 23 10.5 -00.5		213	37.3 -31.4	S 17 57.2 -11.5		07		
08	301	54.9 -00.3	S 22 50.8 +00.2		261	26.9 +01.5	S 23 10.0 -00.5		228	05.9 -31.3	S 17 45.7 -11.6		08		
09	316	54.6 -00.2	S 22 51.0 +00.3		276	28.4 +01.6	S 23 09.5 -00.6		242	34.6 -31.1	S 17 34.1 -11.7		09		
10	331	54.4 -00.3	S 22 51.3 +00.2		291	30.0 +01.5	S 23 08.9 -00.5		257	03.5 -31.1	S 17 22.4 -11.8		10		
11	346	54.1 -00.3	S 22 51.5 +00.2		306	31.5 +01.6	S 23 08.4 -00.5		271	32.4 -30.9	S 17 10.6 -11.8		11		
12	1	53.8 -00.3	S 22 51.7 +00.3		321	33.1 +01.5	S 23 07.9 -00.5		286	01.5 -30.8	S 16 58.8 -11.9		12		
13	16	53.5 -00.3	S 22 52.0 +00.2		336	34.6 +01.6	S 23 07.4 -00.5		300	30.7 -30.7	S 16 46.9 -12.0		13		
14	31	53.2 -00.2	S 22 52.2 +00.2		351	36.2 +01.6	S 23 06.9 -00.5		315	00.0 -30.6	S 16 34.9 -12.1		14		
15	46	53.0 -00.3	S 22 52.4 +00.3		6	37.8 +01.6	S 23 06.4 -00.6		329	29.4 -30.4	S 16 22.8 -12.1		15		
16	61	52.7 -00.3	S 22 52.7 +00.2		21	39.4 +01.5	S 23 05.8 -00.5		343	59.0 -30.4	S 16 10.7 -12.2		16		
17	76	52.4 -00.3	S 22 52.9 +00.2		36	40.9 +01.6	S 23 05.3 -00.5		358	28.6 -30.2	S 15 58.5 -12.2		17		
18	91	52.1 -00.3	S 22 53.1 +00.3		51	42.5 +01.6	S 23 04.8 -00.5		12	58.4 -30.1	S 15 46.3 -12.4		18		
19	106	51.8 -00.3	S 22 53.4 +00.2		66	44.1 +01.6	S 23 04.3 -00.5		27	28.3 -30.0	S 15 33.9 -12.3		19		
20	121	51.5 -00.2	S 22 53.6 +00.2		81	45.7 +01.6	S 23 03.8 -00.5		41	58.3 -29.9	S 15 21.6 -12.5		20		
21	136	51.3 -00.3	S 22 53.8 +00.2		96	47.3 +01.6	S 23 03.3 -00.6		56	28.4 -29.8	S 15 09.1 -12.5		21		
22	151	51.0 -00.3	S 22 54.0 +00.3		111	48.9 +01.6	S 23 02.7 -00.5		70	58.6 -29.7	S 14 56.6 -12.5		22		
23	166	50.7 -00.3	S 22 54.3 +00.2		126	50.5 +01.6	S 23 02.2 -00.5		85	28.9 -29.6	S 14 44.1 -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 00'4 00'4 00'4 00'4 00'4 00'4					SD 15'9 15'9 15'9 15'8 15'8 15'7					
HP 00'1 00'1 00'1 00'1 00'1 00'1					HP 00'4 00'4 00'4 00'4 00'4 00'4					HP 58'5 58'4 58'2 58'0 57'9 57'7					
SHA 104° 104° 104° 103° 103° 103°					SHA 063° 063° 063° 063° 063° 063°					SHA 033° 031° 029° 026° 024° 022°					
Greenwich Culmination Time: 11:52					Greenwich Culmination Time: 14:33					Greenwich Culmination Time: 17:06					

Mars					Jupiter					Saturn					
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT		
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "			
00	203	17.9 +00.7	S 19 21.7 +00.4		108	50.5 +02.1	S 13 38.6 -00.1		125	39.2 +02.2	S 18 37.5 -00.1		00		
01	218	18.6 +00.7	S 19 22.1 +00.5		123	52.6 +02.1	S 13 38.5 -00.1		140	41.4 +02.3	S 18 37.4 +00.0		01		
02	233	19.3 +00.7	S 19 22.6 +00.4		138	54.7 +02.1	S 13 38.4 -00.2		155	43.7 +02.2	S 18 37.4 -00.1		02		
03	248	20.0 +00.6	S 19 23.0 +00.4		153	56.8 +02.1	S 13 38.2 -00.1		170	45.9 +02.3	S 18 37.3 -00.1		03		
04	263	20.6 +00.7	S 19 23.4 +00.4		168	58.9 +02.1	S 13 38.1 -00.1		185	48.2 +02.2	S 18 37.2 +00.0		04		
05	278	21.3 +00.7	S 19 23.8 +00.5		184	01.0 +02.1	S 13 38.0 -00.2		200	50.4 +02.2	S 18 37.2 -00.1		05		
06	293	22.0 +00.7	S 19 24.3 +00.4		199	03.1 +02.1	S 13 37.8 -00.1		215	52.6 +02.3	S 18 37.1 +00.0		06		
07	308	22.7 +00.6	S 19 24.7 +00.4		214	05.2 +02.1	S 13 37.7 -00.1		230	54.9 +02.2	S 18 37.1 -00.1		07		
08	323	23.3 +00.7	S 19 25.1 +00.4		229	07.3 +02.1	S 13 37.6 -00.2		245	57.1 +02.3	S 18 37.0 +00.0		08		
09	338	24.0 +00.7	S 19 25.5 +00.5		244	09.4 +02.1	S 13 37.4 -00.1		260	59.4 +02.2	S 18 37.0 -00.1		09		
10	353	24.7 +00.7	S 19 26.0 +00.4		259	11.5 +02.1	S 13 37.3 -00.1		276	01.6 +02.2	S 18 36.9 -00.1		10		
11	8	25.4 +00.6	S 19 26.4 +00.4		274	13.6 +02.1	S 13 37.2 -00.2		291	03.8 +02.3	S 18 36.8 +00.0		11		
12	23	26.0 +00.7	S 19 26.8 +00.4		289	15.7 +02.1	S 13 37.0 -00.1		306	06.1 +02.2	S 18 36.8 -00.1		12		
13	38	26.7 +00.7	S 19 27.2 +00.4		304	17.8 +02.1	S 13 36.9 -00.1		321	08.3 +02.3	S 18 36.7 +00.0		13		
14	53	27.4 +00.7	S 19 27.6 +00.5		319	19.9 +02.1	S 13 36.8 -00.2		336	10.6 +02.2	S 18 36.7 -00.1		14		
15	68	28.1 +00.6	S 19 28.1 +00.4		334	22.0 +02.0	S 13 36.6 -00.1		351	12.8 +02.2	S 18 36.6 -00.1		15		
16	83	28.7 +00.7	S 19 28.5 +00.4		349	24.0 +02.1	S 13 36.5 -00.1		6	15.0 +02.3	S 18 36.5 +00.0		16		
17	98	29.4 +00.7	S 19 28.9 +00.4		4	26.1 +02.1	S 13 36.4 -00.2		21	17.3 +02.2	S 18 36.5 -00.1		17		
18	113	30.1 +00.6	S 19 29.3 +00.4		19	28.2 +02.1	S 13 36.2 -00.1		36	19.5 +02.3	S 18 36.4 +00.0		18		
19	128	30.7 +00.7	S 19 29.7 +00.5		34	30.3 +02.1	S 13 36.1 -00.2		51	21.8 +02.2	S 18 36.4 -00.1		19		
20	143	31.4 +00.7	S 19 30.2 +00.4		49	32.4 +02.1	S 13 35.9 -00.1		66	24.0 +02.2	S 18 36.3 +00.0		20		
21	158	32.1 +00.7	S 19 30.6 +00.4		64	34.5 +02.1	S 13 35.8 -00.1		81	26.2 +02.3	S 18 36.3 -00.1		21		
22	173	32.8 +00.6	S 19 31.0 +00.4		79	36.6 +02.1	S 13 35.7 -00.2		96	28.5 +02.2	S 18 36.2 -00.1		22		
23	188	33.4 +00.7	S 19 31.4 +00.4		94	38.7 +02.1	S 13 35.5 -00.1		111	30.7 +02.3	S 18 36.1 +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 00'0 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 125° 125° 125° 125° 125° 125°					SHA 031° 031° 031° 031° 031° 031°					SHA 048° 048° 048° 048° 048° 048°					
Greenwich Culmination Time: 10:26					Greenwich Culmination Time: 16:42					Greenwich Culmination Time: 15:35					

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UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	181 50.4 -00.3	S	22 54.5 +00.2	141 52.1 +01.6	S	23 01.7 -00.5	99 59.3 -29.5	S	14 31.4 -12.6	00			
01	196 50.1 -00.3	S	22 54.7 +00.2	156 53.7 +01.6	S	23 01.2 -00.5	114 29.8 -29.3	S	14 18.8 -12.8	01			
02	211 49.8 -00.2	S	22 54.9 +00.3	171 55.3 +01.6	S	23 00.7 -00.6	129 00.5 -29.3	S	14 06.0 -12.7	02			
03	226 49.6 -00.3	S	22 55.2 +00.2	186 56.9 +01.6	S	23 00.1 -00.5	143 31.2 -29.2	S	13 53.3 -12.9	03			
04	241 49.3 -00.3	S	22 55.4 +00.2	201 58.5 +01.7	S	22 59.6 -00.5	158 02.0 -29.0	S	13 40.4 -12.9	04			
05	256 49.0 -00.3	S	22 55.6 +00.2	217 00.2 +01.6	S	22 59.1 -00.5	172 33.0 -29.0	S	13 27.5 -12.9	05			
06	271 48.7 -00.3	S	22 55.8 +00.2	232 01.8 +01.6	S	22 58.6 -00.5	187 04.0 -28.9	S	13 14.6 -13.0	06			
07	286 48.4 -00.3	S	22 56.0 +00.3	247 03.4 +01.6	S	22 58.1 -00.5	201 35.1 -28.8	S	13 01.6 -13.0	07			
08	301 48.1 -00.2	S	22 56.3 +00.2	262 05.0 +01.7	S	22 57.6 -00.6	216 06.3 -28.6	S	12 48.6 -13.0	08			
09	316 47.9 -00.3	S	22 56.5 +00.2	277 06.7 +01.6	S	22 57.0 -00.5	230 37.7 -28.6	S	12 35.6 -13.1	09			
10	331 47.6 -00.3	S	22 56.7 +00.2	292 08.3 +01.7	S	22 56.5 -00.5	245 09.1 -28.5	S	12 22.5 -13.2	10			
11	346 47.3 -00.3	S	22 56.9 +00.2	307 10.0 +01.6	S	22 56.0 -00.5	259 40.6 -28.4	S	12 09.3 -13.2	11			
12	1 47.0 -00.3	S	22 57.1 +00.3	322 11.6 +01.7	S	22 55.5 -00.5	274 12.2 -28.3	S	11 56.1 -13.2	12			
13	16 46.7 -00.3	S	22 57.4 +00.2	337 13.3 +01.6	S	22 55.0 -00.6	288 43.9 -28.2	S	11 42.9 -13.3	13			
14	31 46.4 -00.2	S	22 57.6 +00.2	352 14.9 +01.7	S	22 54.4 -00.5	303 15.7 -28.2	S	11 29.6 -13.3	14			
15	46 46.2 -00.3	S	22 57.8 +00.2	7 16.6 +01.7	S	22 53.9 -00.5	317 47.5 -28.0	S	11 16.3 -13.3	15			
16	61 45.9 -00.3	S	22 58.0 +00.2	22 18.3 +01.6	S	22 53.4 -00.5	332 19.5 -28.0	S	11 03.0 -13.3	16			
17	76 45.6 -00.3	S	22 58.2 +00.2	37 19.9 +01.7	S	22 52.9 -00.5	346 51.5 -27.9	S	10 49.7 -13.4	17			
18	91 45.3 -00.3	S	22 58.4 +00.2	52 21.6 +01.7	S	22 52.4 -00.6	1 23.6 -27.7	S	10 36.3 -13.5	18			
19	106 45.0 -00.3	S	22 58.6 +00.2	67 23.3 +01.7	S	22 51.8 -00.5	15 55.9 -27.8	S	10 22.8 -13.4	19			
20	121 44.7 -00.3	S	22 58.8 +00.3	82 25.0 +01.6	S	22 51.3 -00.5	30 28.1 -27.6	S	10 09.4 -13.5	20			
21	136 44.4 -00.2	S	22 59.1 +00.2	97 26.6 +01.7	S	22 50.8 -00.5	45 00.5 -27.5	S	09 55.9 -13.5	21			
22	151 44.2 -00.3	S	22 59.3 +00.2	112 28.3 +01.7	S	22 50.3 -00.6	59 33.0 -27.5	S	09 42.4 -13.6	22			
23	166 43.9 -00.3	S	22 59.5 +00.2	127 30.0 +01.7	S	22 49.7 -00.5	74 05.5 -27.4	S	09 28.8 -13.5	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 00'4 00'4 00'4 00'4 00'4 00'4			SD 15'7 15'6 15'6 15'6 15'5 15'5						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'4 00'4 00'4 00'4 00'4 00'4			HP 57'6 57'4 57'3 57'1 57'0 56'8						
	SHA 103° 103° 102° 102° 102° 102°			SHA 063° 063° 063° 063° 063° 063°			SHA 020° 018° 016° 014° 012° 010°						
	Greenwich Culmination Time: 11:52			Greenwich Culmination Time: 14:30			Greenwich Culmination Time: 17:54						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	203 34.1 +00.7	S	19 31.8 +00.5	109 40.8 +02.1	S	13 35.4 -00.1	126 33.0 +02.2	S	18 36.1 -00.1	00			
01	218 34.8 +00.6	S	19 32.3 +00.4	124 42.9 +02.1	S	13 35.3 -00.2	141 35.2 +02.2	S	18 36.0 +00.0	01			
02	233 35.4 +00.7	S	19 32.7 +00.4	139 45.0 +02.1	S	13 35.1 -00.1	156 37.4 +02.3	S	18 36.0 -00.1	02			
03	248 36.1 +00.7	S	19 33.1 +00.4	154 47.1 +02.1	S	13 35.0 -00.1	171 39.7 +02.2	S	18 35.9 -00.1	03			
04	263 36.8 +00.6	S	19 33.5 +00.4	169 49.2 +02.1	S	13 34.9 -00.2	186 41.9 +02.2	S	18 35.8 +00.0	04			
05	278 37.4 +00.7	S	19 33.9 +00.4	184 51.3 +02.1	S	13 34.7 -00.1	201 44.1 +02.3	S	18 35.8 -00.1	05			
06	293 38.1 +00.7	S	19 34.3 +00.5	199 53.4 +02.0	S	13 34.6 -00.1	216 46.4 +02.2	S	18 35.7 +00.0	06			
07	308 38.8 +00.7	S	19 34.8 +00.4	214 55.4 +02.1	S	13 34.5 -00.2	231 48.6 +02.3	S	18 35.7 -00.1	07			
08	323 39.5 +00.6	S	19 35.2 +00.4	229 57.5 +02.1	S	13 34.3 -00.1	246 50.9 +02.2	S	18 35.6 -00.1	08			
09	338 40.1 +00.7	S	19 35.6 +00.4	244 59.6 +02.1	S	13 34.2 -00.2	261 53.1 +02.2	S	18 35.5 +00.0	09			
10	353 40.8 +00.7	S	19 36.0 +00.4	260 01.7 +02.1	S	13 34.0 -00.1	276 55.3 +02.3	S	18 35.5 -00.1	10			
11	8 41.5 +00.6	S	19 36.4 +00.4	275 03.8 +02.1	S	13 33.9 -00.1	291 57.6 +02.2	S	18 35.4 +00.0	11			
12	23 42.1 +00.7	S	19 36.8 +00.4	290 05.9 +02.1	S	13 33.8 -00.2	306 59.8 +02.2	S	18 35.4 -00.1	12			
13	38 42.8 +00.7	S	19 37.2 +00.5	305 08.0 +02.1	S	13 33.6 -00.1	322 02.0 +02.3	S	18 35.3 -00.1	13			
14	53 43.5 +00.6	S	19 37.7 +00.4	320 10.1 +02.1	S	13 33.5 -00.1	337 04.3 +02.2	S	18 35.2 +00.0	14			
15	68 44.1 +00.7	S	19 38.1 +00.4	335 12.2 +02.1	S	13 33.4 -00.2	352 06.5 +02.3	S	18 35.2 -00.1	15			
16	83 44.8 +00.7	S	19 38.5 +00.4	350 14.3 +02.1	S	13 33.2 -00.1	7 08.8 +02.2	S	18 35.1 +00.0	16			
17	98 45.5 +00.6	S	19 38.9 +00.4	5 16.4 +02.0	S	13 33.1 -00.2	22 11.0 +02.2	S	18 35.1 -00.1	17			
18	113 46.1 +00.7	S	19 39.3 +00.4	20 18.4 +02.1	S	13 32.9 -00.1	37 13.2 +02.3	S	18 35.0 -00.1	18			
19	128 46.8 +00.7	S	19 39.7 +00.4	35 20.5 +02.1	S	13 32.8 -00.1	52 15.5 +02.2	S	18 34.9 +00.0	19			
20	143 47.5 +00.6	S	19 40.1 +00.5	50 22.6 +02.1	S	13 32.7 -00.2	67 17.7 +02.2	S	18 34.9 -00.1	20			
21	158 48.1 +00.7	S	19 40.6 +00.4	65 24.7 +02.1	S	13 32.5 -00.1	82 19.9 +02.3	S	18 34.8 +00.0	21			
22	173 48.8 +00.7	S	19 41.0 +00.4	80 26.8 +02.1	S	13 32.4 -00.1	97 22.2 +02.2	S	18 34.8 -00.1	22			
23	188 49.5 +00.6	S	19 41.4 +00.4	95 28.9 +02.1	S	13 32.3 -00.2	112 24.4 +02.2	S	18 34.7 -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 125° 124° 124° 124° 124° 124°			SHA 031° 031° 031° 031° 031° 031°			SHA 048° 048° 048° 048° 048° 048°						
	Greenwich Culmination Time: 10:25			Greenwich Culmination Time: 16:38			Greenwich Culmination Time: 15:31						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> A: 27%				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	181 43.6 -00.3	S	22 59.7 +00.2	142 31.7 +01.7	S	22 49.2 -00.5	88 38.1 -27.3	S	09 15.3 -13.6	00			
01	196 43.3 -00.3	S	22 59.9 +00.2	157 33.4 +01.7	S	22 48.7 -00.5	103 10.8 -27.3	S	09 01.7 -13.7	01			
02	211 43.0 -00.3	S	23 00.1 +00.2	172 35.1 +01.7	S	22 48.2 -00.5	117 43.5 -27.1	S	08 48.0 -13.6	02			
03	226 42.7 -00.3	S	23 00.3 +00.2	187 36.8 +01.7	S	22 47.7 -00.6	132 16.4 -27.1	S	08 34.4 -13.7	03			
04	241 42.4 -00.3	S	23 00.5 +00.2	202 38.5 +01.8	S	22 47.1 -00.5	146 49.3 -27.1	S	08 20.7 -13.6	04			
05	256 42.1 -00.2	S	23 00.7 +00.2	217 40.3 +01.7	S	22 46.6 -00.5	161 22.2 -26.9	S	08 07.1 -13.7	05			
06	271 41.9 -00.3	S	23 00.9 +00.2	232 42.0 +01.7	S	22 46.1 -00.5	175 55.3 -26.9	S	07 53.4 -13.7	06			
07	286 41.6 -00.3	S	23 01.1 +00.2	247 43.7 +01.7	S	22 45.6 -00.5	190 28.4 -26.9	S	07 39.7 -13.8	07			
08	301 41.3 -00.3	S	23 01.3 +00.2	262 45.4 +01.8	S	22 45.1 -00.6	205 01.5 -26.7	S	07 25.9 -13.7	08			
09	316 41.0 -00.3	S	23 01.5 +00.2	277 47.2 +01.7	S	22 44.5 -00.5	219 34.8 -26.7	S	07 12.2 -13.8	09			
10	331 40.7 -00.3	S	23 01.7 +00.2	292 48.9 +01.7	S	22 44.0 -00.5	234 08.1 -26.7	S	06 58.4 -13.8	10			
11	346 40.4 -00.3	S	23 01.9 +00.2	307 50.6 +01.8	S	22 43.5 -00.5	248 41.4 -26.6	S	06 44.6 -13.7	11			
12	1 40.1 -00.3	S	23 02.1 +00.2	322 52.4 +01.7	S	22 43.0 -00.6	263 14.8 -26.5	S	06 30.9 -13.8	12			
13	16 39.8 -00.3	S	23 02.3 +00.2	337 54.1 +01.8	S	22 42.4 -00.5	277 48.3 -26.4	S	06 17.1 -13.9	13			
14	31 39.5 -00.2	S	23 02.5 +00.2	352 55.9 +01.7	S	22 41.9 -00.5	292 21.9 -26.4	S	06 03.2 -13.8	14			
15	46 39.3 -00.3	S	23 02.7 +00.2	7 57.6 +01.8	S	22 41.4 -00.5	306 55.5 -26.4	S	05 49.4 -13.8	15			
16	61 39.0 -00.3	S	23 02.9 +00.2	22 59.4 +01.8	S	22 40.9 -00.6	321 29.1 -26.3	S	05 35.6 -13.8	16			
17	76 38.7 -00.3	S	23 03.1 +00.2	38 01.2 +01.7	S	22 40.3 -00.5	336 02.8 -26.2	S	05 21.8 -13.9	17			
18	91 38.4 -00.3	S	23 03.3 +00.2	53 02.9 +01.8	S	22 39.8 -00.5	350 36.6 -26.2	S	05 07.9 -13.8	18			
19	106 38.1 -00.3	S	23 03.5 +00.1	68 04.7 +01.8	S	22 39.3 -00.5	5 10.4 -26.1	S	04 54.1 -13.9	19			
20	121 37.8 -00.3	S	23 03.6 +00.2	83 06.5 +01.8	S	22 38.8 -00.6	19 44.3 -26.1	S	04 40.2 -13.9	20			
21	136 37.5 -00.3	S	23 03.8 +00.2	98 08.3 +01.7	S	22 38.2 -00.5	34 18.2 -26.1	S	04 26.3 -13.8	21			
22	151 37.2 -00.3	S	23 04.0 +00.2	113 10.0 +01.8	S	22 37.7 -00.5	48 52.1 -25.9	S	04 12.5 -13.9	22			
23	166 36.9 -00.3	S	23 04.2 +00.2	128 11.8 +01.8	S	22 37.2 -00.5	63 26.2 -26.0	S	03 58.6 -13.9	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 00'4 00'4 00'4 00'4 00'4 00'4			SD 15'4 15'4 15'4 15'3 15'3 15'3						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'4 00'4 00'4 00'4 00'4 00'4			HP 56'7 56'5 56'4 56'3 56'2 56'0						
	SHA 102° 102° 101° 101° 101° 101°			SHA 063° 063° 062° 062° 062° 062°			SHA 008° 006° 004° 002° 360° 358°						
	Greenwich Culmination Time: 11:53			Greenwich Culmination Time: 14:28			Greenwich Culmination Time: 18:38						

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	203 50.1 +00.7	S	19 41.8 +00.4	110 31.0 +02.1	S	13 32.1 -00.1	127 26.6 +02.3	S	18 34.6 +00.0	00			
01	218 50.8 +00.7	S	19 42.2 +00.4	125 33.1 +02.1	S	13 32.0 -00.2	142 28.9 +02.2	S	18 34.6 -00.1	01			
02	233 51.5 +00.6	S	19 42.6 +00.4	140 35.2 +02.0	S	13 31.8 -00.1	157 31.1 +02.3	S	18 34.5 +00.0	02			
03	248 52.1 +00.7	S	19 43.0 +00.4	155 37.2 +02.1	S	13 31.7 -00.1	172 33.4 +02.2	S	18 34.5 -00.1	03			
04	263 52.8 +00.6	S	19 43.4 +00.4	170 39.3 +02.1	S	13 31.6 -00.2	187 35.6 +02.2	S	18 34.4 -00.1	04			
05	278 53.4 +00.7	S	19 43.8 +00.4	185 41.4 +02.1	S	13 31.4 -00.1	202 37.8 +02.3	S	18 34.3 +00.0	05			
06	293 54.1 +00.7	S	19 44.2 +00.5	200 43.5 +02.1	S	13 31.3 -00.2	217 40.1 +02.2	S	18 34.3 -00.1	06			
07	308 54.8 +00.6	S	19 44.7 +00.4	215 45.6 +02.1	S	13 31.1 -00.1	232 42.3 +02.2	S	18 34.2 +00.0	07			
08	323 55.4 +00.7	S	19 45.1 +00.4	230 47.7 +02.1	S	13 31.0 -00.1	247 44.5 +02.3	S	18 34.2 -00.1	08			
09	338 56.1 +00.7	S	19 45.5 +00.4	245 49.8 +02.1	S	13 30.9 -00.2	262 46.8 +02.2	S	18 34.1 -00.1	09			
10	353 56.8 +00.6	S	19 45.9 +00.4	260 51.9 +02.0	S	13 30.7 -00.1	277 49.0 +02.2	S	18 34.0 +00.0	10			
11	8 57.4 +00.7	S	19 46.3 +00.4	275 53.9 +02.1	S	13 30.6 -00.1	292 51.2 +02.3	S	18 34.0 -00.1	11			
12	23 58.1 +00.7	S	19 46.7 +00.4	290 56.0 +02.1	S	13 30.5 -00.2	307 53.5 +02.2	S	18 33.9 +00.0	12			
13	38 58.8 +00.6	S	19 47.1 +00.4	305 58.1 +02.1	S	13 30.3 -00.1	322 55.7 +02.2	S	18 33.9 -00.1	13			
14	53 59.4 +00.7	S	19 47.5 +00.4	321 00.2 +02.1	S	13 30.2 -00.2	337 57.9 +02.3	S	18 33.8 -00.1	14			
15	69 00.1 +00.6	S	19 47.9 +00.4	336 02.3 +02.1	S	13 30.0 -00.1	353 00.2 +02.2	S	18 33.7 +00.0	15			
16	84 00.7 +00.7	S	19 48.3 +00.4	351 04.4 +02.0	S	13 29.9 -00.1	8 02.4 +02.2	S	18 33.7 -00.1	16			
17	99 01.4 +00.7	S	19 48.7 +00.4	6 06.4 +02.1	S	13 29.8 -00.2	23 04.6 +02.3	S	18 33.6 +00.0	17			
18	114 02.1 +00.6	S	19 49.1 +00.5	21 08.5 +02.1	S	13 29.6 -00.1	38 06.9 +02.2	S	18 33.6 -00.1	18			
19	129 02.7 +00.7	S	19 49.6 +00.4	36 10.6 +02.1	S	13 29.5 -00.2	53 09.1 +02.2	S	18 33.5 -00.1	19			
20	144 03.4 +00.6	S	19 50.0 +00.4	51 12.7 +02.1	S	13 29.3 -00.1	68 11.3 +02.3	S	18 33.4 +00.0	20			
21	159 04.0 +00.7	S	19 50.4 +00.4	66 14.8 +02.1	S	13 29.2 -00.1	83 13.6 +02.2	S	18 33.4 -00.1	21			
22	174 04.7 +00.7	S	19 50.8 +00.4	81 16.9 +02.1	S	13 29.1 -00.2	98 15.8 +02.2	S	18 33.3 +00.0	22			
23	189 05.4 +00.6	S	19 51.2 +00.4	96 19.0 +02.0	S	13 28.9 -00.1	113 18.0 +02.3	S	18 33.3 -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 124° 124° 124° 123° 123° 123°			SHA 031° 031° 031° 031° 030° 030°			SHA 048° 047° 047° 047° 047° 047°						
	Greenwich Culmination Time: 10:24			Greenwich Culmination Time: 16:35			Greenwich Culmination Time: 15:27						

Sun					Venus					Moon					A: 30%					
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT							
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "								
00	181 36.6	-00.2	S 23 04.4	+00.2	143 13.6	+01.8	S 22 36.7	-00.6	78 00.2	-25.9	S 03 44.7	-13.8	00							
01	196 36.4	-00.3	S 23 04.6	+00.2	158 15.4	+01.8	S 22 36.1	-00.5	92 34.3	-25.8	S 03 30.9	-13.9	01							
02	211 36.1	-00.3	S 23 04.8	+00.2	173 17.2	+01.8	S 22 35.6	-00.5	107 08.5	-25.9	S 03 17.0	-13.9	02							
03	226 35.8	-00.3	S 23 05.0	+00.2	188 19.0	+01.8	S 22 35.1	-00.5	121 42.6	-25.7	S 03 03.1	-13.8	03							
04	241 35.5	-00.3	S 23 05.2	+00.1	203 20.8	+01.8	S 22 34.6	-00.6	136 16.9	-25.8	S 02 49.3	-13.9	04							
05	256 35.2	-00.3	S 23 05.3	+00.2	218 22.6	+01.9	S 22 34.0	-00.5	150 51.1	-25.7	S 02 35.4	-13.9	05							
06	271 34.9	-00.3	S 23 05.5	+00.2	233 24.5	+01.8	S 22 33.5	-00.5	165 25.4	-25.6	S 02 21.5	-13.8	06							
07	286 34.6	-00.3	S 23 05.7	+00.2	248 26.3	+01.8	S 22 33.0	-00.5	179 59.8	-25.6	S 02 07.7	-13.9	07							
08	301 34.3	-00.3	S 23 05.9	+00.2	263 28.1	+01.8	S 22 32.5	-00.6	194 34.2	-25.6	S 01 53.8	-13.8	08							
09	316 34.0	-00.3	S 23 06.1	+00.1	278 29.9	+01.9	S 22 31.9	-00.5	209 08.6	-25.6	S 01 40.0	-13.8	09							
10	331 33.7	-00.3	S 23 06.2	+00.2	293 31.8	+01.8	S 22 31.4	-00.5	223 43.0	-25.5	S 01 26.2	-13.9	10							
11	346 33.4	-00.2	S 23 06.4	+00.2	308 33.6	+01.8	S 22 30.9	-00.5	238 17.5	-25.5	S 01 12.3	-13.8	11							
12	1 33.2	-00.3	S 23 06.6	+00.2	323 35.4	+01.9	S 22 30.4	-00.6	252 52.0	-25.5	S 00 58.5	-13.8	12							
13	16 32.9	-00.3	S 23 06.8	+00.2	338 37.3	+01.8	S 22 29.8	-00.5	267 26.5	-25.4	S 00 44.7	-13.8	13							
14	31 32.6	-00.3	S 23 07.0	+00.1	353 39.1	+01.9	S 22 29.3	-00.5	282 01.1	-25.4	S 00 30.9	-13.8	14							
15	46 32.3	-00.3	S 23 07.1	+00.2	8 41.0	+01.8	S 22 28.8	-00.5	296 35.7	-25.4	S 00 17.1	-13.8	15							
16	61 32.0	-00.3	S 23 07.3	+00.2	23 42.8	+01.9	S 22 28.3	-00.6	311 10.3	-25.3	S 00 03.3	-13.8	16							
17	76 31.7	-00.3	S 23 07.5	+00.2	38 44.7	+01.9	S 22 27.7	-00.5	325 45.0	-25.4	N 00 10.5	+13.7	17							
18	91 31.4	-00.3	S 23 07.7	+00.1	53 46.6	+01.8	S 22 27.2	-00.5	340 19.6	-25.3	N 00 24.2	+13.8	18							
19	106 31.1	-00.3	S 23 07.8	+00.2	68 48.4	+01.9	S 22 26.7	-00.5	354 54.3	-25.2	N 00 38.0	+13.7	19							
20	121 30.8	-00.3	S 23 08.0	+00.2	83 50.3	+01.9	S 22 26.2	-00.6	9 29.1	-25.3	N 00 51.7	+13.7	20							
21	136 30.5	-00.3	S 23 08.2	+00.1	98 52.2	+01.9	S 22 25.6	-00.5	24 03.8	-25.3	N 01 05.4	+13.7	21							
22	151 30.2	-00.3	S 23 08.3	+00.2	113 54.1	+01.8	S 22 25.1	-00.5	38 38.5	-25.2	N 01 19.1	+13.7	22							
23	166 29.9	-00.3	S 23 08.5	+00.2	128 55.9	+01.9	S 22 24.6	-00.5	53 13.3	-25.2	N 01 32.8	+13.6	23							
UT	02	06	10	14	18	22														
SD	16'2	16'2	16'2	16'2	16'2	16'2	SD	00'4	00'4	00'4	00'4	00'4	00'4	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	00'4	00'4	00'4	00'4	00'4	00'4	HP	55'9	55'8	55'7	55'6	55'5	55'4
SHA	101°	100°	100°	100°	100°	100°	SHA	062°	062°	062°	062°	062°	062°	SHA	356°	354°	352°	351°	349°	347°
Greenwich Culmination Time: 11:53							Greenwich Culmination Time: 14:25							Greenwich Culmination Time: 19:20						

Mars					Jupiter					Saturn					UT					
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT							
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "								
00	204 06.0	+00.7	S 19 51.6	+00.4	111 21.0	+02.1	S 13 28.8	-00.2	128 20.3	+02.2	S 18 33.2	-00.1	00							
01	219 06.7	+00.6	S 19 52.0	+00.4	126 23.1	+02.1	S 13 28.6	-00.1	143 22.5	+02.2	S 18 33.1	+00.0	01							
02	234 07.3	+00.7	S 19 52.4	+00.4	141 25.2	+02.1	S 13 28.5	-00.1	158 24.7	+02.3	S 18 33.1	-00.1	02							
03	249 08.0	+00.7	S 19 52.8	+00.4	156 27.3	+02.1	S 13 28.4	-00.2	173 27.0	+02.2	S 18 33.0	+00.0	03							
04	264 08.7	+00.6	S 19 53.2	+00.4	171 29.4	+02.0	S 13 28.2	-00.1	188 29.2	+02.2	S 18 33.0	-00.1	04							
05	279 09.3	+00.7	S 19 53.6	+00.4	186 31.4	+02.1	S 13 28.1	-00.2	203 31.4	+02.3	S 18 32.9	-00.1	05							
06	294 10.0	+00.6	S 19 54.0	+00.4	201 33.5	+02.1	S 13 27.9	-00.1	218 33.7	+02.2	S 18 32.8	+00.0	06							
07	309 10.6	+00.7	S 19 54.4	+00.4	216 35.6	+02.1	S 13 27.8	-00.1	233 35.9	+02.2	S 18 32.8	-00.1	07							
08	324 11.3	+00.7	S 19 54.8	+00.4	231 37.7	+02.1	S 13 27.7	-00.2	248 38.1	+02.3	S 18 32.7	+00.0	08							
09	339 12.0	+00.6	S 19 55.2	+00.4	246 39.8	+02.1	S 13 27.5	-00.1	263 40.4	+02.2	S 18 32.7	-00.1	09							
10	354 12.6	+00.7	S 19 55.6	+00.4	261 41.9	+02.0	S 13 27.4	-00.2	278 42.6	+02.2	S 18 32.6	-00.1	10							
11	9 13.3	+00.6	S 19 56.0	+00.4	276 43.9	+02.1	S 13 27.2	-00.1	293 44.8	+02.3	S 18 32.5	+00.0	11							
12	24 13.9	+00.7	S 19 56.4	+00.4	291 46.0	+02.1	S 13 27.1	-00.1	308 47.1	+02.2	S 18 32.5	-00.1	12							
13	39 14.6	+00.6	S 19 56.8	+00.4	306 48.1	+02.1	S 13 27.0	-00.2	323 49.3	+02.2	S 18 32.4	-00.1	13							
14	54 15.2	+00.7	S 19 57.2	+00.4	321 50.2	+02.1	S 13 26.8	-00.1	338 51.5	+02.3	S 18 32.3	+00.0	14							
15	69 15.9	+00.7	S 19 57.6	+00.4	336 52.3	+02.0	S 13 26.7	-00.2	353 53.8	+02.2	S 18 32.3	-00.1	15							
16	84 16.6	+00.6	S 19 58.0	+00.4	351 54.3	+02.1	S 13 26.5	-00.1	8 56.0	+02.2	S 18 32.2	+00.0	16							
17	99 17.2	+00.7	S 19 58.4	+00.4	6 56.4	+02.1	S 13 26.4	-00.2	23 58.2	+02.3	S 18 32.2	-00.1	17							
18	114 17.9	+00.6	S 19 58.8	+00.4	21 58.5	+02.1	S 13 26.2	-00.1	39 00.5	+02.2	S 18 32.1	-00.1	18							
19	129 18.5	+00.7	S 19 59.2	+00.4	37 00.6	+02.1	S 13 26.1	-00.1	54 02.7	+02.2	S 18 32.0	+00.0	19							
20	144 19.2	+00.6	S 19 59.6	+00.4	52 02.7	+02.0	S 13 26.0	-00.2	69 04.9	+02.3	S 18 32.0	-00.1	20							
21	159 19.8	+00.7	S 20 00.0	+00.4	67 04.7	+02.1	S 13 25.8	-00.1	84 07.2	+02.2	S 18 31.9	+00.0	21							
22	174 20.5	+00.6	S 20 00.4	+00.4	82 06.8	+02.1	S 13 25.7	-00.2	99 09.4	+02.2	S 18 31.9	-00.1	22							
23	189 21.1	+00.7	S 20 00.8	+00.4	97 08.9	+02.1	S 13 25.5	-00.1	114 11.6	+02.2	S 18 31.8	-00.1	23							
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	123°	123°	123°	123°	123°	123°	SHA	030°	030°	030°	030°	030°	030°	SHA	047°	047°	047°	047°	047°	047°
Greenwich Culmination Time: 10:23							Greenwich Culmination Time: 16:32							Greenwich Culmination Time: 15:24						

Sun					Venus					Moon					A: 32%					
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT							
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "								
00	181	29.6	-00.3	S 23 08.7	+00.1	143	57.8	+01.9	S 22 24.1	-00.6	67	48.1	-25.2	N 01 46.4	+13.7	00				
01	196	29.3	-00.3	S 23 08.8	+00.2	158	59.7	+01.9	S 22 23.5	-00.5	82	22.9	-25.2	N 02 00.1	+13.6	01				
02	211	29.0	-00.2	S 23 09.0	+00.2	174	01.6	+01.9	S 22 23.0	-00.5	96	57.7	-25.1	N 02 13.7	+13.6	02				
03	226	28.8	-00.3	S 23 09.2	+00.1	189	03.5	+01.9	S 22 22.5	-00.5	111	32.6	-25.2	N 02 27.3	+13.6	03				
04	241	28.5	-00.3	S 23 09.3	+00.2	204	05.4	+01.9	S 22 22.0	-00.6	126	07.4	-25.1	N 02 40.9	+13.6	04				
05	256	28.2	-00.3	S 23 09.5	+00.2	219	07.3	+02.0	S 22 21.4	-00.5	140	42.3	-25.1	N 02 54.5	+13.5	05				
06	271	27.9	-00.3	S 23 09.7	+00.1	234	09.3	+01.9	S 22 20.9	-00.5	155	17.2	-25.2	N 03 08.0	+13.5	06				
07	286	27.6	-00.3	S 23 09.8	+00.2	249	11.2	+01.9	S 22 20.4	-00.6	169	52.0	-25.1	N 03 21.5	+13.5	07				
08	301	27.3	-00.3	S 23 10.0	+00.2	264	13.1	+01.9	S 22 19.8	-00.5	184	26.9	-25.1	N 03 35.0	+13.5	08				
09	316	27.0	-00.3	S 23 10.2	+00.1	279	15.0	+02.0	S 22 19.3	-00.5	199	01.8	-25.1	N 03 48.5	+13.4	09				
10	331	26.7	-00.3	S 23 10.3	+00.2	294	17.0	+01.9	S 22 18.8	-00.5	213	36.7	-25.1	N 04 01.9	+13.5	10				
11	346	26.4	-00.3	S 23 10.5	+00.1	309	18.9	+01.9	S 22 18.3	-00.6	228	11.6	-25.1	N 04 15.4	+13.4	11				
12	1	26.1	-00.3	S 23 10.6	+00.2	324	20.8	+02.0	S 22 17.7	-00.5	242	46.5	-25.1	N 04 28.8	+13.3	12				
13	16	25.8	-00.3	S 23 10.8	+00.2	339	22.8	+01.9	S 22 17.2	-00.5	257	21.4	-25.1	N 04 42.1	+13.4	13				
14	31	25.5	-00.3	S 23 11.0	+00.1	354	24.7	+02.0	S 22 16.7	-00.5	271	56.3	-25.0	N 04 55.5	+13.3	14				
15	46	25.2	-00.3	S 23 11.1	+00.2	9	26.7	+01.9	S 22 16.2	-00.6	286	31.3	-25.1	N 05 08.8	+13.3	15				
16	61	24.9	-00.3	S 23 11.3	+00.1	24	28.6	+02.0	S 22 15.6	-00.5	301	06.2	-25.1	N 05 22.1	+13.2	16				
17	76	24.6	-00.3	S 23 11.4	+00.2	39	30.6	+02.0	S 22 15.1	-00.5	315	41.1	-25.1	N 05 35.3	+13.2	17				
18	91	24.3	-00.3	S 23 11.6	+00.1	54	32.6	+01.9	S 22 14.6	-00.6	330	16.0	-25.1	N 05 48.5	+13.2	18				
19	106	24.0	-00.3	S 23 11.7	+00.2	69	34.5	+02.0	S 22 14.0	-00.5	344	50.9	-25.1	N 06 01.7	+13.2	19				
20	121	23.7	-00.3	S 23 11.9	+00.1	84	36.5	+02.0	S 22 13.5	-00.5	359	25.8	-25.1	N 06 14.9	+13.1	20				
21	136	23.4	-00.3	S 23 12.0	+00.2	99	38.5	+02.0	S 22 13.0	-00.5	14	00.7	-25.1	N 06 28.0	+13.1	21				
22	151	23.1	-00.3	S 23 12.2	+00.1	114	40.5	+01.9	S 22 12.5	-00.6	28	35.6	-25.1	N 06 41.1	+13.1	22				
23	166	22.8	-00.3	S 23 12.3	+00.2	129	42.4	+02.0	S 22 11.9	-00.5	43	10.5	-25.2	N 06 54.2	+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	00'4	00'4	00'4	00'4	00'4	00'4	SD	15'1	15'0	15'0	15'0	15'0	14'9
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'4	00'4	00'4	00'4	00'4	00'4	HP	55'3	55'2	55'1	55'0	54'9	54'8
SHA	100°	099°	099°	099°	099°	099°	SHA	062°	062°	062°	062°	062°	062°	SHA	345°	343°	341°	339°	338°	336°
Greenwich Culmination Time: 11:54							Greenwich Culmination Time: 14:22							Greenwich Culmination Time: 20:02						

Mars					Jupiter					Saturn					UT					
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT							
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "								
00	204	21.8	+00.7	S 20 01.2	+00.4	112	11.0	+02.1	S 13 25.4	-00.1	129	13.8	+02.3	S 18 31.7	+00.0	00				
01	219	22.5	+00.6	S 20 01.6	+00.4	127	13.1	+02.0	S 13 25.3	-00.2	144	16.1	+02.2	S 18 31.7	-00.1	01				
02	234	23.1	+00.7	S 20 02.0	+00.4	142	15.1	+02.1	S 13 25.1	-00.1	159	18.3	+02.2	S 18 31.6	-00.1	02				
03	249	23.8	+00.6	S 20 02.4	+00.4	157	17.2	+02.1	S 13 25.0	-00.2	174	20.5	+02.3	S 18 31.5	+00.0	03				
04	264	24.4	+00.7	S 20 02.8	+00.4	172	19.3	+02.1	S 13 24.8	-00.1	189	22.8	+02.2	S 18 31.5	-00.1	04				
05	279	25.1	+00.6	S 20 03.2	+00.4	187	21.4	+02.0	S 13 24.7	-00.2	204	25.0	+02.2	S 18 31.4	+00.0	05				
06	294	25.7	+00.7	S 20 03.6	+00.4	202	23.4	+02.1	S 13 24.5	-00.1	219	27.2	+02.3	S 18 31.4	-00.1	06				
07	309	26.4	+00.6	S 20 04.0	+00.4	217	25.5	+02.1	S 13 24.4	-00.1	234	29.5	+02.2	S 18 31.3	-00.1	07				
08	324	27.0	+00.7	S 20 04.4	+00.4	232	27.6	+02.1	S 13 24.3	-00.2	249	31.7	+02.2	S 18 31.2	+00.0	08				
09	339	27.7	+00.6	S 20 04.8	+00.4	247	29.7	+02.0	S 13 24.1	-00.1	264	33.9	+02.2	S 18 31.2	-00.1	09				
10	354	28.3	+00.7	S 20 05.2	+00.4	262	31.7	+02.1	S 13 24.0	-00.2	279	36.1	+02.3	S 18 31.1	+00.0	10				
11	9	29.0	+00.6	S 20 05.6	+00.4	277	33.8	+02.1	S 13 23.8	-00.1	294	38.4	+02.2	S 18 31.1	-00.1	11				
12	24	29.6	+00.7	S 20 06.0	+00.3	292	35.9	+02.1	S 13 23.7	-00.2	309	40.6	+02.2	S 18 31.0	-00.1	12				
13	39	30.3	+00.6	S 20 06.3	+00.4	307	38.0	+02.0	S 13 23.5	-00.1	324	42.8	+02.3	S 18 30.9	+00.0	13				
14	54	30.9	+00.7	S 20 06.7	+00.4	322	40.0	+02.1	S 13 23.4	-00.1	339	45.1	+02.2	S 18 30.9	-00.1	14				
15	69	31.6	+00.6	S 20 07.1	+00.4	337	42.1	+02.1	S 13 23.3	-00.2	354	47.3	+02.2	S 18 30.8	-00.1	15				
16	84	32.2	+00.7	S 20 07.5	+00.4	352	44.2	+02.1	S 13 23.1	-00.1	9	49.5	+02.3	S 18 30.7	+00.0	16				
17	99	32.9	+00.6	S 20 07.9	+00.4	7	46.3	+02.0	S 13 23.0	-00.2	24	51.8	+02.2	S 18 30.7	-00.1	17				
18	114	33.5	+00.7	S 20 08.3	+00.4	22	48.3	+02.1	S 13 22.8	-00.1	39	54.0	+02.2	S 18 30.6	+00.0	18				
19	129	34.2	+00.6	S 20 08.7	+00.4	37	50.4	+02.1	S 13 22.7	-00.2	54	56.2	+02.2	S 18 30.6	-00.1	19				
20	144	34.8	+00.7	S 20 09.1	+00.4	52	52.5	+02.1	S 13 22.5	-00.1	69	58.4	+02.3	S 18 30.5	-00.1	20				
21	159	35.5	+00.6	S 20 09.5	+00.4	67	54.6	+02.0	S 13 22.4	-00.1	85	00.7	+02.2	S 18 30.4	+00.0	21				
22	174	36.1	+00.7	S 20 09.9	+00.4	82	56.6	+02.1	S 13 22.3	-00.2	100	02.9	+02.2	S 18 30.4	-00.1	22				
23	189	36.8	+00.6	S 20 10.3	+00.4	97	58.7	+02.1	S 13 22.1	-00.1	115	05.1	+02.3	S 18 30.3	-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	122°	122°	122°	122°	122°	122°	SHA	030°	030°	030°	030°	030°	030°	SHA	047°	047°	047°	047°	047°	047°
Greenwich Culmination Time: 10:22							Greenwich Culmination Time: 16:28							Greenwich Culmination Time: 15:20						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	181 22.5 -00.3	S	23 12.5 +00.1	144 44.4 +02.0	S	22 11.4 -00.5	57 45.3 -25.1	N	07 07.2 +13.0	00			
01	196 22.2 -00.2	S	23 12.6 +00.2	159 46.4 +02.0	S	22 10.9 -00.6	72 20.2 -25.1	N	07 20.2 +13.0	01			
02	211 22.0 -00.3	S	23 12.8 +00.1	174 48.4 +02.0	S	22 10.3 -00.5	86 55.1 -25.2	N	07 33.2 +12.9	02			
03	226 21.7 -00.3	S	23 12.9 +00.2	189 50.4 +02.0	S	22 09.8 -00.5	101 29.9 -25.2	N	07 46.1 +12.9	03			
04	241 21.4 -00.3	S	23 13.1 +00.1	204 52.4 +02.0	S	22 09.3 -00.5	116 04.7 -25.1	N	07 59.0 +12.8	04			
05	256 21.1 -00.3	S	23 13.2 +00.2	219 54.4 +02.1	S	22 08.8 -00.6	130 39.6 -25.2	N	08 11.8 +12.8	05			
06	271 20.8 -00.3	S	23 13.4 +00.1	234 56.5 +02.0	S	22 08.2 -00.5	145 14.4 -25.3	N	08 24.6 +12.8	06			
07	286 20.5 -00.3	S	23 13.5 +00.2	249 58.5 +02.0	S	22 07.7 -00.5	159 49.1 -25.2	N	08 37.4 +12.7	07			
08	301 20.2 -00.3	S	23 13.7 +00.1	265 00.5 +02.0	S	22 07.2 -00.5	174 23.9 -25.2	N	08 50.1 +12.7	08			
09	316 19.9 -00.3	S	23 13.8 +00.1	280 02.5 +02.1	S	22 06.7 -00.6	188 58.7 -25.3	N	09 02.8 +12.7	09			
10	331 19.6 -00.3	S	23 13.9 +00.2	295 04.6 +02.0	S	22 06.1 -00.5	203 33.4 -25.3	N	09 15.5 +12.6	10			
11	346 19.3 -00.3	S	23 14.1 +00.1	310 06.6 +02.0	S	22 05.6 -00.5	218 08.1 -25.3	N	09 28.1 +12.5	11			
12	1 19.0 -00.3	S	23 14.2 +00.2	325 08.6 +02.1	S	22 05.1 -00.6	232 42.8 -25.3	N	09 40.6 +12.5	12			
13	16 18.7 -00.3	S	23 14.4 +00.1	340 10.7 +02.0	S	22 04.5 -00.5	247 17.5 -25.4	N	09 53.1 +12.5	13			
14	31 18.4 -00.3	S	23 14.5 +00.1	355 12.7 +02.1	S	22 04.0 -00.5	261 52.1 -25.3	N	10 05.6 +12.4	14			
15	46 18.1 -00.3	S	23 14.6 +00.2	10 14.8 +02.0	S	22 03.5 -00.5	276 26.8 -25.4	N	10 18.0 +12.4	15			
16	61 17.8 -00.3	S	23 14.8 +00.1	25 16.8 +02.1	S	22 03.0 -00.6	291 01.4 -25.4	N	10 30.4 +12.4	16			
17	76 17.5 -00.3	S	23 14.9 +00.1	40 18.9 +02.1	S	22 02.4 -00.5	305 36.0 -25.5	N	10 42.8 +12.3	17			
18	91 17.2 -00.3	S	23 15.0 +00.2	55 21.0 +02.0	S	22 01.9 -00.5	320 10.5 -25.4	N	10 55.1 +12.2	18			
19	106 16.9 -00.3	S	23 15.2 +00.1	70 23.0 +02.1	S	22 01.4 -00.6	334 45.1 -25.5	N	11 07.3 +12.2	19			
20	121 16.6 -00.3	S	23 15.3 +00.1	85 25.1 +02.1	S	22 00.8 -00.5	349 19.6 -25.5	N	11 19.5 +12.1	20			
21	136 16.3 -00.3	S	23 15.4 +00.2	100 27.2 +02.1	S	22 00.3 -00.5	3 54.1 -25.6	N	11 31.6 +12.1	21			
22	151 16.0 -00.3	S	23 15.6 +00.1	115 29.3 +02.1	S	21 59.8 -00.5	18 28.5 -25.6	N	11 43.7 +12.1	22			
23	166 15.7 -00.3	S	23 15.7 +00.1	130 31.4 +02.1	S	21 59.3 -00.6	33 02.9 -25.6	N	11 55.8 +12.0	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 098° 098° 098° 098° 098° 097° Greenwich Culmination Time: 11:54				UT 02 06 10 14 18 22 SD 00'4 00'4 00'4 00'4 00'4 00'4 HP 00'4 00'4 00'4 00'4 00'4 00'4 SHA 062° 062° 062° 062° 062° 062° Greenwich Culmination Time: 14:19				UT 02 06 10 14 18 22 SD 14'9 14'9 14'9 14'9 14'8 14'8 HP 54'8 54'7 54'6 54'6 54'5 54'4 SHA 334° 332° 330° 328° 327° 325° Greenwich Culmination Time: 20:43					
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	204 37.4 +00.7	S	20 10.7 +00.4	113 00.8 +02.1	S	13 22.0 -00.2	130 07.4 +02.2	S	18 30.2 +00.0	00			
01	219 38.1 +00.6	S	20 11.1 +00.3	128 02.9 +02.0	S	13 21.8 -00.1	145 09.6 +02.2	S	18 30.2 -00.1	01			
02	234 38.7 +00.7	S	20 11.4 +00.4	143 04.9 +02.1	S	13 21.7 -00.2	160 11.8 +02.2	S	18 30.1 +00.0	02			
03	249 39.4 +00.6	S	20 11.8 +00.4	158 07.0 +02.1	S	13 21.5 -00.1	175 14.0 +02.3	S	18 30.1 -00.1	03			
04	264 40.0 +00.7	S	20 12.2 +00.4	173 09.1 +02.1	S	13 21.4 -00.2	190 16.3 +02.2	S	18 30.0 -00.1	04			
05	279 40.7 +00.6	S	20 12.6 +00.4	188 11.2 +02.0	S	13 21.2 -00.1	205 18.5 +02.2	S	18 29.9 +00.0	05			
06	294 41.3 +00.7	S	20 13.0 +00.4	203 13.2 +02.1	S	13 21.1 -00.1	220 20.7 +02.2	S	18 29.9 -00.1	06			
07	309 42.0 +00.6	S	20 13.4 +00.4	218 15.3 +02.1	S	13 21.0 -00.2	235 22.9 +02.3	S	18 29.8 +00.0	07			
08	324 42.6 +00.7	S	20 13.8 +00.4	233 17.4 +02.0	S	13 20.8 -00.1	250 25.2 +02.2	S	18 29.8 -00.1	08			
09	339 43.3 +00.6	S	20 14.2 +00.4	248 19.4 +02.1	S	13 20.7 -00.2	265 27.4 +02.2	S	18 29.7 -00.1	09			
10	354 43.9 +00.7	S	20 14.6 +00.3	263 21.5 +02.1	S	13 20.5 -00.1	280 29.6 +02.3	S	18 29.6 +00.0	10			
11	9 44.6 +00.6	S	20 14.9 +00.4	278 23.6 +02.1	S	13 20.4 -00.2	295 31.9 +02.2	S	18 29.6 -00.1	11			
12	24 45.2 +00.7	S	20 15.3 +00.4	293 25.7 +02.0	S	13 20.2 -00.1	310 34.1 +02.2	S	18 29.5 -00.1	12			
13	39 45.9 +00.6	S	20 15.7 +00.4	308 27.7 +02.1	S	13 20.1 -00.2	325 36.3 +02.2	S	18 29.4 +00.0	13			
14	54 46.5 +00.7	S	20 16.1 +00.4	323 29.8 +02.1	S	13 19.9 -00.1	340 38.5 +02.3	S	18 29.4 -00.1	14			
15	69 47.2 +00.6	S	20 16.5 +00.4	338 31.9 +02.0	S	13 19.8 -00.1	355 40.8 +02.2	S	18 29.3 +00.0	15			
16	84 47.8 +00.7	S	20 16.9 +00.4	353 33.9 +02.1	S	13 19.7 -00.2	10 43.0 +02.2	S	18 29.3 -00.1	16			
17	99 48.5 +00.6	S	20 17.3 +00.3	8 36.0 +02.1	S	13 19.5 -00.1	25 45.2 +02.2	S	18 29.2 -00.1	17			
18	114 49.1 +00.6	S	20 17.6 +00.4	23 38.1 +02.0	S	13 19.4 -00.2	40 47.4 +02.3	S	18 29.1 +00.0	18			
19	129 49.7 +00.7	S	20 18.0 +00.4	38 40.1 +02.1	S	13 19.2 -00.1	55 49.7 +02.2	S	18 29.1 -00.1	19			
20	144 50.4 +00.6	S	20 18.4 +00.4	53 42.2 +02.1	S	13 19.1 -00.2	70 51.9 +02.2	S	18 29.0 -00.1	20			
21	159 51.0 +00.7	S	20 18.8 +00.4	68 44.3 +02.1	S	13 18.9 -00.1	85 54.1 +02.2	S	18 28.9 +00.0	21			
22	174 51.7 +00.6	S	20 19.2 +00.4	83 46.4 +02.0	S	13 18.8 -00.2	100 56.3 +02.3	S	18 28.9 -00.1	22			
23	189 52.3 +00.7	S	20 19.6 +00.4	98 48.4 +02.1	S	13 18.6 -00.1	115 58.6 +02.2	S	18 28.8 -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 122° 122° 121° 121° 121° 121° Greenwich Culmination Time: 10:21				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 030° 030° 030° 030° 030° 030° Greenwich Culmination Time: 16:25				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: 15:17					

UT	Sun				Venus				Moon				UT				
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec					
00	181 15.4 -00.3	S	23 15.8 +00.2	145 33.5 +02.1	S	21 58.7 -00.5	47 37.3 -25.6	N	12 07.8 +11.9	00							
01	196 15.1 -00.3	S	23 16.0 +00.1	160 35.6 +02.1	S	21 58.2 -00.5	62 11.7 -25.7	N	12 19.7 +11.9	01							
02	211 14.8 -00.3	S	23 16.1 +00.1	175 37.7 +02.1	S	21 57.7 -00.6	76 46.0 -25.7	N	12 31.6 +11.8	02							
03	226 14.5 -00.3	S	23 16.2 +00.2	190 39.8 +02.1	S	21 57.1 -00.5	91 20.3 -25.7	N	12 43.4 +11.8	03							
04	241 14.2 -00.3	S	23 16.4 +00.1	205 41.9 +02.1	S	21 56.6 -00.5	105 54.6 -25.8	N	12 55.2 +11.7	04							
05	256 13.9 -00.3	S	23 16.5 +00.1	220 44.0 +02.1	S	21 56.1 -00.5	120 28.8 -25.8	N	13 06.9 +11.7	05							
06	271 13.6 -00.3	S	23 16.6 +00.1	235 46.1 +02.1	S	21 55.6 -00.6	135 03.0 -25.8	N	13 18.6 +11.6	06							
07	286 13.3 -00.3	S	23 16.7 +00.2	250 48.2 +02.1	S	21 55.0 -00.5	149 37.2 -25.9	N	13 30.2 +11.5	07							
08	301 13.0 -00.3	S	23 16.9 +00.1	265 50.3 +02.2	S	21 54.5 -00.5	164 11.3 -25.9	N	13 41.7 +11.5	08							
09	316 12.7 -00.3	S	23 17.0 +00.1	280 52.5 +02.1	S	21 54.0 -00.6	178 45.4 -26.0	N	13 53.2 +11.5	09							
10	331 12.4 -00.3	S	23 17.1 +00.1	295 54.6 +02.2	S	21 53.4 -00.5	193 19.4 -26.0	N	14 04.7 +11.4	10							
11	346 12.1 -00.3	S	23 17.2 +00.1	310 56.8 +02.1	S	21 52.9 -00.5	207 53.4 -26.0	N	14 16.1 +11.3	11							
12	1 11.8 -00.3	S	23 17.3 +00.2	325 58.9 +02.1	S	21 52.4 -00.5	222 27.4 -26.1	N	14 27.4 +11.2	12							
13	16 11.5 -00.3	S	23 17.5 +00.1	341 01.0 +02.2	S	21 51.9 -00.6	237 01.3 -26.1	N	14 38.6 +11.2	13							
14	31 11.2 -00.3	S	23 17.6 +00.1	356 03.2 +02.2	S	21 51.3 -00.5	251 35.2 -26.1	N	14 49.8 +11.2	14							
15	46 10.9 -00.3	S	23 17.7 +00.1	11 05.4 +02.1	S	21 50.8 -00.5	266 09.1 -26.2	N	15 01.0 +11.0	15							
16	61 10.6 -00.3	S	23 17.8 +00.1	26 07.5 +02.2	S	21 50.3 -00.6	280 42.9 -26.2	N	15 12.0 +11.0	16							
17	76 10.3 -00.3	S	23 17.9 +00.1	41 09.7 +02.2	S	21 49.7 -00.5	295 16.7 -26.3	N	15 23.0 +11.0	17							
18	91 10.0 -00.3	S	23 18.0 +00.2	56 11.9 +02.1	S	21 49.2 -00.5	309 50.4 -26.3	N	15 34.0 +10.9	18							
19	106 09.7 -00.3	S	23 18.2 +00.1	71 14.0 +02.2	S	21 48.7 -00.5	324 24.1 -26.4	N	15 44.9 +10.8	19							
20	121 09.4 -00.3	S	23 18.3 +00.1	86 16.2 +02.2	S	21 48.2 -00.6	338 57.7 -26.4	N	15 55.7 +10.7	20							
21	136 09.1 -00.3	S	23 18.4 +00.1	101 18.4 +02.2	S	21 47.6 -00.5	353 31.3 -26.4	N	16 06.4 +10.7	21							
22	151 08.8 -00.3	S	23 18.5 +00.1	116 20.6 +02.2	S	21 47.1 -00.5	8 04.9 -26.5	N	16 17.1 +10.6	22							
23	166 08.5 -00.3	S	23 18.6 +00.1	131 22.8 +02.2	S	21 46.6 -00.6	22 38.4 -26.6	N	16 27.7 +10.5	23							
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT			
SD	16'2	16'2	16'3	16'3	16'3	16'3	SD	00'4	00'4	00'4	00'4	00'4	00'4	SD			
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'4	00'4	00'4	00'4	00'4	00'4	HP			
SHA	097°	097°	097°	097°	097°	096°	SHA	062°	062°	062°	062°	062°	062°	SHA			
Greenwich Culmination Time: 11:55						Greenwich Culmination Time: 14:15						Greenwich Culmination Time: 21:26					

UT	Mars				Jupiter				Saturn				UT				
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec					
00	204 53.0 +00.6	S	20 20.0 +00.3	113 50.5 +02.1	S	13 18.5 -00.2	131 00.8 +02.2	S	18 28.7 +00.0	00							
01	219 53.6 +00.7	S	20 20.3 +00.4	128 52.6 +02.0	S	13 18.3 -00.1	146 03.0 +02.3	S	18 28.7 -00.1	01							
02	234 54.3 +00.6	S	20 20.7 +00.4	143 54.6 +02.1	S	13 18.2 -00.1	161 05.3 +02.2	S	18 28.6 +00.0	02							
03	249 54.9 +00.6	S	20 21.1 +00.4	158 56.7 +02.1	S	13 18.1 -00.2	176 07.5 +02.2	S	18 28.6 -00.1	03							
04	264 55.5 +00.7	S	20 21.5 +00.4	173 58.8 +02.0	S	13 17.9 -00.1	191 09.7 +02.2	S	18 28.5 -00.1	04							
05	279 56.2 +00.6	S	20 21.9 +00.3	189 00.8 +02.1	S	13 17.8 -00.2	206 11.9 +02.3	S	18 28.4 +00.0	05							
06	294 56.8 +00.7	S	20 22.2 +00.4	204 02.9 +02.1	S	13 17.6 -00.1	221 14.2 +02.2	S	18 28.4 -00.1	06							
07	309 57.5 +00.6	S	20 22.6 +00.4	219 05.0 +02.0	S	13 17.5 -00.2	236 16.4 +02.2	S	18 28.3 -00.1	07							
08	324 58.1 +00.7	S	20 23.0 +00.4	234 07.0 +02.1	S	13 17.3 -00.1	251 18.6 +02.2	S	18 28.2 +00.0	08							
09	339 58.8 +00.6	S	20 23.4 +00.4	249 09.1 +02.1	S	13 17.2 -00.2	266 20.8 +02.3	S	18 28.2 -00.1	09							
10	354 59.4 +00.6	S	20 23.8 +00.4	264 11.2 +02.0	S	13 17.0 -00.1	281 23.1 +02.2	S	18 28.1 +00.0	10							
11	10 00.0 +00.7	S	20 24.2 +00.3	279 13.2 +02.1	S	13 16.9 -00.2	296 25.3 +02.2	S	18 28.1 -00.1	11							
12	25 00.7 +00.6	S	20 24.5 +00.4	294 15.3 +02.1	S	13 16.7 -00.1	311 27.5 +02.2	S	18 28.0 -00.1	12							
13	40 01.3 +00.7	S	20 24.9 +00.4	309 17.4 +02.0	S	13 16.6 -00.2	326 29.7 +02.3	S	18 27.9 +00.0	13							
14	55 02.0 +00.6	S	20 25.3 +00.4	324 19.4 +02.1	S	13 16.4 -00.1	341 32.0 +02.2	S	18 27.9 -00.1	14							
15	70 02.6 +00.6	S	20 25.7 +00.3	339 21.5 +02.1	S	13 16.3 -00.2	356 34.2 +02.2	S	18 27.8 -00.1	15							
16	85 03.2 +00.7	S	20 26.0 +00.4	354 23.6 +02.0	S	13 16.1 -00.1	11 36.4 +02.2	S	18 27.7 +00.0	16							
17	100 03.9 +00.6	S	20 26.4 +00.4	9 25.6 +02.1	S	13 16.0 -00.1	26 38.6 +02.2	S	18 27.7 -00.1	17							
18	115 04.5 +00.7	S	20 26.8 +00.4	24 27.7 +02.1	S	13 15.9 -00.2	41 40.8 +02.3	S	18 27.6 -00.1	18							
19	130 05.2 +00.6	S	20 27.2 +00.4	39 29.8 +02.0	S	13 15.7 -00.1	56 43.1 +02.2	S	18 27.5 +00.0	19							
20	145 05.8 +00.6	S	20 27.6 +00.3	54 31.8 +02.1	S	13 15.6 -00.2	71 45.3 +02.2	S	18 27.5 -00.1	20							
21	160 06.4 +00.7	S	20 27.9 +00.4	69 33.9 +02.0	S	13 15.4 -00.1	86 47.5 +02.2	S	18 27.4 +00.0	21							
22	175 07.1 +00.6	S	20 28.3 +00.4	84 35.9 +02.1	S	13 15.3 -00.2	101 49.7 +02.3	S	18 27.4 -00.1	22							
23	190 07.7 +00.7	S	20 28.7 +00.4	99 38.0 +02.1	S	13 15.1 -00.1	116 52.0 +02.2	S	18 27.3 -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	121°	121°	121°	121°	120°	120°	SHA	030°	030°	030°	030°	030°	030°	SHA			
Greenwich Culmination Time: 10:20						Greenwich Culmination Time: 16:22						Greenwich Culmination Time: 15:13					

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	181 08.2 -00.3	S	23 18.7 +00.1	146 25.0 +02.2	S	21 46.0 -00.5	37 11.8 -26.6	N	16 38.2 +10.5	00			
01	196 07.9 -00.3	S	23 18.8 +00.1	161 27.2 +02.2	S	21 45.5 -00.5	51 45.2 -26.6	N	16 48.7 +10.4	01			
02	211 07.6 -00.3	S	23 18.9 +00.2	176 29.4 +02.2	S	21 45.0 -00.5	66 18.6 -26.7	N	16 59.1 +10.3	02			
03	226 07.3 -00.3	S	23 19.1 +00.1	191 31.6 +02.2	S	21 44.5 -00.6	80 51.9 -26.7	N	17 09.4 +10.3	03			
04	241 07.0 -00.3	S	23 19.2 +00.1	206 33.8 +02.2	S	21 43.9 -00.5	95 25.2 -26.8	N	17 19.7 +10.2	04			
05	256 06.7 -00.3	S	23 19.3 +00.1	221 36.0 +02.2	S	21 43.4 -00.5	109 58.4 -26.8	N	17 29.9 +10.1	05			
06	271 06.4 -00.4	S	23 19.4 +00.1	236 38.2 +02.3	S	21 42.9 -00.6	124 31.6 -26.9	N	17 40.0 +10.0	06			
07	286 06.0 -00.3	S	23 19.5 +00.1	251 40.5 +02.2	S	21 42.3 -00.5	139 04.7 -26.9	N	17 50.0 +10.0	07			
08	301 05.7 -00.3	S	23 19.6 +00.1	266 42.7 +02.2	S	21 41.8 -00.5	153 37.8 -27.0	N	17 60.0 +09.9	08			
09	316 05.4 -00.3	S	23 19.7 +00.1	281 44.9 +02.3	S	21 41.3 -00.5	168 10.8 -27.0	N	18 09.9 +09.8	09			
10	331 05.1 -00.3	S	23 19.8 +00.1	296 47.2 +02.2	S	21 40.8 -00.6	182 43.8 -27.1	N	18 19.7 +09.7	10			
11	346 04.8 -00.3	S	23 19.9 +00.1	311 49.4 +02.3	S	21 40.2 -00.5	197 16.7 -27.1	N	18 29.4 +09.7	11			
12	1 04.5 -00.3	S	23 20.0 +00.1	326 51.7 +02.2	S	21 39.7 -00.5	211 49.6 -27.2	N	18 39.1 +09.5	12			
13	16 04.2 -00.3	S	23 20.1 +00.1	341 53.9 +02.3	S	21 39.2 -00.6	226 22.4 -27.2	N	18 48.6 +09.5	13			
14	31 03.9 -00.3	S	23 20.2 +00.1	356 56.2 +02.3	S	21 38.6 -00.5	240 55.2 -27.3	N	18 58.1 +09.4	14			
15	46 03.6 -00.3	S	23 20.3 +00.1	11 58.5 +02.2	S	21 38.1 -00.5	255 27.9 -27.3	N	19 07.5 +09.4	15			
16	61 03.3 -00.3	S	23 20.4 +00.1	27 00.7 +02.3	S	21 37.6 -00.5	270 00.6 -27.4	N	19 16.9 +09.2	16			
17	76 03.0 -00.3	S	23 20.5 +00.1	42 03.0 +02.3	S	21 37.1 -00.6	284 33.2 -27.4	N	19 26.1 +09.2	17			
18	91 02.7 -00.3	S	23 20.6 +00.1	57 05.3 +02.3	S	21 36.5 -00.5	299 05.8 -27.5	N	19 35.3 +09.1	18			
19	106 02.4 -00.3	S	23 20.7 +00.1	72 07.6 +02.2	S	21 36.0 -00.5	313 38.3 -27.6	N	19 44.4 +09.0	19			
20	121 02.1 -00.3	S	23 20.8 +00.1	87 09.8 +02.3	S	21 35.5 -00.6	328 10.7 -27.6	N	19 53.4 +08.9	20			
21	136 01.8 -00.3	S	23 20.9 +00.1	102 12.1 +02.3	S	21 34.9 -00.5	342 43.1 -27.6	N	20 02.3 +08.8	21			
22	151 01.5 -00.3	S	23 21.0 +00.1	117 14.4 +02.3	S	21 34.4 -00.5	357 15.5 -27.7	N	20 11.1 +08.7	22			
23	166 01.2 -00.3	S	23 21.1 +00.0	132 16.7 +02.3	S	21 33.9 -00.5	11 47.8 -27.8	N	20 19.8 +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 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'4 00'4 00'4 00'4 00'4 00'4			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 00'4 00'4 00'4 00'4 00'4 00'4			HP 54'1 54'1 54'1 54'0 54'0 54'0						
	SHA 096° 096° 096° 096° 095° 095°			SHA 062° 062° 062° 062° 061° 061°			SHA 311° 309° 307° 305° 304° 301°						
	Greenwich Culmination Time: 11:55			Greenwich Culmination Time: 14:12			Greenwich Culmination Time: 22:11						

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	205 08.4 +00.6	S	20 29.1 +00.3	114 40.1 +02.0	S	13 15.0 -00.2	131 54.2 +02.2	S	18 27.2 +00.0	00			
01	220 09.0 +00.6	S	20 29.4 +00.4	129 42.1 +02.1	S	13 14.8 -00.1	146 56.4 +02.2	S	18 27.2 -00.1	01			
02	235 09.6 +00.7	S	20 29.8 +00.4	144 44.2 +02.1	S	13 14.7 -00.2	161 58.6 +02.3	S	18 27.1 -00.1	02			
03	250 10.3 +00.6	S	20 30.2 +00.4	159 46.3 +02.0	S	13 14.5 -00.1	177 00.9 +02.2	S	18 27.0 +00.0	03			
04	265 10.9 +00.7	S	20 30.6 +00.3	174 48.3 +02.1	S	13 14.4 -00.2	192 03.1 +02.2	S	18 27.0 -00.1	04			
05	280 11.6 +00.6	S	20 30.9 +00.4	189 50.4 +02.1	S	13 14.2 -00.1	207 05.3 +02.2	S	18 26.9 -00.1	05			
06	295 12.2 +00.6	S	20 31.3 +00.4	204 52.5 +02.0	S	13 14.1 -00.2	222 07.5 +02.2	S	18 26.8 +00.0	06			
07	310 12.8 +00.7	S	20 31.7 +00.4	219 54.5 +02.1	S	13 13.9 -00.1	237 09.7 +02.3	S	18 26.8 -00.1	07			
08	325 13.5 +00.6	S	20 32.1 +00.3	234 56.6 +02.0	S	13 13.8 -00.2	252 12.0 +02.2	S	18 26.7 +00.0	08			
09	340 14.1 +00.6	S	20 32.4 +00.4	249 58.6 +02.1	S	13 13.6 -00.1	267 14.2 +02.2	S	18 26.7 -00.1	09			
10	355 14.7 +00.7	S	20 32.8 +00.4	265 00.7 +02.1	S	13 13.5 -00.2	282 16.4 +02.2	S	18 26.6 -00.1	10			
11	10 15.4 +00.6	S	20 33.2 +00.4	280 02.8 +02.0	S	13 13.3 -00.1	297 18.6 +02.3	S	18 26.5 +00.0	11			
12	25 16.0 +00.6	S	20 33.6 +00.3	295 04.8 +02.1	S	13 13.2 -00.2	312 20.9 +02.2	S	18 26.5 -00.1	12			
13	40 16.6 +00.7	S	20 33.9 +00.4	310 06.9 +02.1	S	13 13.0 -00.1	327 23.1 +02.2	S	18 26.4 -00.1	13			
14	55 17.3 +00.6	S	20 34.3 +00.4	325 09.0 +02.0	S	13 12.9 -00.2	342 25.3 +02.2	S	18 26.3 +00.0	14			
15	70 17.9 +00.7	S	20 34.7 +00.4	340 11.0 +02.1	S	13 12.7 -00.1	357 27.5 +02.2	S	18 26.3 -00.1	15			
16	85 18.6 +00.6	S	20 35.1 +00.3	355 13.1 +02.0	S	13 12.6 -00.2	12 29.7 +02.3	S	18 26.2 -00.1	16			
17	100 19.2 +00.6	S	20 35.4 +00.4	10 15.1 +02.1	S	13 12.4 -00.1	27 32.0 +02.2	S	18 26.1 +00.0	17			
18	115 19.8 +00.7	S	20 35.8 +00.4	25 17.2 +02.1	S	13 12.3 -00.2	42 34.2 +02.2	S	18 26.1 -00.1	18			
19	130 20.5 +00.6	S	20 36.2 +00.3	40 19.3 +02.0	S	13 12.1 -00.1	57 36.4 +02.2	S	18 26.0 -00.1	19			
20	145 21.1 +00.6	S	20 36.5 +00.4	55 21.3 +02.1	S	13 12.0 -00.2	72 38.6 +02.3	S	18 25.9 +00.0	20			
21	160 21.7 +00.7	S	20 36.9 +00.4	70 23.4 +02.0	S	13 11.8 -00.1	87 40.9 +02.2	S	18 25.9 -00.1	21			
22	175 22.4 +00.6	S	20 37.3 +00.3	85 25.4 +02.1	S	13 11.7 -00.2	102 43.1 +02.2	S	18 25.8 +00.0	22			
23	190 23.0 +00.6	S	20 37.6 +00.4	100 27.5 +02.1	S	13 11.5 -00.1	117 45.3 +02.2	S	18 25.8 -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 00'0 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 120° 120° 120° 120° 120° 120°			SHA 030° 030° 030° 030° 030° 030°			SHA 047° 047° 047° 047° 047° 047°						
	Greenwich Culmination Time: 10:19			Greenwich Culmination Time: 16:19			Greenwich Culmination Time: 15:10						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	181 00.9 -00.3	S	23 21.1 +00.1	147 19.0 +02.3	S	21 33.4 -00.6	26 20.0 -27.8	N	20 28.5 +08.6	00			
01	196 00.6 -00.3	S	23 21.2 +00.1	162 21.3 +02.3	S	21 32.8 -00.5	40 52.2 -27.9	N	20 37.1 +08.4	01			
02	211 00.3 -00.3	S	23 21.3 +00.1	177 23.6 +02.4	S	21 32.3 -00.5	55 24.3 -27.9	N	20 45.5 +08.4	02			
03	225 60.0 -00.3	S	23 21.4 +00.1	192 26.0 +02.3	S	21 31.8 -00.5	69 56.4 -28.0	N	20 53.9 +08.3	03			
04	240 59.7 -00.3	S	23 21.5 +00.1	207 28.3 +02.3	S	21 31.3 -00.6	84 28.4 -28.0	N	21 02.2 +08.2	04			
05	255 59.4 -00.3	S	23 21.6 +00.1	222 30.6 +02.3	S	21 30.7 -00.5	99 00.4 -28.1	N	21 10.4 +08.1	05			
06	270 59.1 -00.3	S	23 21.7 +00.1	237 32.9 +02.4	S	21 30.2 -00.5	113 32.3 -28.1	N	21 18.5 +08.1	06			
07	285 58.8 -00.3	S	23 21.8 +00.0	252 35.3 +02.3	S	21 29.7 -00.6	128 04.2 -28.2	N	21 26.6 +07.9	07			
08	300 58.5 -00.4	S	23 21.8 +00.1	267 37.6 +02.4	S	21 29.1 -00.5	142 36.0 -28.3	N	21 34.5 +07.8	08			
09	315 58.1 -00.3	S	23 21.9 +00.1	282 40.0 +02.3	S	21 28.6 -00.5	157 07.7 -28.3	N	21 42.3 +07.8	09			
10	330 57.8 -00.3	S	23 22.0 +00.1	297 42.3 +02.4	S	21 28.1 -00.5	171 39.4 -28.3	N	21 50.1 +07.6	10			
11	345 57.5 -00.3	S	23 22.1 +00.1	312 44.7 +02.3	S	21 27.6 -00.6	186 11.1 -28.4	N	21 57.7 +07.5	11			
12	0 57.2 -00.3	S	23 22.2 +00.1	327 47.0 +02.4	S	21 27.0 -00.5	200 42.7 -28.5	N	22 05.2 +07.5	12			
13	15 56.9 -00.3	S	23 22.3 +00.0	342 49.4 +02.3	S	21 26.5 -00.5	215 14.2 -28.5	N	22 12.7 +07.3	13			
14	30 56.6 -00.3	S	23 22.3 +00.1	357 51.7 +02.4	S	21 26.0 -00.5	229 45.7 -28.6	N	22 20.0 +07.3	14			
15	45 56.3 -00.3	S	23 22.4 +00.1	12 54.1 +02.4	S	21 25.5 -00.6	244 17.1 -28.6	N	22 27.3 +07.1	15			
16	60 56.0 -00.3	S	23 22.5 +00.1	27 56.5 +02.4	S	21 24.9 -00.5	258 48.5 -28.7	N	22 34.4 +07.1	16			
17	75 55.7 -00.3	S	23 22.6 +00.1	42 58.9 +02.4	S	21 24.4 -00.5	273 19.8 -28.7	N	22 41.5 +06.9	17			
18	90 55.4 -00.3	S	23 22.7 +00.0	58 01.3 +02.3	S	21 23.9 -00.5	287 51.1 -28.8	N	22 48.4 +06.9	18			
19	105 55.1 -00.3	S	23 22.7 +00.1	73 03.6 +02.4	S	21 23.4 -00.6	302 22.3 -28.8	N	22 55.3 +06.7	19			
20	120 54.8 -00.3	S	23 22.8 +00.1	88 06.0 +02.4	S	21 22.8 -00.5	316 53.5 -28.9	N	23 02.0 +06.7	20			
21	135 54.5 -00.3	S	23 22.9 +00.1	103 08.4 +02.4	S	21 22.3 -00.5	331 24.6 -29.0	N	23 08.7 +06.5	21			
22	150 54.2 -00.3	S	23 23.0 +00.0	118 10.8 +02.4	S	21 21.8 -00.6	345 55.6 -29.0	N	23 15.2 +06.5	22			
23	165 53.9 -00.3	S	23 23.0 +00.1	133 13.2 +02.5	S	21 21.2 -00.5	0 26.6 -29.0	N	23 21.7 +06.3	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	00'4 00'4 00'4 00'4 00'4 00'4			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	00'4 00'4 00'4 00'4 00'4 00'4			HP	54'0 54'0 54'0 54'0 53'9 53'9				
SHA	095° 095° 095° 095° 094° 094°			SHA	061° 061° 061° 061° 061° 061°			SHA	299° 297° 295° 293° 291° 289°				
	Greenwich Culmination Time: 11:56				Greenwich Culmination Time: 14:08				Greenwich Culmination Time: 22:58				

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	205 23.6 +00.7	S	20 38.0 +00.4	115 29.6 +02.0	S	13 11.4 -00.2	132 47.5 +02.2	S	18 25.7 -00.1	00			
01	220 24.3 +00.6	S	20 38.4 +00.4	130 31.6 +02.1	S	13 11.2 -00.1	147 49.7 +02.3	S	18 25.6 +00.0	01			
02	235 24.9 +00.6	S	20 38.8 +00.3	145 33.7 +02.0	S	13 11.1 -00.2	162 52.0 +02.2	S	18 25.6 -00.1	02			
03	250 25.5 +00.7	S	20 39.1 +00.4	160 35.7 +02.1	S	13 10.9 -00.1	177 54.2 +02.2	S	18 25.5 -00.1	03			
04	265 26.2 +00.6	S	20 39.5 +00.4	175 37.8 +02.0	S	13 10.8 -00.2	192 56.4 +02.2	S	18 25.4 +00.0	04			
05	280 26.8 +00.6	S	20 39.9 +00.3	190 39.8 +02.1	S	13 10.6 -00.1	207 58.6 +02.2	S	18 25.4 -00.1	05			
06	295 27.4 +00.7	S	20 40.2 +00.4	205 41.9 +02.1	S	13 10.5 -00.2	223 00.8 +02.3	S	18 25.3 -00.1	06			
07	310 28.1 +00.6	S	20 40.6 +00.4	220 44.0 +02.0	S	13 10.3 -00.1	238 03.1 +02.2	S	18 25.2 +00.0	07			
08	325 28.7 +00.6	S	20 41.0 +00.3	235 46.0 +02.1	S	13 10.2 -00.2	253 05.3 +02.2	S	18 25.2 -00.1	08			
09	340 29.3 +00.7	S	20 41.3 +00.4	250 48.1 +02.0	S	13 10.0 -00.1	268 07.5 +02.2	S	18 25.1 -00.1	09			
10	355 30.0 +00.6	S	20 41.7 +00.4	265 50.1 +02.1	S	13 09.9 -00.2	283 09.7 +02.2	S	18 25.0 +00.0	10			
11	10 30.6 +00.6	S	20 42.1 +00.3	280 52.2 +02.0	S	13 09.7 -00.1	298 11.9 +02.3	S	18 25.0 -00.1	11			
12	25 31.2 +00.7	S	20 42.4 +00.4	295 54.2 +02.1	S	13 09.6 -00.2	313 14.2 +02.2	S	18 24.9 -00.1	12			
13	40 31.9 +00.6	S	20 42.8 +00.4	310 56.3 +02.1	S	13 09.4 -00.1	328 16.4 +02.2	S	18 24.8 +00.0	13			
14	55 32.5 +00.6	S	20 43.2 +00.3	325 58.4 +02.0	S	13 09.3 -00.2	343 18.6 +02.2	S	18 24.8 -00.1	14			
15	70 33.1 +00.6	S	20 43.5 +00.4	341 00.4 +02.1	S	13 09.1 -00.1	358 20.8 +02.2	S	18 24.7 +00.0	15			
16	85 33.7 +00.7	S	20 43.9 +00.3	356 02.5 +02.0	S	13 09.0 -00.2	13 23.0 +02.3	S	18 24.7 -00.1	16			
17	100 34.4 +00.6	S	20 44.2 +00.4	11 04.5 +02.1	S	13 08.8 -00.1	28 25.3 +02.2	S	18 24.6 -00.1	17			
18	115 35.0 +00.6	S	20 44.6 +00.4	26 06.6 +02.0	S	13 08.7 -00.2	43 27.5 +02.2	S	18 24.5 +00.0	18			
19	130 35.6 +00.7	S	20 45.0 +00.3	41 08.6 +02.1	S	13 08.5 -00.1	58 29.7 +02.2	S	18 24.5 -00.1	19			
20	145 36.3 +00.6	S	20 45.3 +00.4	56 10.7 +02.1	S	13 08.4 -00.2	73 31.9 +02.2	S	18 24.4 -00.1	20			
21	160 36.9 +00.6	S	20 45.7 +00.4	71 12.8 +02.0	S	13 08.2 -00.1	88 34.1 +02.3	S	18 24.3 +00.0	21			
22	175 37.5 +00.6	S	20 46.1 +00.3	86 14.8 +02.1	S	13 08.1 -00.2	103 36.4 +02.2	S	18 24.3 -00.1	22			
23	190 38.1 +00.7	S	20 46.4 +00.4	101 16.9 +02.0	S	13 07.9 -00.1	118 38.6 +02.2	S	18 24.2 -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	00'0 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	119° 119° 119° 119° 119° 119°			SHA	030° 030° 030° 030° 030° 030°			SHA	047° 047° 047° 047° 047° 047°				
	Greenwich Culmination Time: 10:17				Greenwich Culmination Time: 16:15				Greenwich Culmination Time: 15:06				

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	180	53.6 -00.3	S 23 23.1	+00.1	148	15.7 +02.4	S 21 20.7	-00.5	14	57.6 -29.1	N 23 28.0	+06.2	00
01	195	53.3 -00.3	S 23 23.2	+00.0	163	18.1 +02.4	S 21 20.2	-00.5	29	28.5 -29.1	N 23 34.2	+06.1	01
02	210	53.0 -00.3	S 23 23.2	+00.1	178	20.5 +02.4	S 21 19.7	-00.6	43	59.4 -29.2	N 23 40.3	+06.1	02
03	225	52.7 -00.4	S 23 23.3	+00.1	193	22.9 +02.5	S 21 19.1	-00.5	58	30.2 -29.3	N 23 46.4	+05.9	03
04	240	52.3 -00.3	S 23 23.4	+00.0	208	25.4 +02.4	S 21 18.6	-00.5	73	00.9 -29.3	N 23 52.3	+05.8	04
05	255	52.0 -00.3	S 23 23.4	+00.1	223	27.8 +02.4	S 21 18.1	-00.5	87	31.6 -29.3	N 23 58.1	+05.6	05
06	270	51.7 -00.3	S 23 23.5	+00.1	238	30.2 +02.5	S 21 17.6	-00.6	102	02.3 -29.4	N 24 03.7	+05.6	06
07	285	51.4 -00.3	S 23 23.6	+00.0	253	32.7 +02.4	S 21 17.0	-00.5	116	32.9 -29.4	N 24 09.3	+05.5	07
08	300	51.1 -00.3	S 23 23.6	+00.1	268	35.1 +02.5	S 21 16.5	-00.5	131	03.5 -29.5	N 24 14.8	+05.4	08
09	315	50.8 -00.3	S 23 23.7	+00.1	283	37.6 +02.4	S 21 16.0	-00.5	145	34.0 -29.6	N 24 20.2	+05.2	09
10	330	50.5 -00.3	S 23 23.8	+00.0	298	40.0 +02.5	S 21 15.5	-00.6	160	04.4 -29.5	N 24 25.4	+05.1	10
11	345	50.2 -00.3	S 23 23.8	+00.1	313	42.5 +02.5	S 21 14.9	-00.5	174	34.9 -29.7	N 24 30.5	+05.1	11
12	0	49.9 -00.3	S 23 23.9	+00.1	328	45.0 +02.4	S 21 14.4	-00.5	189	05.2 -29.6	N 24 35.6	+04.9	12
13	15	49.6 -00.3	S 23 24.0	+00.0	343	47.4 +02.5	S 21 13.9	-00.5	203	35.6 -29.7	N 24 40.5	+04.8	13
14	30	49.3 -00.3	S 23 24.0	+00.1	358	49.9 +02.5	S 21 13.4	-00.6	218	05.9 -29.8	N 24 45.3	+04.6	14
15	45	49.0 -00.3	S 23 24.1	+00.0	13	52.4 +02.5	S 21 12.8	-00.5	232	36.1 -29.8	N 24 49.9	+04.6	15
16	60	48.7 -00.3	S 23 24.1	+00.1	28	54.9 +02.5	S 21 12.3	-00.5	247	06.3 -29.8	N 24 54.5	+04.4	16
17	75	48.4 -00.3	S 23 24.2	+00.1	43	57.4 +02.5	S 21 11.8	-00.5	261	36.5 -29.9	N 24 58.9	+04.4	17
18	90	48.1 -00.4	S 23 24.3	+00.0	58	59.9 +02.5	S 21 11.3	-00.6	276	06.6 -29.9	N 25 03.3	+04.2	18
19	105	47.7 -00.3	S 23 24.3	+00.1	74	02.4 +02.5	S 21 10.7	-00.5	290	36.7 -30.0	N 25 07.5	+04.1	19
20	120	47.4 -00.3	S 23 24.4	+00.0	89	04.9 +02.5	S 21 10.2	-00.5	305	06.7 -30.0	N 25 11.6	+04.0	20
21	135	47.1 -00.3	S 23 24.4	+00.1	104	07.4 +02.5	S 21 09.7	-00.5	319	36.7 -30.1	N 25 15.6	+03.8	21
22	150	46.8 -00.3	S 23 24.5	+00.0	119	09.9 +02.5	S 21 09.2	-00.6	334	06.6 -30.0	N 25 19.4	+03.8	22
23	165	46.5 -00.3	S 23 24.5	+00.1	134	12.4 +02.5	S 21 08.6	-00.5	348	36.6 -30.2	N 25 23.2	+03.6	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 00'4 00'4 00'4 00'4 00'4 00'4				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 00'4 00'5 00'5 00'5 00'5 00'5				HP 53'9 53'9 53'9 53'9 54'0 54'0				
	SHA 094° 094° 094° 093° 093° 093°				SHA 061° 061° 061° 061° 061° 061°				SHA 287° 285° 283° 281° 279° 276°				
	Greenwich Culmination Time: 11:56				Greenwich Culmination Time: 14:04				Greenwich Culmination Time: 23:47				

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	205	38.8 +00.6	S 20 46.8	+00.3	116	18.9 +02.1	S 13 07.8	-00.2	133	40.8 +02.2	S 18 24.1	+00.0	00
01	220	39.4 +00.6	S 20 47.1	+00.4	131	21.0 +02.0	S 13 07.6	-00.1	148	43.0 +02.2	S 18 24.1	-00.1	01
02	235	40.0 +00.7	S 20 47.5	+00.4	146	23.0 +02.1	S 13 07.5	-00.2	163	45.2 +02.2	S 18 24.0	-00.1	02
03	250	40.7 +00.6	S 20 47.9	+00.3	161	25.1 +02.0	S 13 07.3	-00.1	178	47.4 +02.3	S 18 23.9	+00.0	03
04	265	41.3 +00.6	S 20 48.2	+00.4	176	27.1 +02.1	S 13 07.2	-00.2	193	49.7 +02.2	S 18 23.9	-00.1	04
05	280	41.9 +00.6	S 20 48.6	+00.4	191	29.2 +02.0	S 13 07.0	-00.1	208	51.9 +02.2	S 18 23.8	-00.1	05
06	295	42.5 +00.7	S 20 49.0	+00.3	206	31.2 +02.1	S 13 06.9	-00.2	223	54.1 +02.2	S 18 23.7	+00.0	06
07	310	43.2 +00.6	S 20 49.3	+00.4	221	33.3 +02.0	S 13 06.7	-00.1	238	56.3 +02.2	S 18 23.7	-00.1	07
08	325	43.8 +00.6	S 20 49.7	+00.3	236	35.3 +02.1	S 13 06.6	-00.2	253	58.5 +02.3	S 18 23.6	-00.1	08
09	340	44.4 +00.6	S 20 50.0	+00.4	251	37.4 +02.1	S 13 06.4	-00.1	269	00.8 +02.2	S 18 23.5	+00.0	09
10	355	45.0 +00.7	S 20 50.4	+00.3	266	39.5 +02.0	S 13 06.3	-00.2	284	03.0 +02.2	S 18 23.5	-00.1	10
11	10	45.7 +00.6	S 20 50.7	+00.4	281	41.5 +02.1	S 13 06.1	-00.1	299	05.2 +02.2	S 18 23.4	-00.1	11
12	25	46.3 +00.6	S 20 51.1	+00.4	296	43.6 +02.0	S 13 06.0	-00.2	314	07.4 +02.2	S 18 23.3	+00.0	12
13	40	46.9 +00.7	S 20 51.5	+00.3	311	45.6 +02.1	S 13 05.8	-00.2	329	09.6 +02.2	S 18 23.3	-00.1	13
14	55	47.6 +00.6	S 20 51.8	+00.4	326	47.7 +02.0	S 13 05.6	-00.1	344	11.8 +02.3	S 18 23.2	-00.1	14
15	70	48.2 +00.6	S 20 52.2	+00.3	341	49.7 +02.1	S 13 05.5	-00.2	359	14.1 +02.2	S 18 23.1	+00.0	15
16	85	48.8 +00.6	S 20 52.5	+00.4	356	51.8 +02.0	S 13 05.3	-00.1	14	16.3 +02.2	S 18 23.1	-00.1	16
17	100	49.4 +00.7	S 20 52.9	+00.3	11	53.8 +02.1	S 13 05.2	-00.2	29	18.5 +02.2	S 18 23.0	+00.0	17
18	115	50.1 +00.6	S 20 53.2	+00.4	26	55.9 +02.0	S 13 05.0	-00.1	44	20.7 +02.2	S 18 23.0	-00.1	18
19	130	50.7 +00.6	S 20 53.6	+00.4	41	57.9 +02.1	S 13 04.9	-00.2	59	22.9 +02.2	S 18 22.9	-00.1	19
20	145	51.3 +00.6	S 20 54.0	+00.3	56	60.0 +02.0	S 13 04.7	-00.1	74	25.1 +02.3	S 18 22.8	+00.0	20
21	160	51.9 +00.6	S 20 54.3	+00.4	72	02.0 +02.1	S 13 04.6	-00.2	89	27.4 +02.2	S 18 22.8	-00.1	21
22	175	52.5 +00.7	S 20 54.7	+00.3	87	04.1 +02.0	S 13 04.4	-00.1	104	29.6 +02.2	S 18 22.7	-00.1	22
23	190	53.2 +00.6	S 20 55.0	+00.4	102	06.1 +02.1	S 13 04.3	-00.2	119	31.8 +02.2	S 18 22.6	+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 119° 119° 119° 118° 118° 118°				SHA 029° 029° 029° 029° 029° 029°				SHA 047° 047° 047° 047° 047° 047°				
	Greenwich Culmination Time: 10:16				Greenwich Culmination Time: 16:12				Greenwich Culmination Time: 15:03				

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> A: 51%				UT
	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	
00	180 46.2 -00.3	S 23 24.6 +00.0	149 14.9 +02.5	S 21 08.1 -00.5	3 06.4 -30.1	N 25 26.8 +03.5	00						
01	195 45.9 -00.3	S 23 24.6 +00.1	164 17.4 +02.6	S 21 07.6 -00.5	17 36.3 -30.2	N 25 30.3 +03.4	01						
02	210 45.6 -00.3	S 23 24.7 +00.0	179 20.0 +02.5	S 21 07.1 -00.6	32 06.1 -30.2	N 25 33.7 +03.3	02						
03	225 45.3 -00.3	S 23 24.7 +00.1	194 22.5 +02.5	S 21 06.5 -00.5	46 35.9 -30.3	N 25 37.0 +03.1	03						
04	240 45.0 -00.3	S 23 24.8 +00.0	209 25.0 +02.6	S 21 06.0 -00.5	61 05.6 -30.3	N 25 40.1 +03.0	04						
05	255 44.7 -00.3	S 23 24.8 +00.1	224 27.6 +02.5	S 21 05.5 -00.5	75 35.3 -30.3	N 25 43.1 +02.9	05						
06	270 44.4 -00.3	S 23 24.9 +00.0	239 30.1 +02.6	S 21 05.0 -00.5	90 05.0 -30.4	N 25 46.0 +02.8	06						
07	285 44.1 -00.4	S 23 24.9 +00.1	254 32.7 +02.6	S 21 04.5 -00.6	104 34.6 -30.3	N 25 48.8 +02.6	07						
08	300 43.7 -00.3	S 23 25.0 +00.0	269 35.3 +02.5	S 21 03.9 -00.5	119 04.3 -30.4	N 25 51.4 +02.6	08						
09	315 43.4 -00.3	S 23 25.0 +00.1	284 37.8 +02.6	S 21 03.4 -00.5	133 33.9 -30.5	N 25 54.0 +02.4	09						
10	330 43.1 -00.3	S 23 25.1 +00.0	299 40.4 +02.6	S 21 02.9 -00.5	148 03.4 -30.5	N 25 56.4 +02.3	10						
11	345 42.8 -00.3	S 23 25.1 +00.0	314 43.0 +02.5	S 21 02.4 -00.6	162 32.9 -30.5	N 25 58.7 +02.1	11						
12	0 42.5 -00.3	S 23 25.1 +00.1	329 45.5 +02.6	S 21 01.8 -00.5	177 02.4 -30.5	N 26 00.8 +02.1	12						
13	15 42.2 -00.3	S 23 25.2 +00.0	344 48.1 +02.6	S 21 01.3 -00.5	191 31.9 -30.5	N 26 02.9 +01.9	13						
14	30 41.9 -00.3	S 23 25.2 +00.1	359 50.7 +02.6	S 21 00.8 -00.5	206 01.4 -30.6	N 26 04.8 +01.8	14						
15	45 41.6 -00.3	S 23 25.3 +00.0	14 53.3 +02.6	S 21 00.3 -00.5	220 30.8 -30.6	N 26 06.6 +01.6	15						
16	60 41.3 -00.3	S 23 25.3 +00.0	29 55.9 +02.6	S 20 59.8 -00.6	235 00.2 -30.6	N 26 08.2 +01.6	16						
17	75 41.0 -00.3	S 23 25.3 +00.1	44 58.5 +02.6	S 20 59.2 -00.5	249 29.6 -30.6	N 26 09.8 +01.4	17						
18	90 40.7 -00.3	S 23 25.4 +00.0	60 01.1 +02.6	S 20 58.7 -00.5	263 59.0 -30.7	N 26 11.2 +01.2	18						
19	105 40.4 -00.4	S 23 25.4 +00.1	75 03.7 +02.6	S 20 58.2 -00.5	278 28.3 -30.6	N 26 12.4 +01.2	19						
20	120 40.0 -00.3	S 23 25.5 +00.0	90 06.3 +02.6	S 20 57.7 -00.6	292 57.7 -30.7	N 26 13.6 +01.0	20						
21	135 39.7 -00.3	S 23 25.5 +00.0	105 08.9 +02.7	S 20 57.1 -00.5	307 27.0 -30.7	N 26 14.6 +00.9	21						
22	150 39.4 -00.3	S 23 25.5 +00.1	120 11.6 +02.6	S 20 56.6 -00.5	321 56.3 -30.7	N 26 15.5 +00.8	22						
23	165 39.1 -00.3	S 23 25.6 +00.0	135 14.2 +02.6	S 20 56.1 -00.5	336 25.6 -30.8	N 26 16.3 +00.7	23						
	UT 02 06 10 14 18 22 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 SHA 093° 093° 092° 092° 092° 092° Greenwich Culmination Time: 11:57	UT 02 06 10 14 18 22 SD 00'4 00'4 00'4 00'4 00'4 00'4 HP 00'5 00'5 00'5 00'5 00'5 00'5 SHA 061° 061° 061° 061° 061° 061° Greenwich Culmination Time: 14:00	UT 02 06 10 14 18 22 SD 14'7 14'7 14'7 14'7 14'7 14'7 HP 54'0 54'0 54'0 54'0 54'1 54'1 SHA 274° 272° 270° 268° 265° 263° Greenwich Culmination Time: -1:00										
UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	
00	205 53.8 +00.6	S 20 55.4 +00.3	117 08.2 +02.0	S 13 04.1 -00.1	134 34.0 +02.2	S 18 22.6 -00.1	00						
01	220 54.4 +00.6	S 20 55.7 +00.4	132 10.2 +02.1	S 13 04.0 -00.2	149 36.2 +02.2	S 18 22.5 -00.1	01						
02	235 55.0 +00.7	S 20 56.1 +00.3	147 12.3 +02.0	S 13 03.8 -00.1	164 38.4 +02.3	S 18 22.4 +00.0	02						
03	250 55.7 +00.6	S 20 56.4 +00.4	162 14.3 +02.1	S 13 03.7 -00.2	179 40.7 +02.2	S 18 22.4 -00.1	03						
04	265 56.3 +00.6	S 20 56.8 +00.3	177 16.4 +02.0	S 13 03.5 -00.2	194 42.9 +02.2	S 18 22.3 -00.1	04						
05	280 56.9 +00.6	S 20 57.1 +00.4	192 18.4 +02.1	S 13 03.3 -00.1	209 45.1 +02.2	S 18 22.2 +00.0	05						
06	295 57.5 +00.7	S 20 57.5 +00.4	207 20.5 +02.0	S 13 03.2 -00.2	224 47.3 +02.2	S 18 22.2 -00.1	06						
07	310 58.2 +00.6	S 20 57.9 +00.3	222 22.5 +02.1	S 13 03.0 -00.1	239 49.5 +02.2	S 18 22.1 -00.1	07						
08	325 58.8 +00.6	S 20 58.2 +00.4	237 24.6 +02.0	S 13 02.9 -00.2	254 51.7 +02.3	S 18 22.0 +00.0	08						
09	340 59.4 +00.6	S 20 58.6 +00.3	252 26.6 +02.1	S 13 02.7 -00.1	269 54.0 +02.2	S 18 22.0 -00.1	09						
10	356 00.0 +00.6	S 20 58.9 +00.4	267 28.7 +02.0	S 13 02.6 -00.2	284 56.2 +02.2	S 18 21.9 -00.1	10						
11	11 00.6 +00.7	S 20 59.3 +00.3	282 30.7 +02.1	S 13 02.4 -00.1	299 58.4 +02.2	S 18 21.8 +00.0	11						
12	26 01.3 +00.6	S 20 59.6 +00.4	297 32.8 +02.0	S 13 02.3 -00.2	315 00.6 +02.2	S 18 21.8 -00.1	12						
13	41 01.9 +00.6	S 20 60.0 +00.3	312 34.8 +02.1	S 13 02.1 -00.1	330 02.8 +02.2	S 18 21.7 -00.1	13						
14	56 02.5 +00.6	S 21 00.3 +00.4	327 36.9 +02.0	S 13 02.0 -00.2	345 05.0 +02.2	S 18 21.6 +00.0	14						
15	71 03.1 +00.6	S 21 00.7 +00.3	342 38.9 +02.0	S 13 01.8 -00.1	0 07.2 +02.3	S 18 21.6 -00.1	15						
16	86 03.7 +00.7	S 21 01.0 +00.4	357 40.9 +02.1	S 13 01.7 -00.2	15 09.5 +02.2	S 18 21.5 -00.1	16						
17	101 04.4 +00.6	S 21 01.4 +00.3	12 43.0 +02.0	S 13 01.5 -00.2	30 11.7 +02.2	S 18 21.4 +00.0	17						
18	116 05.0 +00.6	S 21 01.7 +00.4	27 45.0 +02.1	S 13 01.3 -00.1	45 13.9 +02.2	S 18 21.4 -00.1	18						
19	131 05.6 +00.6	S 21 02.1 +00.3	42 47.1 +02.0	S 13 01.2 -00.2	60 16.1 +02.2	S 18 21.3 -00.1	19						
20	146 06.2 +00.6	S 21 02.4 +00.4	57 49.1 +02.1	S 13 01.0 -00.1	75 18.3 +02.2	S 18 21.2 +00.0	20						
21	161 06.8 +00.7	S 21 02.8 +00.3	72 51.2 +02.0	S 13 00.9 -00.2	90 20.5 +02.2	S 18 21.2 -00.1	21						
22	176 07.5 +00.6	S 21 03.1 +00.3	87 53.2 +02.1	S 13 00.7 -00.1	105 22.7 +02.3	S 18 21.1 -00.1	22						
23	191 08.1 +00.6	S 21 03.4 +00.4	102 55.3 +02.0	S 13 00.6 -00.2	120 25.0 +02.2	S 18 21.0 +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 118° 118° 118° 118° 118° 117° Greenwich Culmination Time: 10:15	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 029° 029° 029° 029° 029° 029° Greenwich Culmination Time: 16:09	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: 14:59										

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	180 38.8 -00.3	S	23 25.6 +00.0	150 16.8 +02.7	S	20 55.6 -00.5	350 54.8 -30.7	N	26 17.0 +00.5	00			
01	195 38.5 -00.3	S	23 25.6 +00.1	165 19.5 +02.6	S	20 55.1 -00.6	5 24.1 -30.8	N	26 17.5 +00.4	01			
02	210 38.2 -00.3	S	23 25.7 +00.0	180 22.1 +02.6	S	20 54.5 -00.5	19 53.3 -30.7	N	26 17.9 +00.2	02			
03	225 37.9 -00.3	S	23 25.7 +00.0	195 24.7 +02.7	S	20 54.0 -00.5	34 22.6 -30.8	N	26 18.1 +00.2	03			
04	240 37.6 -00.3	S	23 25.7 +00.1	210 27.4 +02.6	S	20 53.5 -00.5	48 51.8 -30.8	N	26 18.3 +00.0	04			
05	255 37.3 -00.3	S	23 25.8 +00.0	225 30.0 +02.7	S	20 53.0 -00.5	63 21.0 -30.8	N	26 18.3 -00.1	05			
06	270 37.0 -00.3	S	23 25.8 +00.0	240 32.7 +02.7	S	20 52.5 -00.6	77 50.2 -30.8	N	26 18.2 -00.3	06			
07	285 36.7 -00.4	S	23 25.8 +00.0	255 35.4 +02.6	S	20 51.9 -00.5	92 19.4 -30.8	N	26 17.9 -00.4	07			
08	300 36.3 -00.3	S	23 25.8 +00.1	270 38.0 +02.7	S	20 51.4 -00.5	106 48.6 -30.8	N	26 17.5 -00.5	08			
09	315 36.0 -00.3	S	23 25.9 +00.0	285 40.7 +02.7	S	20 50.9 -00.5	121 17.8 -30.8	N	26 17.0 -00.6	09			
10	330 35.7 -00.3	S	23 25.9 +00.0	300 43.4 +02.7	S	20 50.4 -00.5	135 47.0 -30.8	N	26 16.4 -00.8	10			
11	345 35.4 -00.3	S	23 25.9 +00.0	315 46.1 +02.7	S	20 49.9 -00.6	150 16.2 -30.8	N	26 15.6 -00.8	11			
12	0 35.1 -00.3	S	23 25.9 +00.1	330 48.8 +02.7	S	20 49.3 -00.5	164 45.4 -30.8	N	26 14.8 -01.1	12			
13	15 34.8 -00.3	S	23 26.0 +00.0	345 51.5 +02.7	S	20 48.8 -00.5	179 14.6 -30.8	N	26 13.7 -01.1	13			
14	30 34.5 -00.3	S	23 26.0 +00.0	0 54.2 +02.7	S	20 48.3 -00.5	193 43.8 -30.8	N	26 12.6 -01.3	14			
15	45 34.2 -00.3	S	23 26.0 +00.0	15 56.9 +02.7	S	20 47.8 -00.5	208 13.0 -30.8	N	26 11.3 -01.4	15			
16	60 33.9 -00.3	S	23 26.0 +00.0	30 59.6 +02.7	S	20 47.3 -00.6	222 42.2 -30.8	N	26 09.9 -01.5	16			
17	75 33.6 -00.3	S	23 26.0 +00.1	46 02.3 +02.7	S	20 46.7 -00.5	237 11.4 -30.8	N	26 08.4 -01.7	17			
18	90 33.3 -00.4	S	23 26.1 +00.0	61 05.0 +02.7	S	20 46.2 -00.5	251 40.6 -30.8	N	26 06.7 -01.7	18			
19	105 32.9 -00.3	S	23 26.1 +00.0	76 07.7 +02.7	S	20 45.7 -00.5	266 09.8 -30.8	N	26 05.0 -02.0	19			
20	120 32.6 -00.3	S	23 26.1 +00.0	91 10.4 +02.8	S	20 45.2 -00.5	280 39.0 -30.7	N	26 03.0 -02.0	20			
21	135 32.3 -00.3	S	23 26.1 +00.0	106 13.2 +02.7	S	20 44.7 -00.5	295 08.3 -30.8	N	26 01.0 -02.2	21			
22	150 32.0 -00.3	S	23 26.1 +00.0	121 15.9 +02.7	S	20 44.2 -00.6	309 37.5 -30.7	N	25 58.8 -02.3	22			
23	165 31.7 -00.3	S	23 26.1 +00.0	136 18.6 +02.8	S	20 43.6 -00.5	324 06.8 -30.8	N	25 56.5 -02.4	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 00'4 00'4 00'4 00'4 00'4 00'4			SD 14'7 14'7 14'8 14'8 14'8 14'8						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'5 00'5 00'5 00'5 00'5 00'5			HP 54'1 54'1 54'2 54'2 54'2 54'3						
	SHA 092° 092° 091° 091° 091° 091°			SHA 061° 062° 062° 062° 062° 062°			SHA 261° 259° 257° 254° 252° 250°						
	Greenwich Culmination Time: 11:57			Greenwich Culmination Time: 13:56			Greenwich Culmination Time: 00:37						
UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	206 08.7 +00.6	S	21 03.8 +00.3	117 57.3 +02.1	S	13 00.4 -00.1	135 27.2 +02.2	S	18 21.0 -00.1	00			
01	221 09.3 +00.6	S	21 04.1 +00.4	132 59.4 +02.0	S	13 00.3 -00.2	150 29.4 +02.2	S	18 20.9 -00.1	01			
02	236 09.9 +00.6	S	21 04.5 +00.3	148 01.4 +02.1	S	13 00.1 -00.2	165 31.6 +02.2	S	18 20.8 +00.0	02			
03	251 10.5 +00.7	S	21 04.8 +00.4	163 03.5 +02.0	S	12 59.9 -00.1	180 33.8 +02.2	S	18 20.8 -00.1	03			
04	266 11.2 +00.6	S	21 05.2 +00.3	178 05.5 +02.0	S	12 59.8 -00.2	195 36.0 +02.2	S	18 20.7 -00.1	04			
05	281 11.8 +00.6	S	21 05.5 +00.4	193 07.5 +02.1	S	12 59.6 -00.1	210 38.2 +02.3	S	18 20.6 +00.0	05			
06	296 12.4 +00.6	S	21 05.9 +00.3	208 09.6 +02.0	S	12 59.5 -00.2	225 40.5 +02.2	S	18 20.6 -00.1	06			
07	311 13.0 +00.6	S	21 06.2 +00.4	223 11.6 +02.1	S	12 59.3 -00.1	240 42.7 +02.2	S	18 20.5 -00.1	07			
08	326 13.6 +00.6	S	21 06.6 +00.3	238 13.7 +02.0	S	12 59.2 -00.2	255 44.9 +02.2	S	18 20.4 +00.0	08			
09	341 14.2 +00.7	S	21 06.9 +00.3	253 15.7 +02.1	S	12 59.0 -00.1	270 47.1 +02.2	S	18 20.4 -00.1	09			
10	356 14.9 +00.6	S	21 07.2 +00.4	268 17.8 +02.0	S	12 58.9 -00.2	285 49.3 +02.2	S	18 20.3 -00.1	10			
11	11 15.5 +00.6	S	21 07.6 +00.3	283 19.8 +02.1	S	12 58.7 -00.2	300 51.5 +02.2	S	18 20.2 +00.0	11			
12	26 16.1 +00.6	S	21 07.9 +00.4	298 21.9 +02.0	S	12 58.5 -00.1	315 53.7 +02.3	S	18 20.2 -00.1	12			
13	41 16.7 +00.6	S	21 08.3 +00.3	313 23.9 +02.0	S	12 58.4 -00.2	330 56.0 +02.2	S	18 20.1 -00.1	13			
14	56 17.3 +00.6	S	21 08.6 +00.4	328 25.9 +02.1	S	12 58.2 -00.1	345 58.2 +02.2	S	18 20.0 +00.0	14			
15	71 17.9 +00.7	S	21 09.0 +00.3	343 28.0 +02.0	S	12 58.1 -00.2	1 00.4 +02.2	S	18 20.0 -00.1	15			
16	86 18.6 +00.6	S	21 09.3 +00.3	358 30.0 +02.1	S	12 57.9 -00.1	16 02.6 +02.2	S	18 19.9 -00.1	16			
17	101 19.2 +00.6	S	21 09.6 +00.4	13 32.1 +02.0	S	12 57.8 -00.2	31 04.8 +02.2	S	18 19.8 +00.0	17			
18	116 19.8 +00.6	S	21 10.0 +00.3	28 34.1 +02.1	S	12 57.6 -00.2	46 07.0 +02.2	S	18 19.8 -00.1	18			
19	131 20.4 +00.6	S	21 10.3 +00.4	43 36.2 +02.0	S	12 57.4 -00.1	61 09.2 +02.2	S	18 19.7 -00.1	19			
20	146 21.0 +00.6	S	21 10.7 +00.3	58 38.2 +02.0	S	12 57.3 -00.2	76 11.4 +02.3	S	18 19.6 +00.0	20			
21	161 21.6 +00.6	S	21 11.0 +00.3	73 40.2 +02.1	S	12 57.1 -00.1	91 13.7 +02.2	S	18 19.6 -00.1	21			
22	176 22.2 +00.6	S	21 11.3 +00.4	88 42.3 +02.0	S	12 57.0 -00.2	106 15.9 +02.2	S	18 19.5 -00.1	22			
23	191 22.8 +00.7	S	21 11.7 +00.3	103 44.3 +02.1	S	12 56.8 -00.1	121 18.1 +02.2	S	18 19.4 +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 117° 117° 117° 117° 117° 117°			SHA 029° 029° 029° 029° 029° 029°			SHA 047° 047° 047° 047° 047° 047°						
	Greenwich Culmination Time: 10:14			Greenwich Culmination Time: 16:05			Greenwich Culmination Time: 14:55						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> A: 57%				UT
	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	
00	180 31.4 -00.3	S 23 26.1 +00.1	151 21.4 +02.7	S 20 43.1 -00.5	338 36.0 -30.7	N 25 54.1 -02.5	00						
01	195 31.1 -00.3	S 23 26.2 +00.0	166 24.1 +02.8	S 20 42.6 -00.5	353 05.3 -30.7	N 25 51.6 -02.7	01						
02	210 30.8 -00.3	S 23 26.2 +00.0	181 26.9 +02.7	S 20 42.1 -00.5	7 34.6 -30.7	N 25 48.9 -02.8	02						
03	225 30.5 -00.3	S 23 26.2 +00.0	196 29.6 +02.8	S 20 41.6 -00.6	22 03.9 -30.7	N 25 46.1 -02.9	03						
04	240 30.2 -00.3	S 23 26.2 +00.0	211 32.4 +02.8	S 20 41.0 -00.5	36 33.2 -30.6	N 25 43.2 -03.1	04						
05	255 29.9 -00.4	S 23 26.2 +00.0	226 35.2 +02.7	S 20 40.5 -00.5	51 02.6 -30.7	N 25 40.1 -03.2	05						
06	270 29.5 -00.3	S 23 26.2 +00.0	241 37.9 +02.8	S 20 40.0 -00.5	65 31.9 -30.6	N 25 36.9 -03.3	06						
07	285 29.2 -00.3	S 23 26.2 +00.0	256 40.7 +02.8	S 20 39.5 -00.5	80 01.3 -30.6	N 25 33.6 -03.4	07						
08	300 28.9 -00.3	S 23 26.2 +00.0	271 43.5 +02.8	S 20 39.0 -00.5	94 30.7 -30.6	N 25 30.2 -03.6	08						
09	315 28.6 -00.3	S 23 26.2 +00.0	286 46.3 +02.8	S 20 38.5 -00.6	109 00.1 -30.5	N 25 26.6 -03.6	09						
10	330 28.3 -00.3	S 23 26.2 +00.0	301 49.1 +02.8	S 20 37.9 -00.5	123 29.6 -30.6	N 25 23.0 -03.8	10						
11	345 28.0 -00.3	S 23 26.2 +00.0	316 51.9 +02.8	S 20 37.4 -00.5	137 59.0 -30.5	N 25 19.2 -04.0	11						
12	0 27.7 -00.3	S 23 26.2 +00.0	331 54.7 +02.8	S 20 36.9 -00.5	152 28.5 -30.5	N 25 15.2 -04.0	12						
13	15 27.4 -00.3	S 23 26.2 +00.0	346 57.5 +02.8	S 20 36.4 -00.5	166 58.0 -30.5	N 25 11.2 -04.2	13						
14	30 27.1 -00.3	S 23 26.2 +00.0	2 00.3 +02.8	S 20 35.9 -00.5	181 27.5 -30.4	N 25 07.0 -04.3	14						
15	45 26.8 -00.4	S 23 26.2 +00.0	17 03.1 +02.8	S 20 35.4 -00.5	195 57.1 -30.4	N 25 02.7 -04.4	15						
16	60 26.4 -00.3	S 23 26.2 +00.0	32 05.9 +02.8	S 20 34.9 -00.6	210 26.7 -30.4	N 24 58.3 -04.6	16						
17	75 26.1 -00.3	S 23 26.2 +00.0	47 08.7 +02.9	S 20 34.3 -00.5	224 56.3 -30.3	N 24 53.7 -04.6	17						
18	90 25.8 -00.3	S 23 26.2 +00.0	62 11.6 +02.8	S 20 33.8 -00.5	239 26.0 -30.4	N 24 49.1 -04.8	18						
19	105 25.5 -00.3	S 23 26.2 +00.0	77 14.4 +02.8	S 20 33.3 -00.5	253 55.6 -30.3	N 24 44.3 -04.9	19						
20	120 25.2 -00.3	S 23 26.2 +00.0	92 17.2 +02.9	S 20 32.8 -00.5	268 25.3 -30.2	N 24 39.4 -05.0	20						
21	135 24.9 -00.3	S 23 26.2 +00.0	107 20.1 +02.8	S 20 32.3 -00.5	282 55.1 -30.3	N 24 34.4 -05.2	21						
22	150 24.6 -00.3	S 23 26.2 +00.0	122 22.9 +02.9	S 20 31.8 -00.5	297 24.8 -30.2	N 24 29.2 -05.3	22						
23	165 24.3 -00.3	S 23 26.2 +00.0	137 25.8 +02.8	S 20 31.3 -00.6	311 54.6 -30.2	N 24 23.9 -05.3	23						
	UT 02 06 10 14 18 22 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 SHA 091° 090° 090° 090° 090° 090° Greenwich Culmination Time: 11:58	UT 02 06 10 14 18 22 SD 00'4 00'4 00'4 00'4 00'5 00'5 HP 00'5 00'5 00'5 00'5 00'5 00'5 SHA 062° 062° 062° 062° 062° 062° Greenwich Culmination Time: 13:52	UT 02 06 10 14 18 22 SD 14'8 14'8 14'8 14'8 14'8 14'9 HP 54'3 54'4 54'4 54'4 54'5 54'5 SHA 248° 246° 243° 241° 239° 237° Greenwich Culmination Time: 01:28										
UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	
00	206 23.5 +00.6	S 21 12.0 +00.4	118 46.4 +02.0	S 12 56.7 -00.2	136 20.3 +02.2	S 18 19.4 -00.1	00						
01	221 24.1 +00.6	S 21 12.4 +00.3	133 48.4 +02.0	S 12 56.5 -00.1	151 22.5 +02.2	S 18 19.3 -00.1	01						
02	236 24.7 +00.6	S 21 12.7 +00.3	148 50.4 +02.1	S 12 56.4 -00.2	166 24.7 +02.2	S 18 19.2 +00.0	02						
03	251 25.3 +00.6	S 21 13.0 +00.4	163 52.5 +02.0	S 12 56.2 -00.2	181 26.9 +02.2	S 18 19.2 -00.1	03						
04	266 25.9 +00.6	S 21 13.4 +00.3	178 54.5 +02.1	S 12 56.0 -00.1	196 29.1 +02.2	S 18 19.1 -00.1	04						
05	281 26.5 +00.6	S 21 13.7 +00.4	193 56.6 +02.0	S 12 55.9 -00.2	211 31.3 +02.3	S 18 19.0 +00.0	05						
06	296 27.1 +00.6	S 21 14.1 +00.3	208 58.6 +02.0	S 12 55.7 -00.1	226 33.6 +02.2	S 18 19.0 -00.1	06						
07	311 27.7 +00.7	S 21 14.4 +00.3	224 00.6 +02.1	S 12 55.6 -00.2	241 35.8 +02.2	S 18 18.9 -00.1	07						
08	326 28.4 +00.6	S 21 14.7 +00.4	239 02.7 +02.0	S 12 55.4 -00.2	256 38.0 +02.2	S 18 18.8 +00.0	08						
09	341 29.0 +00.6	S 21 15.1 +00.3	254 04.7 +02.1	S 12 55.2 -00.1	271 40.2 +02.2	S 18 18.8 -00.1	09						
10	356 29.6 +00.6	S 21 15.4 +00.3	269 06.8 +02.0	S 12 55.1 -00.2	286 42.4 +02.2	S 18 18.7 -00.1	10						
11	11 30.2 +00.6	S 21 15.7 +00.4	284 08.8 +02.0	S 12 54.9 -00.1	301 44.6 +02.2	S 18 18.6 -00.1	11						
12	26 30.8 +00.6	S 21 16.1 +00.3	299 10.8 +02.1	S 12 54.8 -00.2	316 46.8 +02.2	S 18 18.5 +00.0	12						
13	41 31.4 +00.6	S 21 16.4 +00.3	314 12.9 +02.0	S 12 54.6 -00.1	331 49.0 +02.2	S 18 18.5 -00.1	13						
14	56 32.0 +00.6	S 21 16.7 +00.4	329 14.9 +02.1	S 12 54.5 -00.2	346 51.2 +02.3	S 18 18.4 -00.1	14						
15	71 32.6 +00.6	S 21 17.1 +00.3	344 17.0 +02.0	S 12 54.3 -00.2	1 53.5 +02.2	S 18 18.3 +00.0	15						
16	86 33.2 +00.6	S 21 17.4 +00.3	359 19.0 +02.0	S 12 54.1 -00.1	16 55.7 +02.2	S 18 18.3 -00.1	16						
17	101 33.8 +00.7	S 21 17.7 +00.4	14 21.0 +02.1	S 12 54.0 -00.2	31 57.9 +02.2	S 18 18.2 -00.1	17						
18	116 34.5 +00.6	S 21 18.1 +00.3	29 23.1 +02.0	S 12 53.8 -00.1	47 00.1 +02.2	S 18 18.1 +00.0	18						
19	131 35.1 +00.6	S 21 18.4 +00.3	44 25.1 +02.0	S 12 53.7 -00.2	62 02.3 +02.2	S 18 18.1 -00.1	19						
20	146 35.7 +00.6	S 21 18.7 +00.4	59 27.1 +02.1	S 12 53.5 -00.2	77 04.5 +02.2	S 18 18.0 -00.1	20						
21	161 36.3 +00.6	S 21 19.1 +00.3	74 29.2 +02.0	S 12 53.3 -00.1	92 06.7 +02.2	S 18 17.9 +00.0	21						
22	176 36.9 +00.6	S 21 19.4 +00.3	89 31.2 +02.1	S 12 53.2 -00.2	107 08.9 +02.2	S 18 17.9 -00.1	22						
23	191 37.5 +00.6	S 21 19.7 +00.4	104 33.3 +02.0	S 12 53.0 -00.1	122 11.1 +02.2	S 18 17.8 -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 117° 116° 116° 116° 116° 116° Greenwich Culmination Time: 10:14	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 029° 029° 029° 029° 029° 029° Greenwich Culmination Time: 16:02	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° 046° 046° 046° Greenwich Culmination Time: 14:52										

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	180 24.0 -00.3	S	23 26.2 +00.0	152 28.6 +02.9	S	20 30.7 -00.5	326 24.4 -30.1	N	24 18.6 -05.5	00			
01	195 23.7 -00.4	S	23 26.2 +00.0	167 31.5 +02.8	S	20 30.2 -00.5	340 54.3 -30.1	N	24 13.1 -05.7	01			
02	210 23.3 -00.3	S	23 26.2 +00.0	182 34.3 +02.9	S	20 29.7 -00.5	355 24.2 -30.1	N	24 07.4 -05.7	02			
03	225 23.0 -00.3	S	23 26.2 +00.0	197 37.2 +02.9	S	20 29.2 -00.5	9 54.1 -30.0	N	24 01.7 -05.9	03			
04	240 22.7 -00.3	S	23 26.2 +00.0	212 40.1 +02.9	S	20 28.7 -00.5	24 24.1 -30.0	N	23 55.8 -05.9	04			
05	255 22.4 -00.3	S	23 26.2 +00.0	227 43.0 +02.8	S	20 28.2 -00.5	38 54.1 -30.0	N	23 49.9 -06.1	05			
06	270 22.1 -00.3	S	23 26.2 +00.0	242 45.8 +02.9	S	20 27.7 -00.5	53 24.1 -29.9	N	23 43.8 -06.2	06			
07	285 21.8 -00.3	S	23 26.2 -00.1	257 48.7 +02.9	S	20 27.2 -00.6	67 54.2 -29.9	N	23 37.6 -06.4	07			
08	300 21.5 -00.3	S	23 26.1 +00.0	272 51.6 +02.9	S	20 26.6 -00.5	82 24.3 -29.9	N	23 31.2 -06.4	08			
09	315 21.2 -00.3	S	23 26.1 +00.0	287 54.5 +02.9	S	20 26.1 -00.5	96 54.4 -29.8	N	23 24.8 -06.5	09			
10	330 20.9 -00.3	S	23 26.1 +00.0	302 57.4 +02.9	S	20 25.6 -00.5	111 24.6 -29.8	N	23 18.3 -06.7	10			
11	345 20.6 -00.4	S	23 26.1 +00.0	318 00.3 +02.9	S	20 25.1 -00.5	125 54.8 -29.7	N	23 11.6 -06.8	11			
12	0 20.2 -00.3	S	23 26.1 +00.0	333 03.2 +03.0	S	20 24.6 -00.5	140 25.1 -29.7	N	23 04.8 -06.9	12			
13	15 19.9 -00.3	S	23 26.1 +00.0	348 06.2 +02.9	S	20 24.1 -00.5	154 55.4 -29.7	N	22 57.9 -07.0	13			
14	30 19.6 -00.3	S	23 26.1 -00.1	3 09.1 +02.9	S	20 23.6 -00.5	169 25.7 -29.6	N	22 50.9 -07.1	14			
15	45 19.3 -00.3	S	23 26.0 +00.0	18 12.0 +02.9	S	20 23.1 -00.5	183 56.1 -29.6	N	22 43.8 -07.2	15			
16	60 19.0 -00.3	S	23 26.0 +00.0	33 14.9 +03.0	S	20 22.6 -00.6	198 26.5 -29.5	N	22 36.6 -07.3	16			
17	75 18.7 -00.3	S	23 26.0 +00.0	48 17.9 +02.9	S	20 22.0 -00.5	212 57.0 -29.5	N	22 29.3 -07.5	17			
18	90 18.4 -00.3	S	23 26.0 +00.0	63 20.8 +02.9	S	20 21.5 -00.5	227 27.5 -29.5	N	22 21.8 -07.5	18			
19	105 18.1 -00.3	S	23 26.0 -00.1	78 23.7 +03.0	S	20 21.0 -00.5	241 58.0 -29.4	N	22 14.3 -07.7	19			
20	120 17.8 -00.3	S	23 25.9 +00.0	93 26.7 +02.9	S	20 20.5 -00.5	256 28.6 -29.4	N	22 06.6 -07.7	20			
21	135 17.5 -00.4	S	23 25.9 +00.0	108 29.6 +03.0	S	20 20.0 -00.5	270 59.2 -29.3	N	21 58.9 -07.9	21			
22	150 17.1 -00.3	S	23 25.9 +00.0	123 32.6 +03.0	S	20 19.5 -00.5	285 29.9 -29.3	N	21 51.0 -08.0	22			
23	165 16.8 -00.3	S	23 25.9 -00.1	138 35.6 +02.9	S	20 19.0 -00.5	300 00.6 -29.3	N	21 43.0 -08.1	23			
UT 02 06 10 14 18 22 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 SHA 090° 089° 089° 089° 089° 089° Greenwich Culmination Time: 11:58				UT 02 06 10 14 18 22 SD 00'5 00'5 00'5 00'5 00'5 00'5 HP 00'5 00'5 00'5 00'5 00'5 00'5 SHA 062° 062° 062° 062° 062° 062° Greenwich Culmination Time: 13:47				UT 02 06 10 14 18 22 SD 14'9 14'9 14'9 14'9 14'9 15'0 HP 54'6 54'7 54'7 54'8 54'8 54'9 SHA 235° 232° 230° 228° 226° 224° Greenwich Culmination Time: 02:19					
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	206 38.1 +00.6	S	21 20.1 +00.3	119 35.3 +02.0	S	12 52.9 -00.2	137 13.3 +02.3	S	18 17.7 +00.0	00			
01	221 38.7 +00.6	S	21 20.4 +00.3	134 37.3 +02.1	S	12 52.7 -00.1	152 15.6 +02.2	S	18 17.7 -00.1	01			
02	236 39.3 +00.6	S	21 20.7 +00.4	149 39.4 +02.0	S	12 52.6 -00.2	167 17.8 +02.2	S	18 17.6 -00.1	02			
03	251 39.9 +00.6	S	21 21.1 +00.3	164 41.4 +02.0	S	12 52.4 -00.2	182 20.0 +02.2	S	18 17.5 +00.0	03			
04	266 40.5 +00.6	S	21 21.4 +00.3	179 43.4 +02.1	S	12 52.2 -00.1	197 22.2 +02.2	S	18 17.5 -00.1	04			
05	281 41.1 +00.7	S	21 21.7 +00.4	194 45.5 +02.0	S	12 52.1 -00.2	212 24.4 +02.2	S	18 17.4 -00.1	05			
06	296 41.8 +00.6	S	21 22.1 +00.3	209 47.5 +02.1	S	12 51.9 -00.1	227 26.6 +02.2	S	18 17.3 +00.0	06			
07	311 42.4 +00.6	S	21 22.4 +00.3	224 49.6 +02.0	S	12 51.8 -00.2	242 28.8 +02.2	S	18 17.3 -00.1	07			
08	326 43.0 +00.6	S	21 22.7 +00.3	239 51.6 +02.0	S	12 51.6 -00.2	257 31.0 +02.2	S	18 17.2 -00.1	08			
09	341 43.6 +00.6	S	21 23.0 +00.4	254 53.6 +02.1	S	12 51.4 -00.1	272 33.2 +02.2	S	18 17.1 +00.0	09			
10	356 44.2 +00.6	S	21 23.4 +00.3	269 55.7 +02.0	S	12 51.3 -00.2	287 35.4 +02.2	S	18 17.1 -00.1	10			
11	11 44.8 +00.6	S	21 23.7 +00.3	284 57.7 +02.0	S	12 51.1 -00.1	302 37.6 +02.3	S	18 17.0 -00.1	11			
12	26 45.4 +00.6	S	21 24.0 +00.4	299 59.7 +02.1	S	12 51.0 -00.2	317 39.9 +02.2	S	18 16.9 -00.1	12			
13	41 46.0 +00.6	S	21 24.4 +00.3	315 01.8 +02.0	S	12 50.8 -00.2	332 42.1 +02.2	S	18 16.8 +00.0	13			
14	56 46.6 +00.6	S	21 24.7 +00.3	330 03.8 +02.0	S	12 50.6 -00.1	347 44.3 +02.2	S	18 16.8 -00.1	14			
15	71 47.2 +00.6	S	21 25.0 +00.3	345 05.8 +02.1	S	12 50.5 -00.2	2 46.5 +02.2	S	18 16.7 -00.1	15			
16	86 47.8 +00.6	S	21 25.3 +00.4	0 07.9 +02.0	S	12 50.3 -00.1	17 48.7 +02.2	S	18 16.6 +00.0	16			
17	101 48.4 +00.6	S	21 25.7 +00.3	15 09.9 +02.0	S	12 50.2 -00.2	32 50.9 +02.2	S	18 16.6 -00.1	17			
18	116 49.0 +00.6	S	21 26.0 +00.3	30 11.9 +02.1	S	12 50.0 -00.2	47 53.1 +02.2	S	18 16.5 -00.1	18			
19	131 49.6 +00.6	S	21 26.3 +00.3	45 14.0 +02.0	S	12 49.8 -00.1	62 55.3 +02.2	S	18 16.4 +00.0	19			
20	146 50.2 +00.6	S	21 26.6 +00.4	60 16.0 +02.0	S	12 49.7 -00.2	77 57.5 +02.2	S	18 16.4 -00.1	20			
21	161 50.8 +00.6	S	21 27.0 +00.3	75 18.0 +02.1	S	12 49.5 -00.1	92 59.7 +02.2	S	18 16.3 -00.1	21			
22	176 51.4 +00.6	S	21 27.3 +00.3	90 20.1 +02.0	S	12 49.4 -00.2	108 01.9 +02.2	S	18 16.2 +00.0	22			
23	191 52.0 +00.6	S	21 27.6 +00.3	105 22.1 +02.0	S	12 49.2 -00.2	123 04.1 +02.3	S	18 16.2 -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 116° 116° 116° 115° 115° 115° Greenwich Culmination Time: 10:13				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 029° 029° 029° 029° 029° 029° Greenwich Culmination Time: 15:59				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 046° 046° 046° 046° 046° 046° Greenwich Culmination Time: 14:48					

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	180 16.5 -00.3	S	23 25.8 +00.0	153 38.5 +03.0	S	20 18.5 -00.5	314 31.3 -29.2	N	21 34.9 -08.1	00			
01	195 16.2 -00.3	S	23 25.8 +00.0	168 41.5 +03.0	S	20 18.0 -00.5	329 02.1 -29.2	N	21 26.8 -08.3	01			
02	210 15.9 -00.3	S	23 25.8 -00.1	183 44.5 +03.0	S	20 17.5 -00.6	343 32.9 -29.1	N	21 18.5 -08.4	02			
03	225 15.6 -00.3	S	23 25.7 +00.0	198 47.5 +02.9	S	20 16.9 -00.5	358 03.8 -29.1	N	21 10.1 -08.5	03			
04	240 15.3 -00.3	S	23 25.7 +00.0	213 50.4 +03.0	S	20 16.4 -00.5	12 34.7 -29.0	N	21 01.6 -08.6	04			
05	255 15.0 -00.3	S	23 25.7 +00.0	228 53.4 +03.0	S	20 15.9 -00.5	27 05.7 -29.1	N	20 53.0 -08.7	05			
06	270 14.7 -00.3	S	23 25.7 -00.1	243 56.4 +03.0	S	20 15.4 -00.5	41 36.6 -28.9	N	20 44.3 -08.8	06			
07	285 14.4 -00.4	S	23 25.6 +00.0	258 59.4 +03.0	S	20 14.9 -00.5	56 07.7 -28.9	N	20 35.5 -08.9	07			
08	300 14.0 -00.3	S	23 25.6 +00.0	274 02.4 +03.0	S	20 14.4 -00.5	70 38.8 -28.9	N	20 26.6 -09.0	08			
09	315 13.7 -00.3	S	23 25.6 -00.1	289 05.4 +03.0	S	20 13.9 -00.5	85 09.9 -28.8	N	20 17.6 -09.1	09			
10	330 13.4 -00.3	S	23 25.5 +00.0	304 08.4 +03.1	S	20 13.4 -00.5	99 41.1 -28.8	N	20 08.5 -09.2	10			
11	345 13.1 -00.3	S	23 25.5 +00.0	319 11.5 +03.0	S	20 12.9 -00.5	114 12.3 -28.8	N	19 59.3 -09.3	11			
12	0 12.8 -00.3	S	23 25.5 -00.1	334 14.5 +03.0	S	20 12.4 -00.5	128 43.5 -28.7	N	19 50.0 -09.4	12			
13	15 12.5 -00.3	S	23 25.4 +00.0	349 17.5 +03.0	S	20 11.9 -00.5	143 14.8 -28.7	N	19 40.6 -09.5	13			
14	30 12.2 -00.3	S	23 25.4 -00.1	4 20.5 +03.1	S	20 11.4 -00.5	157 46.1 -28.6	N	19 31.1 -09.6	14			
15	45 11.9 -00.3	S	23 25.3 +00.0	19 23.6 +03.0	S	20 10.9 -00.5	172 17.5 -28.6	N	19 21.5 -09.6	15			
16	60 11.6 -00.3	S	23 25.3 +00.0	34 26.6 +03.1	S	20 10.4 -00.5	186 48.9 -28.5	N	19 11.9 -09.8	16			
17	75 11.3 -00.4	S	23 25.3 -00.1	49 29.7 +03.0	S	20 09.9 -00.5	201 20.4 -28.5	N	19 02.1 -09.9	17			
18	90 10.9 -00.3	S	23 25.2 +00.0	64 32.7 +03.1	S	20 09.4 -00.6	215 51.9 -28.5	N	18 52.2 -09.9	18			
19	105 10.6 -00.3	S	23 25.2 -00.1	79 35.8 +03.0	S	20 08.8 -00.5	230 23.4 -28.4	N	18 42.3 -10.1	19			
20	120 10.3 -00.3	S	23 25.1 +00.0	94 38.8 +03.1	S	20 08.3 -00.5	244 55.0 -28.4	N	18 32.2 -10.1	20			
21	135 10.0 -00.3	S	23 25.1 +00.0	109 41.9 +03.1	S	20 07.8 -00.5	259 26.6 -28.4	N	18 22.1 -10.2	21			
22	150 09.7 -00.3	S	23 25.1 -00.1	124 45.0 +03.0	S	20 07.3 -00.5	273 58.2 -28.3	N	18 11.9 -10.3	22			
23	165 09.4 -00.3	S	23 25.0 +00.0	139 48.0 +03.1	S	20 06.8 -00.5	288 29.9 -28.2	N	18 01.6 -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 16'3 16'3 16'3 16'3 16'3 16'3				SD 00'5 00'5 00'5 00'5 00'5 00'5				SD 15'0 15'0 15'0 15'0 15'1 15'1					
HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 00'5 00'5 00'5 00'5 00'5 00'5				HP 55'0 55'1 55'1 55'2 55'3 55'4					
SHA 088° 088° 088° 088° 088° 088°				SHA 062° 062° 062° 062° 062° 062°				SHA 222° 220° 218° 215° 213° 211°					
Greenwich Culmination Time: 11:59				Greenwich Culmination Time: 13:42				Greenwich Culmination Time: 03:08					
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	206 52.6 +00.6	S	21 27.9 +00.4	120 24.1 +02.1	S	12 49.0 -00.1	138 06.4 +02.2	S	18 16.1 -00.1	00			
01	221 53.2 +00.6	S	21 28.3 +00.3	135 26.2 +02.0	S	12 48.9 -00.2	153 08.6 +02.2	S	18 16.0 +00.0	01			
02	236 53.8 +00.6	S	21 28.6 +00.3	150 28.2 +02.0	S	12 48.7 -00.1	168 10.8 +02.2	S	18 16.0 -00.1	02			
03	251 54.4 +00.6	S	21 28.9 +00.3	165 30.2 +02.1	S	12 48.6 -00.2	183 13.0 +02.2	S	18 15.9 -00.1	03			
04	266 55.0 +00.6	S	21 29.2 +00.4	180 32.3 +02.0	S	12 48.4 -00.2	198 15.2 +02.2	S	18 15.8 +00.0	04			
05	281 55.6 +00.6	S	21 29.6 +00.3	195 34.3 +02.0	S	12 48.2 -00.1	213 17.4 +02.2	S	18 15.8 -00.1	05			
06	296 56.2 +00.6	S	21 29.9 +00.3	210 36.3 +02.1	S	12 48.1 -00.2	228 19.6 +02.2	S	18 15.7 -00.1	06			
07	311 56.8 +00.6	S	21 30.2 +00.3	225 38.4 +02.0	S	12 47.9 -00.1	243 21.8 +02.2	S	18 15.6 -00.1	07			
08	326 57.4 +00.6	S	21 30.5 +00.3	240 40.4 +02.0	S	12 47.8 -00.2	258 24.0 +02.2	S	18 15.5 +00.0	08			
09	341 58.0 +00.6	S	21 30.8 +00.4	255 42.4 +02.1	S	12 47.6 -00.2	273 26.2 +02.2	S	18 15.5 -00.1	09			
10	356 58.6 +00.6	S	21 31.2 +00.3	270 44.5 +02.0	S	12 47.4 -00.1	288 28.4 +02.2	S	18 15.4 -00.1	10			
11	11 59.2 +00.7	S	21 31.5 +00.3	285 46.5 +02.0	S	12 47.3 -00.2	303 30.6 +02.2	S	18 15.3 +00.0	11			
12	26 59.9 +00.6	S	21 31.8 +00.3	300 48.5 +02.0	S	12 47.1 -00.2	318 32.8 +02.2	S	18 15.3 -00.1	12			
13	42 00.5 +00.5	S	21 32.1 +00.3	315 50.5 +02.1	S	12 46.9 -00.1	333 35.0 +02.3	S	18 15.2 -00.1	13			
14	57 01.0 +00.6	S	21 32.4 +00.4	330 52.6 +02.0	S	12 46.8 -00.2	348 37.3 +02.2	S	18 15.1 +00.0	14			
15	72 01.6 +00.6	S	21 32.8 +00.3	345 54.6 +02.0	S	12 46.6 -00.1	3 39.5 +02.2	S	18 15.1 -00.1	15			
16	87 02.2 +00.6	S	21 33.1 +00.3	0 56.6 +02.1	S	12 46.5 -00.2	18 41.7 +02.2	S	18 15.0 -00.1	16			
17	102 02.8 +00.6	S	21 33.4 +00.3	15 58.7 +02.0	S	12 46.3 -00.2	33 43.9 +02.2	S	18 14.9 +00.0	17			
18	117 03.4 +00.6	S	21 33.7 +00.3	31 00.7 +02.0	S	12 46.1 -00.1	48 46.1 +02.2	S	18 14.9 -00.1	18			
19	132 04.0 +00.6	S	21 34.0 +00.3	46 02.7 +02.1	S	12 46.0 -00.2	63 48.3 +02.2	S	18 14.8 -00.1	19			
20	147 04.6 +00.6	S	21 34.3 +00.4	61 04.8 +02.0	S	12 45.8 -00.2	78 50.5 +02.2	S	18 14.7 -00.1	20			
21	162 05.2 +00.6	S	21 34.7 +00.3	76 06.8 +02.0	S	12 45.6 -00.1	93 52.7 +02.2	S	18 14.6 +00.0	21			
22	177 05.8 +00.6	S	21 35.0 +00.3	91 08.8 +02.0	S	12 45.5 -00.2	108 54.9 +02.2	S	18 14.6 -00.1	22			
23	192 06.4 +00.6	S	21 35.3 +00.3	106 10.8 +02.1	S	12 45.3 -00.1	123 57.1 +02.2	S	18 14.5 -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 00'0 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 115° 115° 115° 115° 115° 114°				SHA 029° 029° 029° 029° 029° 028°				SHA 046° 046° 046° 046° 046° 046°					
Greenwich Culmination Time: 10:12				Greenwich Culmination Time: 15:56				Greenwich Culmination Time: 14:45					

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	180 09.1 -00.3	S	23 25.0 -00.1	154 51.1 +03.1	S	20 06.3 -00.5	303 01.7 -28.3	N	17 51.2 -10.5	00			
01	195 08.8 -00.3	S	23 24.9 +00.0	169 54.2 +03.1	S	20 05.8 -00.5	317 33.4 -28.2	N	17 40.7 -10.6	01			
02	210 08.5 -00.3	S	23 24.9 -00.1	184 57.3 +03.1	S	20 05.3 -00.5	332 05.2 -28.1	N	17 30.1 -10.6	02			
03	225 08.2 -00.4	S	23 24.8 +00.0	200 00.4 +03.1	S	20 04.8 -00.5	346 37.1 -28.1	N	17 19.5 -10.8	03			
04	240 07.8 -00.3	S	23 24.8 -00.1	215 03.5 +03.1	S	20 04.3 -00.5	1 09.0 -28.1	N	17 08.7 -10.8	04			
05	255 07.5 -00.3	S	23 24.7 +00.0	230 06.6 +03.1	S	20 03.8 -00.5	15 40.9 -28.1	N	16 57.9 -10.9	05			
06	270 07.2 -00.3	S	23 24.7 -00.1	245 09.7 +03.1	S	20 03.3 -00.5	30 12.8 -28.0	N	16 47.0 -11.0	06			
07	285 06.9 -00.3	S	23 24.6 +00.0	260 12.8 +03.1	S	20 02.8 -00.5	44 44.8 -27.9	N	16 36.0 -11.1	07			
08	300 06.6 -00.3	S	23 24.6 -00.1	275 15.9 +03.1	S	20 02.3 -00.5	59 16.9 -28.0	N	16 24.9 -11.2	08			
09	315 06.3 -00.3	S	23 24.5 +00.0	290 19.0 +03.1	S	20 01.8 -00.5	73 48.9 -27.9	N	16 13.7 -11.2	09			
10	330 06.0 -00.3	S	23 24.5 -00.1	305 22.1 +03.1	S	20 01.3 -00.5	88 21.0 -27.8	N	16 02.5 -11.3	10			
11	345 05.7 -00.3	S	23 24.4 +00.0	320 25.2 +03.2	S	20 00.8 -00.5	102 53.2 -27.9	N	15 51.2 -11.4	11			
12	0 05.4 -00.3	S	23 24.4 -00.1	335 28.4 +03.1	S	20 00.3 -00.5	117 25.3 -27.8	N	15 39.8 -11.5	12			
13	15 05.1 -00.4	S	23 24.3 -00.1	350 31.5 +03.2	S	19 59.8 -00.5	131 57.5 -27.8	N	15 28.3 -11.6	13			
14	30 04.7 -00.3	S	23 24.2 +00.0	5 34.7 +03.1	S	19 59.3 -00.5	146 29.7 -27.7	N	15 16.7 -11.6	14			
15	45 04.4 -00.3	S	23 24.2 -00.1	20 37.8 +03.1	S	19 58.8 -00.5	161 02.0 -27.7	N	15 05.1 -11.7	15			
16	60 04.1 -00.3	S	23 24.1 +00.0	35 40.9 +03.2	S	19 58.3 -00.5	175 34.3 -27.7	N	14 53.4 -11.8	16			
17	75 03.8 -00.3	S	23 24.1 -00.1	50 44.1 +03.2	S	19 57.8 -00.5	190 06.6 -27.6	N	14 41.6 -11.9	17			
18	90 03.5 -00.3	S	23 24.0 +00.0	65 47.3 +03.1	S	19 57.3 -00.5	204 39.0 -27.7	N	14 29.7 -11.9	18			
19	105 03.2 -00.3	S	23 24.0 -00.1	80 50.4 +03.2	S	19 56.8 -00.5	219 11.3 -27.5	N	14 17.8 -12.0	19			
20	120 02.9 -00.3	S	23 23.9 -00.1	95 53.6 +03.2	S	19 56.3 -00.5	233 43.8 -27.6	N	14 05.8 -12.1	20			
21	135 02.6 -00.3	S	23 23.8 +00.0	110 56.8 +03.1	S	19 55.8 -00.5	248 16.2 -27.6	N	13 53.7 -12.2	21			
22	150 02.3 -00.3	S	23 23.8 -00.1	125 59.9 +03.2	S	19 55.3 -00.5	262 48.6 -27.5	N	13 41.5 -12.2	22			
23	165 02.0 -00.4	S	23 23.7 -00.1	141 03.1 +03.2	S	19 54.8 -00.5	277 21.1 -27.5	N	13 29.3 -12.3	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 00'5 00'5 00'5 00'5 00'5 00'5			SD 15'1 15'1 15'2 15'2 15'2 15'2						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'5 00'5 00'5 00'5 00'5 00'5			HP 55'5 55'6 55'7 55'8 55'9 56'0						
	SHA 087° 087° 087° 087° 087° 086°			SHA 062° 062° 062° 062° 062° 062°			SHA 209° 207° 205° 203° 201° 199°						
	Greenwich Culmination Time: 11:59			Greenwich Culmination Time: 13:37			Greenwich Culmination Time: 03:55						

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	207 07.0 +00.6	S	21 35.6 +00.3	121 12.9 +02.0	S	12 45.2 -00.2	138 59.3 +02.2	S	18 14.4 +00.0	00			
01	222 07.6 +00.6	S	21 35.9 +00.3	136 14.9 +02.0	S	12 45.0 -00.2	154 01.5 +02.2	S	18 14.4 -00.1	01			
02	237 08.2 +00.6	S	21 36.2 +00.4	151 16.9 +02.1	S	12 44.8 -00.1	169 03.7 +02.2	S	18 14.3 -00.1	02			
03	252 08.8 +00.6	S	21 36.6 +00.3	166 19.0 +02.0	S	12 44.7 -00.2	184 05.9 +02.2	S	18 14.2 +00.0	03			
04	267 09.4 +00.6	S	21 36.9 +00.3	181 21.0 +02.0	S	12 44.5 -00.2	199 08.1 +02.2	S	18 14.2 -00.1	04			
05	282 10.0 +00.6	S	21 37.2 +00.3	196 23.0 +02.0	S	12 44.3 -00.1	214 10.3 +02.2	S	18 14.1 -00.1	05			
06	297 10.6 +00.6	S	21 37.5 +00.3	211 25.0 +02.1	S	12 44.2 -00.2	229 12.5 +02.2	S	18 14.0 +00.0	06			
07	312 11.2 +00.6	S	21 37.8 +00.3	226 27.1 +02.0	S	12 44.0 -00.1	244 14.7 +02.3	S	18 14.0 -00.1	07			
08	327 11.8 +00.6	S	21 38.1 +00.3	241 29.1 +02.0	S	12 43.9 -00.2	259 17.0 +02.2	S	18 13.9 -00.1	08			
09	342 12.4 +00.6	S	21 38.4 +00.4	256 31.1 +02.0	S	12 43.7 -00.2	274 19.2 +02.2	S	18 13.8 -00.1	09			
10	357 13.0 +00.6	S	21 38.8 +00.3	271 33.1 +02.1	S	12 43.5 -00.1	289 21.4 +02.2	S	18 13.7 +00.0	10			
11	12 13.6 +00.6	S	21 39.1 +00.3	286 35.2 +02.0	S	12 43.4 -00.2	304 23.6 +02.2	S	18 13.7 -00.1	11			
12	27 14.2 +00.6	S	21 39.4 +00.3	301 37.2 +02.0	S	12 43.2 -00.2	319 25.8 +02.2	S	18 13.6 -00.1	12			
13	42 14.8 +00.6	S	21 39.7 +00.3	316 39.2 +02.1	S	12 43.0 -00.1	334 28.0 +02.2	S	18 13.5 +00.0	13			
14	57 15.4 +00.6	S	21 40.0 +00.3	331 41.3 +02.0	S	12 42.9 -00.2	349 30.2 +02.2	S	18 13.5 -00.1	14			
15	72 16.0 +00.6	S	21 40.3 +00.3	346 43.3 +02.0	S	12 42.7 -00.1	4 32.4 +02.2	S	18 13.4 -00.1	15			
16	87 16.6 +00.6	S	21 40.6 +00.3	1 45.3 +02.0	S	12 42.6 -00.2	19 34.6 +02.2	S	18 13.3 +00.0	16			
17	102 17.2 +00.6	S	21 40.9 +00.3	16 47.3 +02.1	S	12 42.4 -00.2	34 36.8 +02.2	S	18 13.3 -00.1	17			
18	117 17.8 +00.6	S	21 41.2 +00.4	31 49.4 +02.0	S	12 42.2 -00.1	49 39.0 +02.2	S	18 13.2 -00.1	18			
19	132 18.4 +00.5	S	21 41.6 +00.3	46 51.4 +02.0	S	12 42.1 -00.2	64 41.2 +02.2	S	18 13.1 -00.1	19			
20	147 18.9 +00.6	S	21 41.9 +00.3	61 53.4 +02.0	S	12 41.9 -00.2	79 43.4 +02.2	S	18 13.0 +00.0	20			
21	162 19.5 +00.6	S	21 42.2 +00.3	76 55.4 +02.1	S	12 41.7 -00.1	94 45.6 +02.2	S	18 13.0 -00.1	21			
22	177 20.1 +00.6	S	21 42.5 +00.3	91 57.5 +02.0	S	12 41.6 -00.2	109 47.8 +02.2	S	18 12.9 -00.1	22			
23	192 20.7 +00.6	S	21 42.8 +00.3	106 59.5 +02.0	S	12 41.4 -00.2	124 50.0 +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 114° 114° 114° 114° 114° 114°			SHA 028° 028° 028° 028° 028° 028°			SHA 046° 046° 046° 046° 046° 046°						
	Greenwich Culmination Time: 10:11			Greenwich Culmination Time: 15:52			Greenwich Culmination Time: 14:41						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	179 54.2 -00.3	S	23 21.8 -00.1	157 24.1 +03.3	S	19 42.4 -00.5	280 59.4 -27.2	N	08 03.0 -13.7	00			
01	194 53.9 -00.3	S	23 21.7 +00.0	172 27.4 +03.3	S	19 41.9 -00.4	295 32.2 -27.1	N	07 49.3 -13.9	01			
02	209 53.6 -00.3	S	23 21.7 -00.1	187 30.7 +03.3	S	19 41.5 -00.5	310 05.1 -27.1	N	07 35.4 -13.9	02			
03	224 53.3 -00.3	S	23 21.6 -00.1	202 34.0 +03.3	S	19 41.0 -00.5	324 38.0 -27.2	N	07 21.5 -13.9	03			
04	239 53.0 -00.3	S	23 21.5 -00.1	217 37.3 +03.3	S	19 40.5 -00.5	339 10.8 -27.1	N	07 07.6 -14.0	04			
05	254 52.7 -00.3	S	23 21.4 -00.1	232 40.6 +03.3	S	19 40.0 -00.5	353 43.7 -27.1	N	06 53.6 -14.0	05			
06	269 52.4 -00.3	S	23 21.3 -00.1	247 43.9 +03.3	S	19 39.5 -00.5	8 16.6 -27.2	N	06 39.6 -14.0	06			
07	284 52.1 -00.3	S	23 21.2 -00.1	262 47.2 +03.4	S	19 39.0 -00.5	22 49.4 -27.1	N	06 25.6 -14.2	07			
08	299 51.8 -00.3	S	23 21.1 -00.1	277 50.6 +03.3	S	19 38.5 -00.5	37 22.3 -27.2	N	06 11.4 -14.1	08			
09	314 51.5 -00.4	S	23 21.0 -00.1	292 53.9 +03.3	S	19 38.0 -00.5	51 55.1 -27.1	N	05 57.3 -14.2	09			
10	329 51.1 -00.3	S	23 20.9 +00.0	307 57.2 +03.4	S	19 37.5 -00.4	66 28.0 -27.2	N	05 43.1 -14.2	10			
11	344 50.8 -00.3	S	23 20.9 -00.1	323 00.6 +03.3	S	19 37.1 -00.5	81 00.8 -27.2	N	05 28.9 -14.3	11			
12	359 50.5 -00.3	S	23 20.8 -00.1	338 03.9 +03.4	S	19 36.6 -00.5	95 33.6 -27.1	N	05 14.6 -14.3	12			
13	14 50.2 -00.3	S	23 20.7 -00.1	353 07.3 +03.3	S	19 36.1 -00.5	110 06.5 -27.2	N	05 00.3 -14.4	13			
14	29 49.9 -00.3	S	23 20.6 -00.1	8 10.6 +03.4	S	19 35.6 -00.5	124 39.3 -27.2	N	04 45.9 -14.4	14			
15	44 49.6 -00.3	S	23 20.5 -00.1	23 14.0 +03.3	S	19 35.1 -00.5	139 12.1 -27.3	N	04 31.5 -14.4	15			
16	59 49.3 -00.3	S	23 20.4 -00.1	38 17.3 +03.4	S	19 34.6 -00.5	153 44.8 -27.2	N	04 17.1 -14.4	16			
17	74 49.0 -00.3	S	23 20.3 -00.1	53 20.7 +03.4	S	19 34.1 -00.5	168 17.6 -27.3	N	04 02.7 -14.5	17			
18	89 48.7 -00.3	S	23 20.2 -00.1	68 24.1 +03.3	S	19 33.6 -00.4	182 50.3 -27.2	N	03 48.2 -14.6	18			
19	104 48.4 -00.3	S	23 20.1 -00.1	83 27.4 +03.4	S	19 33.2 -00.5	197 23.1 -27.3	N	03 33.6 -14.5	19			
20	119 48.1 -00.3	S	23 20.0 -00.1	98 30.8 +03.4	S	19 32.7 -00.5	211 55.8 -27.3	N	03 19.1 -14.6	20			
21	134 47.8 -00.4	S	23 19.9 -00.1	113 34.2 +03.4	S	19 32.2 -00.5	226 28.5 -27.4	N	03 04.5 -14.6	21			
22	149 47.4 -00.3	S	23 19.8 -00.1	128 37.6 +03.4	S	19 31.7 -00.5	241 01.1 -27.3	N	02 49.9 -14.7	22			
23	164 47.1 -00.3	S	23 19.7 -00.1	143 41.0 +03.4	S	19 31.2 -00.5	255 33.8 -27.4	N	02 35.2 -14.7	23			
	UT 02 06 10 14 18 22 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 SHA 085° 085° 085° 085° 084° 084° Greenwich Culmination Time: 12:00		UT 02 06 10 14 18 22 SD 00'5 00'5 00'5 00'5 00'5 00'5 HP 00'5 00'5 00'5 00'5 00'5 00'5 SHA 063° 063° 063° 063° 063° 063° Greenwich Culmination Time: 13:27		UT 02 06 10 14 18 22 SD 15'5 15'5 15'5 15'6 15'6 15'6 HP 56'8 56'9 57'0 57'1 57'3 57'4 SHA 185° 183° 181° 179° 177° 175° Greenwich Culmination Time: 05:25								
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	207 35.5 +00.6	S	21 50.4 +00.3	122 50.1 +02.0	S	12 37.3 -00.2	140 45.1 +02.2	S	18 11.1 -00.1	00			
01	222 36.1 +00.6	S	21 50.7 +00.3	137 52.1 +02.0	S	12 37.1 -00.1	155 47.3 +02.2	S	18 11.0 -00.1	01			
02	237 36.7 +00.5	S	21 51.0 +00.3	152 54.1 +02.0	S	12 37.0 -00.2	170 49.5 +02.2	S	18 10.9 +00.0	02			
03	252 37.2 +00.6	S	21 51.3 +00.3	167 56.1 +02.0	S	12 36.8 -00.2	185 51.7 +02.2	S	18 10.9 -00.1	03			
04	267 37.8 +00.6	S	21 51.6 +00.3	182 58.1 +02.1	S	12 36.6 -00.1	200 53.9 +02.2	S	18 10.8 -00.1	04			
05	282 38.4 +00.6	S	21 51.9 +00.3	198 00.2 +02.0	S	12 36.5 -00.2	215 56.1 +02.2	S	18 10.7 +00.0	05			
06	297 39.0 +00.6	S	21 52.2 +00.3	213 02.2 +02.0	S	12 36.3 -00.2	230 58.3 +02.2	S	18 10.7 -00.1	06			
07	312 39.6 +00.6	S	21 52.5 +00.3	228 04.2 +02.0	S	12 36.1 -00.1	246 00.5 +02.2	S	18 10.6 -00.1	07			
08	327 40.2 +00.6	S	21 52.8 +00.3	243 06.2 +02.0	S	12 36.0 -00.2	261 02.7 +02.2	S	18 10.5 -00.1	08			
09	342 40.8 +00.5	S	21 53.1 +00.3	258 08.2 +02.0	S	12 35.8 -00.2	276 04.9 +02.2	S	18 10.4 +00.0	09			
10	357 41.3 +00.6	S	21 53.4 +00.3	273 10.2 +02.1	S	12 35.6 -00.1	291 07.1 +02.2	S	18 10.4 -00.1	10			
11	12 41.9 +00.6	S	21 53.7 +00.3	288 12.3 +02.0	S	12 35.5 -00.2	306 09.3 +02.2	S	18 10.3 -00.1	11			
12	27 42.5 +00.6	S	21 54.0 +00.3	303 14.3 +02.0	S	12 35.3 -00.2	321 11.5 +02.2	S	18 10.2 +00.0	12			
13	42 43.1 +00.6	S	21 54.3 +00.3	318 16.3 +02.0	S	12 35.1 -00.1	336 13.7 +02.2	S	18 10.2 -00.1	13			
14	57 43.7 +00.6	S	21 54.6 +00.3	333 18.3 +02.0	S	12 35.0 -00.2	351 15.9 +02.2	S	18 10.1 -00.1	14			
15	72 44.3 +00.6	S	21 54.9 +00.2	348 20.3 +02.1	S	12 34.8 -00.2	6 18.1 +02.2	S	18 10.0 -00.1	15			
16	87 44.9 +00.5	S	21 55.1 +00.3	3 22.4 +02.0	S	12 34.6 -00.1	21 20.3 +02.2	S	18 09.9 +00.0	16			
17	102 45.4 +00.6	S	21 55.4 +00.3	18 24.4 +02.0	S	12 34.5 -00.2	36 22.5 +02.2	S	18 09.9 -00.1	17			
18	117 46.0 +00.6	S	21 55.7 +00.3	33 26.4 +02.0	S	12 34.3 -00.2	51 24.7 +02.2	S	18 09.8 -00.1	18			
19	132 46.6 +00.6	S	21 56.0 +00.3	48 28.4 +02.0	S	12 34.1 -00.1	66 26.9 +02.2	S	18 09.7 +00.0	19			
20	147 47.2 +00.6	S	21 56.3 +00.3	63 30.4 +02.0	S	12 34.0 -00.2	81 29.1 +02.2	S	18 09.7 -00.1	20			
21	162 47.8 +00.6	S	21 56.6 +00.3	78 32.4 +02.1	S	12 33.8 -00.2	96 31.3 +02.2	S	18 09.6 -00.1	21			
22	177 48.4 +00.5	S	21 56.9 +00.3	93 34.5 +02.0	S	12 33.6 -00.2	111 33.5 +02.2	S	18 09.5 +00.0	22			
23	192 48.9 +00.6	S	21 57.2 +00.3	108 36.5 +02.0	S	12 33.4 -00.1	126 35.7 +02.2	S	18 09.5 -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 113° 113° 113° 112° 112° 112° Greenwich Culmination Time: 10:09		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 028° 028° 028° 028° 028° 028° Greenwich Culmination Time: 15:46		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 046° 046° 046° 046° 046° 046° Greenwich Culmination Time: 14:34								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	179 46.8 -00.3	S	23 19.6 -00.1	158 44.4 +03.4	S	19 30.7 -00.5	270 06.4 -27.4	N	02 20.5 -14.7	00			
01	194 46.5 -00.3	S	23 19.5 -00.1	173 47.8 +03.4	S	19 30.2 -00.4	284 39.0 -27.4	N	02 05.8 -14.7	01			
02	209 46.2 -00.3	S	23 19.4 -00.2	188 51.2 +03.4	S	19 29.8 -00.5	299 11.6 -27.5	N	01 51.1 -14.8	02			
03	224 45.9 -00.3	S	23 19.2 -00.1	203 54.6 +03.4	S	19 29.3 -00.5	313 44.1 -27.5	N	01 36.3 -14.8	03			
04	239 45.6 -00.3	S	23 19.1 -00.1	218 58.0 +03.4	S	19 28.8 -00.5	328 16.6 -27.5	N	01 21.5 -14.8	04			
05	254 45.3 -00.3	S	23 19.0 -00.1	234 01.4 +03.4	S	19 28.3 -00.5	342 49.1 -27.5	N	01 06.7 -14.8	05			
06	269 45.0 -00.3	S	23 18.9 -00.1	249 04.8 +03.4	S	19 27.8 -00.5	357 21.6 -27.6	N	00 51.9 -14.9	06			
07	284 44.7 -00.3	S	23 18.8 -00.1	264 08.2 +03.5	S	19 27.3 -00.4	11 54.0 -27.6	N	00 37.0 -14.9	07			
08	299 44.4 -00.3	S	23 18.7 -00.1	279 11.7 +03.4	S	19 26.9 -00.5	26 26.4 -27.7	N	00 22.1 -14.9	08			
09	314 44.1 -00.3	S	23 18.6 -00.1	294 15.1 +03.4	S	19 26.4 -00.5	40 58.7 -27.6	N	00 07.2 -14.9	09			
10	329 43.8 -00.3	S	23 18.5 -00.1	309 18.5 +03.5	S	19 25.9 -00.5	55 31.1 -27.8	S	00 07.7 +14.9	10			
11	344 43.5 -00.4	S	23 18.4 -00.1	324 22.0 +03.4	S	19 25.4 -00.5	70 03.3 -27.7	S	00 22.6 +15.0	11			
12	359 43.1 -00.3	S	23 18.3 -00.2	339 25.4 +03.5	S	19 24.9 -00.4	84 35.6 -27.8	S	00 37.6 +14.9	12			
13	14 42.8 -00.3	S	23 18.1 -00.1	354 28.9 +03.4	S	19 24.5 -00.5	99 07.8 -27.8	S	00 52.5 +15.0	13			
14	29 42.5 -00.3	S	23 18.0 -00.1	9 32.3 +03.5	S	19 24.0 -00.5	113 40.0 -27.9	S	01 07.5 +15.0	14			
15	44 42.2 -00.3	S	23 17.9 -00.1	24 35.8 +03.4	S	19 23.5 -00.5	128 12.1 -27.9	S	01 22.5 +15.0	15			
16	59 41.9 -00.3	S	23 17.8 -00.1	39 39.2 +03.5	S	19 23.0 -00.5	142 44.2 -28.0	S	01 37.5 +15.0	16			
17	74 41.6 -00.3	S	23 17.7 -00.1	54 42.7 +03.5	S	19 22.5 -00.4	157 16.2 -28.0	S	01 52.5 +15.0	17			
18	89 41.3 -00.3	S	23 17.6 -00.2	69 46.2 +03.5	S	19 22.1 -00.5	171 48.2 -28.1	S	02 07.5 +15.1	18			
19	104 41.0 -00.3	S	23 17.4 -00.1	84 49.7 +03.4	S	19 21.6 -00.5	186 20.1 -28.1	S	02 22.6 +15.0	19			
20	119 40.7 -00.3	S	23 17.3 -00.1	99 53.1 +03.5	S	19 21.1 -00.5	200 52.0 -28.2	S	02 37.6 +15.1	20			
21	134 40.4 -00.3	S	23 17.2 -00.1	114 56.6 +03.5	S	19 20.6 -00.5	215 23.8 -28.2	S	02 52.7 +15.0	21			
22	149 40.1 -00.3	S	23 17.1 -00.2	130 00.1 +03.5	S	19 20.1 -00.4	229 55.6 -28.3	S	03 07.7 +15.1	22			
23	164 39.8 -00.3	S	23 16.9 -00.1	145 03.6 +03.5	S	19 19.7 -00.5	244 27.3 -28.3	S	03 22.8 +15.0	23			
UT 02 06 10 14 18 22 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 SHA 084° 084° 084° 083° 083° 083° Greenwich Culmination Time: 12:01				UT 02 06 10 14 18 22 SD 00'5 00'5 00'5 00'5 00'5 00'5 HP 00'5 00'5 00'5 00'5 00'5 00'5 SHA 063° 063° 063° 063° 063° 063° Greenwich Culmination Time: 13:21				UT 02 06 10 14 18 22 SD 15'7 15'7 15'8 15'8 15'8 15'9 HP 57'5 57'7 57'8 58'0 58'1 58'2 SHA 173° 171° 169° 167° 165° 163° Greenwich Culmination Time: 06:10					
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	207 49.5 +00.6	S	21 57.5 +00.3	123 38.5 +02.0	S	12 33.3 -00.2	141 37.9 +02.2	S	18 09.4 -00.1	00			
01	222 50.1 +00.6	S	21 57.8 +00.3	138 40.5 +02.0	S	12 33.1 -00.2	156 40.1 +02.2	S	18 09.3 -00.1	01			
02	237 50.7 +00.6	S	21 58.1 +00.3	153 42.5 +02.0	S	12 32.9 -00.1	171 42.3 +02.2	S	18 09.2 +00.0	02			
03	252 51.3 +00.6	S	21 58.4 +00.3	168 44.5 +02.1	S	12 32.8 -00.2	186 44.5 +02.2	S	18 09.2 -00.1	03			
04	267 51.9 +00.5	S	21 58.7 +00.2	183 46.6 +02.0	S	12 32.6 -00.2	201 46.7 +02.2	S	18 09.1 -00.1	04			
05	282 52.4 +00.6	S	21 58.9 +00.3	198 48.6 +02.0	S	12 32.4 -00.1	216 48.9 +02.2	S	18 09.0 +00.0	05			
06	297 53.0 +00.6	S	21 59.2 +00.3	213 50.6 +02.0	S	12 32.3 -00.2	231 51.1 +02.2	S	18 09.0 -00.1	06			
07	312 53.6 +00.6	S	21 59.5 +00.3	228 52.6 +02.0	S	12 32.1 -00.2	246 53.3 +02.2	S	18 08.9 -00.1	07			
08	327 54.2 +00.6	S	21 59.8 +00.3	243 54.6 +02.0	S	12 31.9 -00.1	261 55.5 +02.2	S	18 08.8 -00.1	08			
09	342 54.8 +00.5	S	22 00.1 +00.3	258 56.6 +02.1	S	12 31.8 -00.2	276 57.7 +02.2	S	18 08.7 +00.0	09			
10	357 55.3 +00.6	S	22 00.4 +00.3	273 58.7 +02.0	S	12 31.6 -00.2	291 59.9 +02.2	S	18 08.7 -00.1	10			
11	12 55.9 +00.6	S	22 00.7 +00.3	289 00.7 +02.0	S	12 31.4 -00.1	307 02.1 +02.2	S	18 08.6 -00.1	11			
12	27 56.5 +00.6	S	22 01.0 +00.3	304 02.7 +02.0	S	12 31.3 -00.2	322 04.3 +02.2	S	18 08.5 -00.1	12			
13	42 57.1 +00.6	S	22 01.3 +00.2	319 04.7 +02.0	S	12 31.1 -00.2	337 06.5 +02.2	S	18 08.4 +00.0	13			
14	57 57.7 +00.5	S	22 01.5 +00.3	334 06.7 +02.0	S	12 30.9 -00.1	352 08.7 +02.2	S	18 08.4 -00.1	14			
15	72 58.2 +00.6	S	22 01.8 +00.3	349 08.7 +02.0	S	12 30.8 -00.2	7 10.9 +02.2	S	18 08.3 -00.1	15			
16	87 58.8 +00.6	S	22 02.1 +00.3	4 10.7 +02.1	S	12 30.6 -00.2	22 13.1 +02.2	S	18 08.2 +00.0	16			
17	102 59.4 +00.6	S	22 02.4 +00.3	19 12.8 +02.0	S	12 30.4 -00.1	37 15.3 +02.2	S	18 08.2 -00.1	17			
18	117 60.0 +00.6	S	22 02.7 +00.3	34 14.8 +02.0	S	12 30.3 -00.2	52 17.5 +02.2	S	18 08.1 -00.1	18			
19	133 00.6 +00.5	S	22 03.0 +00.3	49 16.8 +02.0	S	12 30.1 -00.2	67 19.7 +02.2	S	18 08.0 -00.1	19			
20	148 01.1 +00.6	S	22 03.3 +00.2	64 18.8 +02.0	S	12 29.9 -00.2	82 21.9 +02.2	S	18 07.9 +00.0	20			
21	163 01.7 +00.6	S	22 03.5 +00.3	79 20.8 +02.0	S	12 29.7 -00.1	97 24.1 +02.2	S	18 07.9 -00.1	21			
22	178 02.3 +00.6	S	22 03.8 +00.3	94 22.8 +02.0	S	12 29.6 -00.2	112 26.3 +02.2	S	18 07.8 -00.1	22			
23	193 02.9 +00.6	S	22 04.1 +00.3	109 24.8 +02.0	S	12 29.4 -00.2	127 28.5 +02.2	S	18 07.7 +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 112° 112° 112° 112° 112° 111° Greenwich Culmination Time: 10:08				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 028° 028° 028° 028° 028° 028° Greenwich Culmination Time: 15:43				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 046° 046° 046° 046° 046° 046° Greenwich Culmination Time: 14:31					

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	179 39.5 -00.3	S 23 16.8 -00.1	160 07.1 +03.5	S 19 19.2 -00.5	258 59.0 -28.4	S 03 37.8 +15.1	00						
01	194 39.2 -00.3	S 23 16.7 -00.1	175 10.6 +03.5	S 19 18.7 -00.5	273 30.6 -28.4	S 03 52.9 +15.1	01						
02	209 38.9 -00.4	S 23 16.6 -00.2	190 14.1 +03.5	S 19 18.2 -00.4	288 02.2 -28.5	S 04 08.0 +15.0	02						
03	224 38.5 -00.3	S 23 16.4 -00.1	205 17.6 +03.5	S 19 17.8 -00.5	302 33.7 -28.6	S 04 23.0 +15.1	03						
04	239 38.2 -00.3	S 23 16.3 -00.1	220 21.1 +03.5	S 19 17.3 -00.5	317 05.1 -28.6	S 04 38.1 +15.0	04						
05	254 37.9 -00.3	S 23 16.2 -00.1	235 24.6 +03.5	S 19 16.8 -00.5	331 36.5 -28.6	S 04 53.1 +15.1	05						
06	269 37.6 -00.3	S 23 16.1 -00.2	250 28.1 +03.6	S 19 16.3 -00.4	346 07.9 -28.8	S 05 08.2 +15.0	06						
07	284 37.3 -00.3	S 23 15.9 -00.1	265 31.7 +03.5	S 19 15.9 -00.5	0 39.1 -28.8	S 05 23.2 +15.1	07						
08	299 37.0 -00.3	S 23 15.8 -00.1	280 35.2 +03.5	S 19 15.4 -00.5	15 10.3 -28.9	S 05 38.3 +15.0	08						
09	314 36.7 -00.3	S 23 15.7 -00.2	295 38.7 +03.5	S 19 14.9 -00.5	29 41.4 -28.9	S 05 53.3 +15.0	09						
10	329 36.4 -00.3	S 23 15.5 -00.1	310 42.2 +03.6	S 19 14.4 -00.4	44 12.5 -29.0	S 06 08.3 +15.0	10						
11	344 36.1 -00.3	S 23 15.4 -00.1	325 45.8 +03.5	S 19 14.0 -00.5	58 43.5 -29.1	S 06 23.3 +15.0	11						
12	359 35.8 -00.3	S 23 15.3 -00.2	340 49.3 +03.6	S 19 13.5 -00.5	73 14.4 -29.2	S 06 38.3 +15.0	12						
13	14 35.5 -00.3	S 23 15.1 -00.1	355 52.9 +03.5	S 19 13.0 -00.5	87 45.2 -29.2	S 06 53.3 +14.9	13						
14	29 35.2 -00.3	S 23 15.0 -00.1	10 56.4 +03.6	S 19 12.5 -00.4	102 16.0 -29.3	S 07 08.2 +15.0	14						
15	44 34.9 -00.3	S 23 14.9 -00.2	25 60.0 +03.5	S 19 12.1 -00.5	116 46.7 -29.4	S 07 23.2 +14.9	15						
16	59 34.6 -00.3	S 23 14.7 -00.1	41 03.5 +03.6	S 19 11.6 -00.5	131 17.3 -29.4	S 07 38.1 +14.9	16						
17	74 34.3 -00.3	S 23 14.6 -00.1	56 07.1 +03.6	S 19 11.1 -00.4	145 47.9 -29.6	S 07 53.0 +14.9	17						
18	89 34.0 -00.3	S 23 14.5 -00.2	71 10.7 +03.5	S 19 10.7 -00.5	160 18.3 -29.6	S 08 07.9 +14.9	18						
19	104 33.7 -00.3	S 23 14.3 -00.1	86 14.2 +03.6	S 19 10.2 -00.5	174 48.7 -29.7	S 08 22.8 +14.8	19						
20	119 33.4 -00.3	S 23 14.2 -00.2	101 17.8 +03.6	S 19 09.7 -00.5	189 19.0 -29.8	S 08 37.6 +14.8	20						
21	134 33.1 -00.4	S 23 14.0 -00.1	116 21.4 +03.6	S 19 09.2 -00.4	203 49.2 -29.8	S 08 52.4 +14.8	21						
22	149 32.7 -00.3	S 23 13.9 -00.1	131 25.0 +03.6	S 19 08.8 -00.5	218 19.4 -30.0	S 09 07.2 +14.7	22						
23	164 32.4 -00.3	S 23 13.8 -00.2	146 28.6 +03.5	S 19 08.3 -00.5	232 49.4 -30.0	S 09 21.9 +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 16'3 16'3 16'3 16'3 16'3 16'3		SD 00'5 00'5 00'5 00'5 00'5 00'5		SD 15'9 15'9 16'0 16'0 16'1 16'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'5 00'5 00'5 00'5 00'5 00'5		HP 58'4 58'5 58'7 58'8 59'0 59'1								
	SHA 083° 083° 083° 082° 082° 082°		SHA 063° 064° 064° 064° 064° 064°		SHA 161° 159° 157° 155° 153° 151°								
	Greenwich Culmination Time: 12:01		Greenwich Culmination Time: 13:16		Greenwich Culmination Time: 06:57								
	Mars				Jupiter				Saturn				
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT
00	208 03.5 +00.5	S 22 04.4 +00.3	124 26.8 +02.1	S 12 29.2 -00.1	142 30.7 +02.2	S 18 07.7 -00.1	00						
01	223 04.0 +00.6	S 22 04.7 +00.3	139 28.9 +02.0	S 12 29.1 -00.2	157 32.9 +02.2	S 18 07.6 -00.1	01						
02	238 04.6 +00.6	S 22 05.0 +00.2	154 30.9 +02.0	S 12 28.9 -00.2	172 35.1 +02.2	S 18 07.5 -00.1	02						
03	253 05.2 +00.6	S 22 05.2 +00.3	169 32.9 +02.0	S 12 28.7 -00.1	187 37.3 +02.2	S 18 07.4 +00.0	03						
04	268 05.8 +00.5	S 22 05.5 +00.3	184 34.9 +02.0	S 12 28.6 -00.2	202 39.5 +02.2	S 18 07.4 -00.1	04						
05	283 06.3 +00.6	S 22 05.8 +00.3	199 36.9 +02.0	S 12 28.4 -00.2	217 41.7 +02.2	S 18 07.3 -00.1	05						
06	298 06.9 +00.6	S 22 06.1 +00.3	214 38.9 +02.0	S 12 28.2 -00.1	232 43.9 +02.2	S 18 07.2 +00.0	06						
07	313 07.5 +00.6	S 22 06.4 +00.3	229 40.9 +02.0	S 12 28.1 -00.2	247 46.1 +02.1	S 18 07.2 -00.1	07						
08	328 08.1 +00.5	S 22 06.7 +00.2	244 42.9 +02.1	S 12 27.9 -00.2	262 48.2 +02.2	S 18 07.1 -00.1	08						
09	343 08.6 +00.6	S 22 06.9 +00.3	259 45.0 +02.0	S 12 27.7 -00.2	277 50.4 +02.2	S 18 07.0 -00.1	09						
10	358 09.2 +00.6	S 22 07.2 +00.3	274 47.0 +02.0	S 12 27.5 -00.1	292 52.6 +02.2	S 18 06.9 +00.0	10						
11	13 09.8 +00.6	S 22 07.5 +00.3	289 49.0 +02.0	S 12 27.4 -00.2	307 54.8 +02.2	S 18 06.9 -00.1	11						
12	28 10.4 +00.6	S 22 07.8 +00.3	304 51.0 +02.0	S 12 27.2 -00.2	322 57.0 +02.2	S 18 06.8 -00.1	12						
13	43 11.0 +00.5	S 22 08.1 +00.2	319 53.0 +02.0	S 12 27.0 -00.1	337 59.2 +02.2	S 18 06.7 +00.0	13						
14	58 11.5 +00.6	S 22 08.3 +00.3	334 55.0 +02.0	S 12 26.9 -00.2	353 01.4 +02.2	S 18 06.7 -00.1	14						
15	73 12.1 +00.6	S 22 08.6 +00.3	349 57.0 +02.0	S 12 26.7 -00.2	8 03.6 +02.2	S 18 06.6 -00.1	15						
16	88 12.7 +00.6	S 22 08.9 +00.3	4 59.0 +02.0	S 12 26.5 -00.2	23 05.8 +02.2	S 18 06.5 -00.1	16						
17	103 13.3 +00.5	S 22 09.2 +00.2	20 01.0 +02.1	S 12 26.3 -00.1	38 08.0 +02.2	S 18 06.4 +00.0	17						
18	118 13.8 +00.6	S 22 09.4 +00.3	35 03.1 +02.0	S 12 26.2 -00.2	53 10.2 +02.2	S 18 06.4 -00.1	18						
19	133 14.4 +00.6	S 22 09.7 +00.3	50 05.1 +02.0	S 12 26.0 -00.2	68 12.4 +02.2	S 18 06.3 -00.1	19						
20	148 15.0 +00.5	S 22 10.0 +00.3	65 07.1 +02.0	S 12 25.8 -00.1	83 14.6 +02.2	S 18 06.2 -00.1	20						
21	163 15.5 +00.6	S 22 10.3 +00.2	80 09.1 +02.0	S 12 25.7 -00.2	98 16.8 +02.2	S 18 06.1 +00.0	21						
22	178 16.1 +00.6	S 22 10.5 +00.3	95 11.1 +02.0	S 12 25.5 -00.2	113 19.0 +02.2	S 18 06.1 -00.1	22						
23	193 16.7 +00.6	S 22 10.8 +00.3	110 13.1 +02.0	S 12 25.3 -00.1	128 21.2 +02.2	S 18 06.0 -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 111° 111° 111° 111° 111° 111°		SHA 028° 028° 028° 028° 028° 028°		SHA 046° 046° 046° 046° 046° 046°								
	Greenwich Culmination Time: 10:07		Greenwich Culmination Time: 15:40		Greenwich Culmination Time: 14:27								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	179 32.1 -00.3	S	23 13.6 -00.1	161 32.1 +03.6	S	19 07.8 -00.4	247 19.4 -30.1	S	09 36.7 +14.6	00			
01	194 31.8 -00.3	S	23 13.5 -00.2	176 35.7 +03.6	S	19 07.4 -00.5	261 49.3 -30.2	S	09 51.3 +14.7	01			
02	209 31.5 -00.3	S	23 13.3 -00.1	191 39.3 +03.6	S	19 06.9 -00.5	276 19.1 -30.3	S	10 06.0 +14.6	02			
03	224 31.2 -00.3	S	23 13.2 -00.2	206 42.9 +03.6	S	19 06.4 -00.4	290 48.8 -30.4	S	10 20.6 +14.6	03			
04	239 30.9 -00.3	S	23 13.0 -00.1	221 46.5 +03.6	S	19 06.0 -00.5	305 18.4 -30.5	S	10 35.2 +14.5	04			
05	254 30.6 -00.3	S	23 12.9 -00.2	236 50.1 +03.7	S	19 05.5 -00.5	319 47.9 -30.6	S	10 49.7 +14.5	05			
06	269 30.3 -00.3	S	23 12.7 -00.1	251 53.8 +03.6	S	19 05.0 -00.4	334 17.3 -30.7	S	11 04.2 +14.5	06			
07	284 30.0 -00.3	S	23 12.6 -00.2	266 57.4 +03.6	S	19 04.6 -00.5	348 46.6 -30.7	S	11 18.7 +14.4	07			
08	299 29.7 -00.3	S	23 12.4 -00.1	282 01.0 +03.6	S	19 04.1 -00.5	3 15.9 -30.9	S	11 33.1 +14.4	08			
09	314 29.4 -00.3	S	23 12.3 -00.2	297 04.6 +03.6	S	19 03.6 -00.4	17 45.0 -31.0	S	11 47.5 +14.3	09			
10	329 29.1 -00.3	S	23 12.1 -00.1	312 08.2 +03.7	S	19 03.2 -00.5	32 14.0 -31.0	S	12 01.8 +14.3	10			
11	344 28.8 -00.3	S	23 12.0 -00.2	327 11.9 +03.6	S	19 02.7 -00.5	46 43.0 -31.2	S	12 16.1 +14.2	11			
12	359 28.5 -00.3	S	23 11.8 -00.1	342 15.5 +03.7	S	19 02.2 -00.4	61 11.8 -31.3	S	12 30.3 +14.2	12			
13	14 28.2 -00.3	S	23 11.7 -00.2	357 19.2 +03.6	S	19 01.8 -00.5	75 40.5 -31.3	S	12 44.5 +14.1	13			
14	29 27.9 -00.3	S	23 11.5 -00.1	12 22.8 +03.6	S	19 01.3 -00.5	90 09.2 -31.5	S	12 58.6 +14.0	14			
15	44 27.6 -00.3	S	23 11.4 -00.2	27 26.4 +03.7	S	19 00.8 -00.4	104 37.7 -31.6	S	13 12.6 +14.0	15			
16	59 27.3 -00.3	S	23 11.2 -00.1	42 30.1 +03.6	S	19 00.4 -00.5	119 06.1 -31.7	S	13 26.6 +14.0	16			
17	74 27.0 -00.3	S	23 11.1 -00.2	57 33.7 +03.7	S	18 59.9 -00.4	133 34.4 -31.8	S	13 40.6 +13.8	17			
18	89 26.7 -00.3	S	23 10.9 -00.2	72 37.4 +03.7	S	18 59.5 -00.5	148 02.6 -31.9	S	13 54.4 +13.9	18			
19	104 26.4 -00.3	S	23 10.7 -00.1	87 41.1 +03.6	S	18 59.0 -00.5	162 30.7 -32.0	S	14 08.3 +13.7	19			
20	119 26.1 -00.3	S	23 10.6 -00.2	102 44.7 +03.7	S	18 58.5 -00.4	176 58.7 -32.1	S	14 22.0 +13.7	20			
21	134 25.8 -00.3	S	23 10.4 -00.1	117 48.4 +03.7	S	18 58.1 -00.5	191 26.6 -32.2	S	14 35.7 +13.6	21			
22	149 25.5 -00.3	S	23 10.3 -00.2	132 52.1 +03.6	S	18 57.6 -00.5	205 54.4 -32.4	S	14 49.3 +13.5	22			
23	164 25.2 -00.3	S	23 10.1 -00.2	147 55.7 +03.7	S	18 57.1 -00.4	220 22.0 -32.4	S	15 02.8 +13.5	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 00'5 00'5 00'5 00'5 00'5 00'5			SD 16'1 16'2 16'2 16'3 16'3 16'3						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'5 00'5 00'5 00'5 00'5 00'5			HP 59'2 59'4 59'5 59'6 59'8 59'9						
	SHA 082° 082° 081° 081° 081° 081°			SHA 064° 064° 064° 064° 064° 064°			SHA 149° 146° 144° 142° 140° 137°						
	Greenwich Culmination Time: 12:02			Greenwich Culmination Time: 13:10			Greenwich Culmination Time: 07:46						

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	208 17.3 +00.5	S	22 11.1 +00.3	125 15.1 +02.0	S	12 25.2 -00.2	143 23.4 +02.2	S	18 05.9 +00.0	00			
01	223 17.8 +00.6	S	22 11.4 +00.2	140 17.1 +02.0	S	12 25.0 -00.2	158 25.6 +02.2	S	18 05.9 -00.1	01			
02	238 18.4 +00.6	S	22 11.6 +00.3	155 19.1 +02.0	S	12 24.8 -00.2	173 27.8 +02.2	S	18 05.8 -00.1	02			
03	253 19.0 +00.6	S	22 11.9 +00.3	170 21.1 +02.0	S	12 24.6 -00.1	188 30.0 +02.2	S	18 05.7 -00.1	03			
04	268 19.6 +00.5	S	22 12.2 +00.3	185 23.1 +02.1	S	12 24.5 -00.2	203 32.2 +02.2	S	18 05.6 +00.0	04			
05	283 20.1 +00.6	S	22 12.5 +00.2	200 25.2 +02.0	S	12 24.3 -00.2	218 34.4 +02.2	S	18 05.6 -00.1	05			
06	298 20.7 +00.6	S	22 12.7 +00.3	215 27.2 +02.0	S	12 24.1 -00.1	233 36.6 +02.2	S	18 05.5 -00.1	06			
07	313 21.3 +00.5	S	22 13.0 +00.3	230 29.2 +02.0	S	12 24.0 -00.2	248 38.8 +02.2	S	18 05.4 -00.1	07			
08	328 21.8 +00.6	S	22 13.3 +00.3	245 31.2 +02.0	S	12 23.8 -00.2	263 41.0 +02.2	S	18 05.3 +00.0	08			
09	343 22.4 +00.6	S	22 13.6 +00.2	260 33.2 +02.0	S	12 23.6 -00.2	278 43.2 +02.2	S	18 05.3 -00.1	09			
10	358 23.0 +00.6	S	22 13.8 +00.3	275 35.2 +02.0	S	12 23.4 -00.1	293 45.4 +02.1	S	18 05.2 -00.1	10			
11	13 23.6 +00.5	S	22 14.1 +00.3	290 37.2 +02.0	S	12 23.3 -00.2	308 47.5 +02.2	S	18 05.1 +00.0	11			
12	28 24.1 +00.6	S	22 14.4 +00.2	305 39.2 +02.0	S	12 23.1 -00.2	323 49.7 +02.2	S	18 05.1 -00.1	12			
13	43 24.7 +00.6	S	22 14.6 +00.3	320 41.2 +02.0	S	12 22.9 -00.1	338 51.9 +02.2	S	18 05.0 -00.1	13			
14	58 25.3 +00.5	S	22 14.9 +00.3	335 43.2 +02.0	S	12 22.8 -00.2	353 54.1 +02.2	S	18 04.9 -00.1	14			
15	73 25.8 +00.6	S	22 15.2 +00.3	350 45.2 +02.0	S	12 22.6 -00.2	8 56.3 +02.2	S	18 04.8 +00.0	15			
16	88 26.4 +00.6	S	22 15.5 +00.2	5 47.2 +02.0	S	12 22.4 -00.2	23 58.5 +02.2	S	18 04.8 -00.1	16			
17	103 27.0 +00.6	S	22 15.7 +00.3	20 49.2 +02.0	S	12 22.2 -00.1	39 00.7 +02.2	S	18 04.7 -00.1	17			
18	118 27.6 +00.5	S	22 16.0 +00.3	35 51.2 +02.1	S	12 22.1 -00.2	54 02.9 +02.2	S	18 04.6 -00.1	18			
19	133 28.1 +00.6	S	22 16.3 +00.2	50 53.3 +02.0	S	12 21.9 -00.2	69 05.1 +02.2	S	18 04.5 +00.0	19			
20	148 28.7 +00.6	S	22 16.5 +00.3	65 55.3 +02.0	S	12 21.7 -00.2	84 07.3 +02.2	S	18 04.5 -00.1	20			
21	163 29.3 +00.5	S	22 16.8 +00.3	80 57.3 +02.0	S	12 21.5 -00.1	99 09.5 +02.2	S	18 04.4 -00.1	21			
22	178 29.8 +00.6	S	22 17.1 +00.2	95 59.3 +02.0	S	12 21.4 -00.2	114 11.7 +02.2	S	18 04.3 +00.0	22			
23	193 30.4 +00.6	S	22 17.3 +00.3	111 01.3 +02.0	S	12 21.2 -00.2	129 13.9 +02.2	S	18 04.3 -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 111° 110° 110° 110° 110° 110°			SHA 028° 028° 028° 027° 027° 027°			SHA 046° 046° 046° 046° 046° 046°						
	Greenwich Culmination Time: 10:06			Greenwich Culmination Time: 15:36			Greenwich Culmination Time: 14:24						

Sun					Venus					Moon					A: 86%					
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT							
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "								
00	179 24.9 -00.3	S	23 09.9 -00.1		162 59.4 +03.7	S	18 56.7 -00.5		234 49.6 -32.6	S	15 16.3 +13.4		00							
01	194 24.6 -00.3	S	23 09.8 -00.2		178 03.1 +03.7	S	18 56.2 -00.4		249 17.0 -32.7	S	15 29.7 +13.3		01							
02	209 24.3 -00.3	S	23 09.6 -00.1		193 06.8 +03.7	S	18 55.8 -00.5		263 44.3 -32.8	S	15 43.0 +13.2		02							
03	224 24.0 -00.3	S	23 09.5 -00.2		208 10.5 +03.7	S	18 55.3 -00.5		278 11.5 -32.9	S	15 56.2 +13.2		03							
04	239 23.7 -00.4	S	23 09.3 -00.2		223 14.2 +03.7	S	18 54.8 -00.4		292 38.6 -33.0	S	16 09.4 +13.0		04							
05	254 23.3 -00.3	S	23 09.1 -00.1		238 17.9 +03.7	S	18 54.4 -00.5		307 05.6 -33.2	S	16 22.4 +13.0		05							
06	269 23.0 -00.3	S	23 09.0 -00.2		253 21.6 +03.7	S	18 53.9 -00.4		321 32.4 -33.3	S	16 35.4 +12.9		06							
07	284 22.7 -00.3	S	23 08.8 -00.2		268 25.3 +03.7	S	18 53.5 -00.5		335 59.1 -33.3	S	16 48.3 +12.8		07							
08	299 22.4 -00.3	S	23 08.6 -00.2		283 29.0 +03.7	S	18 53.0 -00.4		350 25.8 -33.5	S	17 01.1 +12.7		08							
09	314 22.1 -00.3	S	23 08.4 -00.1		298 32.7 +03.7	S	18 52.6 -00.5		4 52.3 -33.7	S	17 13.8 +12.6		09							
10	329 21.8 -00.3	S	23 08.3 -00.2		313 36.4 +03.7	S	18 52.1 -00.5		19 18.6 -33.7	S	17 26.4 +12.5		10							
11	344 21.5 -00.3	S	23 08.1 -00.2		328 40.1 +03.7	S	18 51.6 -00.4		33 44.9 -33.9	S	17 38.9 +12.4		11							
12	359 21.2 -00.3	S	23 07.9 -00.1		343 43.8 +03.8	S	18 51.2 -00.5		48 11.0 -34.0	S	17 51.3 +12.4		12							
13	14 20.9 -00.3	S	23 07.8 -00.2		358 47.6 +03.7	S	18 50.7 -00.4		62 37.0 -34.1	S	18 03.7 +12.2		13							
14	29 20.6 -00.3	S	23 07.6 -00.2		13 51.3 +03.7	S	18 50.3 -00.5		77 02.9 -34.2	S	18 15.9 +12.1		14							
15	44 20.3 -00.3	S	23 07.4 -00.2		28 55.0 +03.8	S	18 49.8 -00.4		91 28.7 -34.3	S	18 28.0 +12.0		15							
16	59 20.0 -00.3	S	23 07.2 -00.1		43 58.8 +03.7	S	18 49.4 -00.5		105 54.4 -34.5	S	18 40.0 +11.9		16							
17	74 19.7 -00.3	S	23 07.1 -00.2		59 02.5 +03.7	S	18 48.9 -00.4		120 19.9 -34.6	S	18 51.9 +11.8		17							
18	89 19.4 -00.3	S	23 06.9 -00.2		74 06.2 +03.8	S	18 48.5 -00.5		134 45.3 -34.7	S	19 03.7 +11.7		18							
19	104 19.1 -00.3	S	23 06.7 -00.2		89 10.0 +03.7	S	18 48.0 -00.5		149 10.6 -34.8	S	19 15.4 +11.5		19							
20	119 18.8 -00.3	S	23 06.5 -00.2		104 13.7 +03.8	S	18 47.5 -00.4		163 35.8 -35.0	S	19 26.9 +11.5		20							
21	134 18.5 -00.3	S	23 06.3 -00.1		119 17.5 +03.7	S	18 47.1 -00.5		178 00.8 -35.1	S	19 38.4 +11.3		21							
22	149 18.2 -00.3	S	23 06.2 -00.2		134 21.2 +03.8	S	18 46.6 -00.4		192 25.7 -35.2	S	19 49.7 +11.2		22							
23	164 17.9 -00.3	S	23 06.0 -00.2		149 25.0 +03.8	S	18 46.2 -00.5		206 50.5 -35.3	S	20 00.9 +11.1		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	00'5	00'5	00'5	00'5	00'5	00'5	SD	16'4	16'4	16'4	16'4	16'5	16'5
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'5	00'5	00'5	00'5	00'5	00'5	HP	60'0	60'1	60'3	60'4	60'5	60'6
SHA	081°	080°	080°	080°	080°	080°	SHA	064°	064°	065°	065°	065°	065°	SHA	135°	133°	130°	128°	125°	123°
Greenwich Culmination Time: 12:02							Greenwich Culmination Time: 13:04							Greenwich Culmination Time: 08:39						

Mars					Jupiter					Saturn					UT					
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT							
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "								
00	208 31.0 +00.5	S	22 17.6 +00.3		126 03.3 +02.0	S	12 21.0 -00.1		144 16.1 +02.2	S	18 04.2 -00.1		00							
01	223 31.5 +00.6	S	22 17.9 +00.2		141 05.3 +02.0	S	12 20.9 -00.2		159 18.3 +02.2	S	18 04.1 -00.1		01							
02	238 32.1 +00.6	S	22 18.1 +00.3		156 07.3 +02.0	S	12 20.7 -00.2		174 20.5 +02.2	S	18 04.0 +00.0		02							
03	253 32.7 +00.5	S	22 18.4 +00.3		171 09.3 +02.0	S	12 20.5 -00.2		189 22.7 +02.2	S	18 04.0 -00.1		03							
04	268 33.2 +00.6	S	22 18.7 +00.2		186 11.3 +02.0	S	12 20.3 -00.1		204 24.9 +02.1	S	18 03.9 -00.1		04							
05	283 33.8 +00.6	S	22 18.9 +00.3		201 13.3 +02.0	S	12 20.2 -00.2		219 27.0 +02.2	S	18 03.8 -00.1		05							
06	298 34.4 +00.5	S	22 19.2 +00.3		216 15.3 +02.0	S	12 20.0 -00.2		234 29.2 +02.2	S	18 03.7 +00.0		06							
07	313 34.9 +00.6	S	22 19.5 +00.2		231 17.3 +02.0	S	12 19.8 -00.2		249 31.4 +02.2	S	18 03.7 -00.1		07							
08	328 35.5 +00.6	S	22 19.7 +00.3		246 19.3 +02.0	S	12 19.6 -00.1		264 33.6 +02.2	S	18 03.6 -00.1		08							
09	343 36.1 +00.5	S	22 20.0 +00.3		261 21.3 +02.0	S	12 19.5 -00.2		279 35.8 +02.2	S	18 03.5 -00.1		09							
10	358 36.6 +00.6	S	22 20.3 +00.2		276 23.3 +02.0	S	12 19.3 -00.2		294 38.0 +02.2	S	18 03.4 +00.0		10							
11	13 37.2 +00.6	S	22 20.5 +00.3		291 25.3 +02.0	S	12 19.1 -00.1		309 40.2 +02.2	S	18 03.4 -00.1		11							
12	28 37.8 +00.5	S	22 20.8 +00.2		306 27.3 +02.0	S	12 19.0 -00.2		324 42.4 +02.2	S	18 03.3 -00.1		12							
13	43 38.3 +00.6	S	22 21.0 +00.3		321 29.3 +02.0	S	12 18.8 -00.2		339 44.6 +02.2	S	18 03.2 -00.1		13							
14	58 38.9 +00.6	S	22 21.3 +00.3		336 31.3 +02.0	S	12 18.6 -00.2		354 46.8 +02.2	S	18 03.1 +00.0		14							
15	73 39.5 +00.5	S	22 21.6 +00.2		351 33.3 +02.0	S	12 18.4 -00.1		9 49.0 +02.2	S	18 03.1 -00.1		15							
16	88 40.0 +00.6	S	22 21.8 +00.3		6 35.3 +02.0	S	12 18.3 -00.2		24 51.2 +02.2	S	18 03.0 -00.1		16							
17	103 40.6 +00.6	S	22 22.1 +00.2		21 37.3 +02.1	S	12 18.1 -00.2		39 53.4 +02.2	S	18 02.9 +00.0		17							
18	118 41.2 +00.5	S	22 22.3 +00.3		36 39.4 +02.0	S	12 17.9 -00.2		54 55.6 +02.2	S	18 02.9 -00.1		18							
19	133 41.7 +00.6	S	22 22.6 +00.3		51 41.4 +02.0	S	12 17.7 -00.1		69 57.8 +02.1	S	18 02.8 -00.1		19							
20	148 42.3 +00.6	S	22 22.9 +00.2		66 43.4 +02.0	S	12 17.6 -00.2		84 59.9 +02.2	S	18 02.7 -00.1		20							
21	163 42.9 +00.5	S	22 23.1 +00.3		81 45.4 +02.0	S	12 17.4 -00.2		100 02.1 +02.2	S	18 02.6 +00.0		21							
22	178 43.4 +00.6	S	22 23.4 +00.2		96 47.4 +02.0	S	12 17.2 -00.2		115 04.3 +02.2	S	18 02.6 -00.1		22							
23	193 44.0 +00.6	S	22 23.6 +00.3		111 49.4 +02.0	S	12 17.0 -00.1		130 06.5 +02.2	S	18 02.5 -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	00'0	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	110°	110°	110°	109°	109°	109°	SHA	027°	027°	027°	027°	027°	027°	SHA	046°	046°	046°	046°	046°	046°
Greenwich Culmination Time: 10:05							Greenwich Culmination Time: 15:33							Greenwich Culmination Time: 14:20						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	179	17.6	-00.3	S 23 05.8	-00.2	164	28.8	+03.7	S 18 45.7	-00.4	221	15.2	-35.5	S 20 12.0	+10.9	00
01	194	17.3	-00.3	S 23 05.6	-00.2	179	32.5	+03.8	S 18 45.3	-00.5	235	39.7	-35.5	S 20 22.9	+10.8	01
02	209	17.0	-00.3	S 23 05.4	-00.1	194	36.3	+03.8	S 18 44.8	-00.4	250	04.2	-35.7	S 20 33.7	+10.7	02
03	224	16.7	-00.3	S 23 05.3	-00.2	209	40.1	+03.8	S 18 44.4	-00.5	264	28.5	-35.8	S 20 44.4	+10.6	03
04	239	16.4	-00.3	S 23 05.1	-00.2	224	43.9	+03.7	S 18 43.9	-00.4	278	52.7	-35.9	S 20 55.0	+10.4	04
05	254	16.1	-00.3	S 23 04.9	-00.2	239	47.6	+03.8	S 18 43.5	-00.5	293	16.8	-36.1	S 21 05.4	+10.3	05
06	269	15.8	-00.3	S 23 04.7	-00.2	254	51.4	+03.8	S 18 43.0	-00.4	307	40.7	-36.2	S 21 15.7	+10.1	06
07	284	15.5	-00.3	S 23 04.5	-00.2	269	55.2	+03.8	S 18 42.6	-00.5	322	04.5	-36.2	S 21 25.8	+10.1	07
08	299	15.2	-00.3	S 23 04.3	-00.2	284	59.0	+03.8	S 18 42.1	-00.4	336	28.3	-36.4	S 21 35.9	+09.8	08
09	314	14.9	-00.3	S 23 04.1	-00.2	300	02.8	+03.8	S 18 41.7	-00.5	350	51.9	-36.6	S 21 45.7	+09.7	09
10	329	14.6	-00.3	S 23 03.9	-00.1	315	06.6	+03.8	S 18 41.2	-00.4	5	15.3	-36.6	S 21 55.4	+09.6	10
11	344	14.3	-00.3	S 23 03.8	-00.2	330	10.4	+03.8	S 18 40.8	-00.4	19	38.7	-36.7	S 22 05.0	+09.4	11
12	359	14.0	-00.2	S 23 03.6	-00.2	345	14.2	+03.8	S 18 40.4	-00.5	34	02.0	-36.9	S 22 14.4	+09.3	12
13	14	13.8	-00.3	S 23 03.4	-00.2	0	18.0	+03.8	S 18 39.9	-00.4	48	25.1	-37.0	S 22 23.7	+09.1	13
14	29	13.5	-00.3	S 23 03.2	-00.2	15	21.8	+03.8	S 18 39.5	-00.5	62	48.1	-37.1	S 22 32.8	+09.0	14
15	44	13.2	-00.3	S 23 03.0	-00.2	30	25.6	+03.8	S 18 39.0	-00.4	77	11.0	-37.2	S 22 41.8	+08.8	15
16	59	12.9	-00.3	S 23 02.8	-00.2	45	29.4	+03.8	S 18 38.6	-00.5	91	33.8	-37.3	S 22 50.6	+08.7	16
17	74	12.6	-00.3	S 23 02.6	-00.2	60	33.2	+03.9	S 18 38.1	-00.4	105	56.5	-37.4	S 22 59.3	+08.4	17
18	89	12.3	-00.3	S 23 02.4	-00.2	75	37.1	+03.8	S 18 37.7	-00.5	120	19.1	-37.5	S 23 07.7	+08.4	18
19	104	12.0	-00.3	S 23 02.2	-00.2	90	40.9	+03.8	S 18 37.2	-00.4	134	41.6	-37.6	S 23 16.1	+08.1	19
20	119	11.7	-00.3	S 23 02.0	-00.2	105	44.7	+03.8	S 18 36.8	-00.4	149	04.0	-37.7	S 23 24.2	+08.0	20
21	134	11.4	-00.3	S 23 01.8	-00.2	120	48.5	+03.9	S 18 36.4	-00.5	163	26.3	-37.9	S 23 32.2	+07.9	21
22	149	11.1	-00.3	S 23 01.6	-00.2	135	52.4	+03.8	S 18 35.9	-00.4	177	48.4	-37.9	S 23 40.1	+07.6	22
23	164	10.8	-00.3	S 23 01.4	-00.2	150	56.2	+03.8	S 18 35.5	-00.5	192	10.5	-38.0	S 23 47.7	+07.5	23
UT 02 06 10 14 18 22				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 00'5 00'5 00'5 00'5 00'5 00'5				SD 16'5 16'6 16'6 16'6 16'6 16'6				SD 16'5 16'6 16'6 16'6 16'6 16'6				
HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 00'5 00'5 00'5 00'5 00'5 00'5				HP 60'7 60'8 60'8 60'9 61'0 61'0				HP 60'7 60'8 60'8 60'9 61'0 61'0				
SHA 080° 079° 079° 079° 079° 079°				SHA 065° 065° 065° 065° 065° 065°				SHA 120° 118° 115° 113° 110° 107°				SHA 120° 118° 115° 113° 110° 107°				
Greenwich Culmination Time: 12:03				Greenwich Culmination Time: 12:58				Greenwich Culmination Time: 09:38				Greenwich Culmination Time: 09:38				

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	208	44.6	+00.5	S 22 23.9	+00.3	126	51.4	+02.0	S 12 16.9	-00.2	145	08.7	+02.2	S 18 02.4	-00.1	00
01	223	45.1	+00.6	S 22 24.2	+00.2	141	53.4	+02.0	S 12 16.7	-00.2	160	10.9	+02.2	S 18 02.3	+00.0	01
02	238	45.7	+00.5	S 22 24.4	+00.3	156	55.4	+02.0	S 12 16.5	-00.2	175	13.1	+02.2	S 18 02.3	-00.1	02
03	253	46.2	+00.6	S 22 24.7	+00.2	171	57.4	+02.0	S 12 16.3	-00.1	190	15.3	+02.2	S 18 02.2	-00.1	03
04	268	46.8	+00.6	S 22 24.9	+00.3	186	59.4	+02.0	S 12 16.2	-00.2	205	17.5	+02.2	S 18 02.1	-00.1	04
05	283	47.4	+00.5	S 22 25.2	+00.2	202	01.4	+02.0	S 12 16.0	-00.2	220	19.7	+02.2	S 18 02.0	+00.0	05
06	298	47.9	+00.6	S 22 25.4	+00.3	217	03.4	+02.0	S 12 15.8	-00.2	235	21.9	+02.2	S 18 02.0	-00.1	06
07	313	48.5	+00.6	S 22 25.7	+00.3	232	05.4	+02.0	S 12 15.6	-00.1	250	24.1	+02.2	S 18 01.9	-00.1	07
08	328	49.1	+00.5	S 22 26.0	+00.2	247	07.4	+02.0	S 12 15.5	-00.2	265	26.3	+02.1	S 18 01.8	-00.1	08
09	343	49.6	+00.6	S 22 26.2	+00.3	262	09.4	+02.0	S 12 15.3	-00.2	280	28.4	+02.2	S 18 01.7	+00.0	09
10	358	50.2	+00.5	S 22 26.5	+00.2	277	11.4	+02.0	S 12 15.1	-00.2	295	30.6	+02.2	S 18 01.7	-00.1	10
11	13	50.7	+00.6	S 22 26.7	+00.3	292	13.4	+02.0	S 12 14.9	-00.1	310	32.8	+02.2	S 18 01.6	-00.1	11
12	28	51.3	+00.6	S 22 27.0	+00.2	307	15.4	+02.0	S 12 14.8	-00.2	325	35.0	+02.2	S 18 01.5	+00.0	12
13	43	51.9	+00.5	S 22 27.2	+00.3	322	17.4	+02.0	S 12 14.6	-00.2	340	37.2	+02.2	S 18 01.5	-00.1	13
14	58	52.4	+00.6	S 22 27.5	+00.2	337	19.4	+02.0	S 12 14.4	-00.2	355	39.4	+02.2	S 18 01.4	-00.1	14
15	73	53.0	+00.6	S 22 27.7	+00.3	352	21.4	+02.0	S 12 14.2	-00.1	10	41.6	+02.2	S 18 01.3	-00.1	15
16	88	53.6	+00.5	S 22 28.0	+00.2	7	23.4	+02.0	S 12 14.1	-00.2	25	43.8	+02.2	S 18 01.2	+00.0	16
17	103	54.1	+00.6	S 22 28.2	+00.3	22	25.4	+02.0	S 12 13.9	-00.2	40	46.0	+02.2	S 18 01.2	-00.1	17
18	118	54.7	+00.5	S 22 28.5	+00.2	37	27.4	+02.0	S 12 13.7	-00.2	55	48.2	+02.2	S 18 01.1	-00.1	18
19	133	55.2	+00.6	S 22 28.7	+00.3	52	29.4	+02.0	S 12 13.5	-00.1	70	50.4	+02.2	S 18 01.0	-00.1	19
20	148	55.8	+00.6	S 22 29.0	+00.2	67	31.4	+02.0	S 12 13.4	-00.2	85	52.6	+02.1	S 18 00.9	+00.0	20
21	163	56.4	+00.5	S 22 29.2	+00.3	82	33.4	+02.0	S 12 13.2	-00.2	100	54.7	+02.2	S 18 00.9	-00.1	21
22	178	56.9	+00.6	S 22 29.5	+00.2	97	35.4	+02.0	S 12 13.0	-00.2	115	56.9	+02.2	S 18 00.8	-00.1	22
23	193	57.5	+00.5	S 22 29.7	+00.3	112	37.4	+02.0	S 12 12.8	-00.1	130	59.1	+02.2	S 18 00.7	-00.1	23
UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				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				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 109° 109° 109° 109° 109° 108°				SHA 027° 027° 027° 027° 027° 027°				SHA 045° 045° 045° 045° 045° 045°				SHA 045° 045° 045° 045° 045° 045°				
Greenwich Culmination Time: 10:04				Greenwich Culmination Time: 15:30				Greenwich Culmination Time: 14:17				Greenwich Culmination Time: 14:17				

