

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 35.3 +00.2	S	03 17.7 +01.0	153 06.0 -00.4	S	14 56.5 +01.1	199 41.3 -23.8	N	05 49.7 -14.0	00			
01	197 35.5 +00.2	S	03 18.7 +00.9	168 05.6 -00.5	S	14 57.6 +01.1	214 17.5 -23.8	N	05 35.7 -14.0	01			
02	212 35.7 +00.2	S	03 19.6 +01.0	183 05.1 -00.5	S	14 58.7 +01.0	228 53.7 -23.8	N	05 21.7 -14.1	02			
03	227 35.9 +00.2	S	03 20.6 +01.0	198 04.6 -00.5	S	14 59.7 +01.1	243 29.9 -23.8	N	05 07.6 -14.1	03			
04	242 36.1 +00.2	S	03 21.6 +00.9	213 04.1 -00.5	S	15 00.8 +01.1	258 06.1 -23.8	N	04 53.5 -14.1	04			
05	257 36.3 +00.2	S	03 22.5 +01.0	228 03.6 -00.4	S	15 01.9 +01.1	272 42.3 -23.7	N	04 39.4 -14.1	05			
06	272 36.5 +00.2	S	03 23.5 +01.0	243 03.2 -00.5	S	15 03.0 +01.1	287 18.6 -23.7	N	04 25.3 -14.1	06			
07	287 36.7 +00.2	S	03 24.5 +00.9	258 02.7 -00.5	S	15 04.1 +01.0	301 54.9 -23.7	N	04 11.2 -14.1	07			
08	302 36.9 +00.2	S	03 25.4 +01.0	273 02.2 -00.5	S	15 05.1 +01.1	316 31.2 -23.6	N	03 57.1 -14.1	08			
09	317 37.1 +00.2	S	03 26.4 +01.0	288 01.7 -00.5	S	15 06.2 +01.1	331 07.6 -23.7	N	03 43.0 -14.2	09			
10	332 37.3 +00.2	S	03 27.4 +00.9	303 01.2 -00.5	S	15 07.3 +01.1	345 43.9 -23.6	N	03 28.8 -14.1	10			
11	347 37.5 +00.2	S	03 28.3 +01.0	318 00.7 -00.4	S	15 08.4 +01.1	0 20.3 -23.6	N	03 14.7 -14.2	11			
12	2 37.7 +00.2	S	03 29.3 +01.0	333 00.3 -00.5	S	15 09.5 +01.0	14 56.7 -23.6	N	03 00.5 -14.2	12			
13	17 37.9 +00.2	S	03 30.3 +01.0	347 59.8 -00.5	S	15 10.5 +01.1	29 33.1 -23.6	N	02 46.3 -14.2	13			
14	32 38.1 +00.2	S	03 31.3 +00.9	2 59.3 -00.5	S	15 11.6 +01.1	44 09.5 -23.6	N	02 32.1 -14.1	14			
15	47 38.3 +00.2	S	03 32.2 +01.0	17 58.8 -00.5	S	15 12.7 +01.1	58 45.9 -23.5	N	02 18.0 -14.2	15			
16	62 38.5 +00.2	S	03 33.2 +01.0	32 58.3 -00.5	S	15 13.8 +01.0	73 22.4 -23.6	N	02 03.8 -14.2	16			
17	77 38.7 +00.2	S	03 34.2 +00.9	47 57.8 -00.5	S	15 14.8 +01.1	87 58.8 -23.5	N	01 49.6 -14.3	17			
18	92 38.9 +00.2	S	03 35.1 +01.0	62 57.3 -00.4	S	15 15.9 +01.1	102 35.3 -23.6	N	01 35.3 -14.2	18			
19	107 39.1 +00.2	S	03 36.1 +01.0	77 56.9 -00.5	S	15 17.0 +01.1	117 11.7 -23.5	N	01 21.1 -14.2	19			
20	122 39.3 +00.2	S	03 37.1 +00.9	92 56.4 -00.5	S	15 18.1 +01.0	131 48.2 -23.5	N	01 06.9 -14.2	20			
21	137 39.5 +00.2	S	03 38.0 +01.0	107 55.9 -00.5	S	15 19.1 +01.1	146 24.7 -23.5	N	00 52.7 -14.2	21			
22	152 39.7 +00.2	S	03 39.0 +01.0	122 55.4 -00.5	S	15 20.2 +01.1	161 01.2 -23.5	N	00 38.5 -14.2	22			
23	167 39.9 +00.2	S	03 40.0 +00.9	137 54.9 -00.5	S	15 21.3 +01.0	175 37.7 -23.5	N	00 24.3 -14.2	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'0 16'0 16'0 16'0 16'0 16'0			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 14'7 14'7 14'7 14'7 14'7 14'7						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 54'0 54'0 54'0 54'0 54'0 53'9						
	SHA 172° 172° 172° 172° 172° 172°			SHA 143° 143° 142° 142° 142° 142°			SHA 189° 187° 185° 183° 182° 180°						
	Greenwich Culmination Time: 11:49			Greenwich Culmination Time: 13:48			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	264 02.2 +01.1	N	23 08.2 +00.0	289 43.2 +02.4	N	22 26.1 +00.0	23 46.4 +02.6	S	08 10.7 +00.1	00			
01	279 03.3 +01.0	N	23 08.2 -00.1	304 45.6 +02.4	N	22 26.1 +00.0	38 49.0 +02.6	S	08 10.8 +00.0	01			
02	294 04.3 +01.1	N	23 08.1 -00.1	319 48.0 +02.4	N	22 26.1 +00.0	53 51.6 +02.6	S	08 10.8 +00.1	02			
03	309 05.4 +01.0	N	23 08.0 -00.1	334 50.4 +02.4	N	22 26.1 +00.0	68 54.2 +02.7	S	08 10.9 +00.1	03			
04	324 06.4 +01.0	N	23 07.9 -00.1	349 52.8 +02.4	N	22 26.1 +00.1	83 56.9 +02.6	S	08 11.0 +00.0	04			
05	339 07.4 +01.1	N	23 07.8 -00.1	4 55.2 +02.4	N	22 26.2 +00.0	98 59.5 +02.6	S	08 11.0 +00.1	05			
06	354 08.5 +01.0	N	23 07.7 -00.1	19 57.6 +02.4	N	22 26.2 +00.0	114 02.1 +02.6	S	08 11.1 +00.1	06			
07	9 09.5 +01.1	N	23 07.6 -00.1	34 60.0 +02.4	N	22 26.2 +00.0	129 04.7 +02.6	S	08 11.2 +00.0	07			
08	24 10.6 +01.0	N	23 07.5 +00.0	50 02.4 +02.4	N	22 26.2 +00.0	144 07.3 +02.7	S	08 11.2 +00.1	08			
09	39 11.6 +01.1	N	23 07.5 -00.1	65 04.8 +02.4	N	22 26.2 +00.0	159 10.0 +02.6	S	08 11.3 +00.0	09			
10	54 12.7 +01.0	N	23 07.4 -00.1	80 07.2 +02.3	N	22 26.2 +00.0	174 12.6 +02.6	S	08 11.3 +00.1	10			
11	69 13.7 +01.0	N	23 07.3 -00.1	95 09.5 +02.4	N	22 26.2 +00.0	189 15.2 +02.6	S	08 11.4 +00.1	11			
12	84 14.7 +01.1	N	23 07.2 -00.1	110 11.9 +02.4	N	22 26.2 +00.0	204 17.8 +02.6	S	08 11.5 +00.0	12			
13	99 15.8 +01.0	N	23 07.1 -00.1	125 14.3 +02.4	N	22 26.2 +00.0	219 20.4 +02.7	S	08 11.5 +00.1	13			
14	114 16.8 +01.1	N	23 07.0 -00.1	140 16.7 +02.4	N	22 26.2 +00.0	234 23.1 +02.6	S	08 11.6 +00.0	14			
15	129 17.9 +01.0	N	23 06.9 -00.1	155 19.1 +02.4	N	22 26.2 +00.0	249 25.7 +02.6	S	08 11.6 +00.1	15			
16	144 18.9 +01.1	N	23 06.8 +00.0	170 21.5 +02.4	N	22 26.2 +00.0	264 28.3 +02.6	S	08 11.7 +00.1	16			
17	159 20.0 +01.0	N	23 06.8 -00.1	185 23.9 +02.4	N	22 26.2 +00.0	279 30.9 +02.6	S	08 11.8 +00.0	17			
18	174 21.0 +01.1	N	23 06.7 -00.1	200 26.3 +02.4	N	22 26.2 +00.0	294 33.5 +02.6	S	08 11.8 +00.1	18			
19	189 22.1 +01.0	N	23 06.6 -00.1	215 28.7 +02.4	N	22 26.2 +00.0	309 36.1 +02.7	S	08 11.9 +00.1	19			
20	204 23.1 +01.1	N	23 06.5 -00.1	230 31.1 +02.4	N	22 26.2 +00.0	324 38.8 +02.6	S	08 12.0 +00.0	20			
21	219 24.2 +01.0	N	23 06.4 -00.1	245 33.5 +02.4	N	22 26.2 +00.0	339 41.4 +02.6	S	08 12.0 +00.1	21			
22	234 25.2 +01.1	N	23 06.3 -00.1	260 35.9 +02.4	N	22 26.2 +00.0	354 44.0 +02.6	S	08 12.1 +00.0	22			
23	249 26.3 +01.0	N	23 06.2 -00.1	275 38.3 +02.4	N	22 26.2 +00.0	9 46.6 +02.6	S	08 12.1 +00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			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 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 254° 254° 254° 253° 253° 253°			SHA 279° 279° 279° 279° 279° 279°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 06:23			Greenwich Culmination Time: 04:40			Greenwich Culmination Time: 22:21						

UT	Sun				Venus				Moon				UT				
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec					
00	182 40.1 +00.2	S	03 40.9 +01.0	152 54.4 -00.5	S	15 22.3 +01.1	190 14.2 -23.5	N	00 10.1 -14.3	00							
01	197 40.3 +00.2	S	03 41.9 +01.0	167 53.9 -00.5	S	15 23.4 +01.1	204 50.7 -23.5	S	00 04.2 +14.2	01							
02	212 40.5 +00.2	S	03 42.9 +00.9	182 53.4 -00.5	S	15 24.5 +01.0	219 27.2 -23.5	S	00 18.4 +14.2	02							
03	227 40.7 +00.2	S	03 43.8 +01.0	197 52.9 -00.5	S	15 25.5 +01.1	234 03.7 -23.5	S	00 32.6 +14.2	03							
04	242 40.9 +00.2	S	03 44.8 +01.0	212 52.4 -00.4	S	15 26.6 +01.1	248 40.2 -23.5	S	00 46.8 +14.2	04							
05	257 41.1 +00.2	S	03 45.8 +00.9	227 52.0 -00.5	S	15 27.7 +01.1	263 16.7 -23.5	S	01 01.0 +14.2	05							
06	272 41.3 +00.2	S	03 46.7 +01.0	242 51.5 -00.5	S	15 28.8 +01.0	277 53.2 -23.5	S	01 15.2 +14.2	06							
07	287 41.5 +00.2	S	03 47.7 +01.0	257 51.0 -00.5	S	15 29.8 +01.1	292 29.7 -23.5	S	01 29.4 +14.2	07							
08	302 41.7 +00.2	S	03 48.7 +00.9	272 50.5 -00.5	S	15 30.9 +01.0	307 06.2 -23.5	S	01 43.6 +14.2	08							
09	317 41.9 +00.2	S	03 49.6 +01.0	287 50.0 -00.5	S	15 31.9 +01.1	321 42.7 -23.5	S	01 57.8 +14.2	09							
10	332 42.1 +00.2	S	03 50.6 +01.0	302 49.5 -00.5	S	15 33.0 +01.1	336 19.2 -23.6	S	02 12.0 +14.1	10							
11	347 42.3 +00.2	S	03 51.6 +00.9	317 49.0 -00.5	S	15 34.1 +01.0	350 55.6 -23.5	S	02 26.1 +14.2	11							
12	2 42.5 +00.2	S	03 52.5 +01.0	332 48.5 -00.5	S	15 35.1 +01.1	5 32.1 -23.5	S	02 40.3 +14.1	12							
13	17 42.7 +00.2	S	03 53.5 +01.0	347 48.0 -00.5	S	15 36.2 +01.1	20 08.6 -23.6	S	02 54.4 +14.2	13							
14	32 42.9 +00.2	S	03 54.5 +00.9	2 47.5 -00.5	S	15 37.3 +01.0	34 45.0 -23.6	S	03 08.6 +14.1	14							
15	47 43.1 +00.1	S	03 55.4 +01.0	17 47.0 -00.5	S	15 38.3 +01.1	49 21.4 -23.5	S	03 22.7 +14.1	15							
16	62 43.2 +00.2	S	03 56.4 +01.0	32 46.5 -00.5	S	15 39.4 +01.0	63 57.9 -23.6	S	03 36.8 +14.1	16							
17	77 43.4 +00.2	S	03 57.4 +00.9	47 46.0 -00.5	S	15 40.4 +01.1	78 34.3 -23.6	S	03 50.9 +14.1	17							
18	92 43.6 +00.2	S	03 58.3 +01.0	62 45.5 -00.5	S	15 41.5 +01.1	93 10.7 -23.7	S	04 05.0 +14.1	18							
19	107 43.8 +00.2	S	03 59.3 +01.0	77 45.0 -00.5	S	15 42.6 +01.0	107 47.0 -23.6	S	04 19.1 +14.1	19							
20	122 44.0 +00.2	S	04 00.3 +00.9	92 44.5 -00.5	S	15 43.6 +01.1	122 23.4 -23.6	S	04 33.2 +14.0	20							
21	137 44.2 +00.2	S	04 01.2 +01.0	107 44.0 -00.5	S	15 44.7 +01.0	136 59.8 -23.7	S	04 47.2 +14.0	21							
22	152 44.4 +00.2	S	04 02.2 +01.0	122 43.5 -00.5	S	15 45.7 +01.1	151 36.1 -23.7	S	05 01.2 +14.0	22							
23	167 44.6 +00.2	S	04 03.2 +00.9	137 43.0 -00.5	S	15 46.8 +01.0	166 12.4 -23.7	S	05 15.2 +14.0	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	00'1	00'1	00'1	00'1	00'1	00'1	SD			
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP			
SHA	171°	171°	171°	171°	171°	171°	SHA	142°	141°	141°	141°	141°	141°	SHA			
Greenwich Culmination Time: 11:49						Greenwich Culmination Time: 13:48						Greenwich Culmination Time: 11:37					

  

UT	Mars				Jupiter				Saturn				UT				
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec					
00	264 27.3 +01.1	N	23 06.1 -00.1	290 40.7 +02.4	N	22 26.2 +00.0	24 49.2 +02.6	S	08 12.2 +00.1	00							
01	279 28.4 +01.0	N	23 06.0 +00.0	305 43.1 +02.4	N	22 26.2 +00.0	39 51.8 +02.7	S	08 12.3 +00.0	01							
02	294 29.4 +01.1	N	23 06.0 -00.1	320 45.5 +02.4	N	22 26.2 +00.0	54 54.5 +02.6	S	08 12.3 +00.1	02							
03	309 30.5 +01.0	N	23 05.9 -00.1	335 47.9 +02.4	N	22 26.2 +00.0	69 57.1 +02.6	S	08 12.4 +00.0	03							
04	324 31.5 +01.1	N	23 05.8 -00.1	350 50.3 +02.4	N	22 26.2 +00.0	84 59.7 +02.6	S	08 12.4 +00.1	04							
05	339 32.6 +01.0	N	23 05.7 -00.1	5 52.7 +02.4	N	22 26.2 +00.0	100 02.3 +02.6	S	08 12.5 +00.1	05							
06	354 33.6 +01.1	N	23 05.6 -00.1	20 55.1 +02.4	N	22 26.2 +00.0	115 04.9 +02.7	S	08 12.6 +00.0	06							
07	9 34.7 +01.0	N	23 05.5 -00.1	35 57.5 +02.4	N	22 26.2 +00.0	130 07.6 +02.6	S	08 12.6 +00.1	07							
08	24 35.7 +01.1	N	23 05.4 -00.1	50 59.9 +02.4	N	22 26.2 +00.0	145 10.2 +02.6	S	08 12.7 +00.1	08							
09	39 36.8 +01.1	N	23 05.3 -00.1	66 02.3 +02.4	N	22 26.2 +00.0	160 12.8 +02.6	S	08 12.8 +00.0	09							
10	54 37.9 +01.0	N	23 05.2 -00.1	81 04.7 +02.4	N	22 26.2 +00.0	175 15.4 +02.6	S	08 12.8 +00.1	10							
11	69 38.9 +01.1	N	23 05.1 -00.1	96 07.1 +02.4	N	22 26.2 +00.0	190 18.0 +02.6	S	08 12.9 +00.0	11							
12	84 40.0 +01.0	N	23 05.0 +00.0	111 09.5 +02.4	N	22 26.2 +00.1	205 20.6 +02.6	S	08 12.9 +00.1	12							
13	99 41.0 +01.1	N	23 05.0 -00.1	126 11.9 +02.4	N	22 26.3 +00.0	220 23.2 +02.7	S	08 13.0 +00.1	13							
14	114 42.1 +01.0	N	23 04.9 -00.1	141 14.3 +02.4	N	22 26.3 +00.0	235 25.9 +02.6	S	08 13.1 +00.0	14							
15	129 43.1 +01.1	N	23 04.8 -00.1	156 16.7 +02.4	N	22 26.3 +00.0	250 28.5 +02.6	S	08 13.1 +00.1	15							
16	144 44.2 +01.1	N	23 04.7 -00.1	171 19.1 +02.4	N	22 26.3 +00.0	265 31.1 +02.6	S	08 13.2 +00.0	16							
17	159 45.3 +01.0	N	23 04.6 -00.1	186 21.5 +02.4	N	22 26.3 +00.0	280 33.7 +02.6	S	08 13.2 +00.1	17							
18	174 46.3 +01.1	N	23 04.5 -00.1	201 23.9 +02.4	N	22 26.3 +00.0	295 36.3 +02.6	S	08 13.3 +00.1	18							
19	189 47.4 +01.0	N	23 04.4 -00.1	216 26.3 +02.4	N	22 26.3 +00.0	310 38.9 +02.7	S	08 13.4 +00.0	19							
20	204 48.4 +01.1	N	23 04.3 -00.1	231 28.7 +02.4	N	22 26.3 +00.0	325 41.6 +02.6	S	08 13.4 +00.1	20							
21	219 49.5 +01.1	N	23 04.2 -00.1	246 31.1 +02.5	N	22 26.3 +00.0	340 44.2 +02.6	S	08 13.5 +00.0	21							
22	234 50.6 +01.0	N	23 04.1 -00.1	261 33.6 +02.4	N	22 26.3 +00.0	355 46.8 +02.6	S	08 13.5 +00.1	22							
23	249 51.6 +01.1	N	23 04.0 -00.1	276 36.0 +02.4	N	22 26.3 +00.0	10 49.4 +02.6	S	08 13.6 +00.1	23							
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT			
SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	00'4	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	253°	253°	253°	253°	253°	253°	SHA	279°	279°	279°	279°	279°	279°	SHA			
Greenwich Culmination Time: 06:21						Greenwich Culmination Time: 04:36						Greenwich Culmination Time: 22:16					

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 44.8 +00.2	S 04 04.1 +01.0	152 42.5 -00.5	S 15 47.8 +01.1	180 48.7 -23.7	S 05 29.2 +14.0	00						
01	197 45.0 +00.2	S 04 05.1 +01.0	167 42.0 -00.5	S 15 48.9 +01.0	195 25.0 -23.8	S 05 43.2 +14.0	01						
02	212 45.2 +00.2	S 04 06.1 +00.9	182 41.5 -00.5	S 15 49.9 +01.1	210 01.2 -23.8	S 05 57.2 +13.9	02						
03	227 45.4 +00.2	S 04 07.0 +01.0	197 41.0 -00.5	S 15 51.0 +01.1	224 37.4 -23.8	S 06 11.1 +13.9	03						
04	242 45.6 +00.2	S 04 08.0 +01.0	212 40.5 -00.5	S 15 52.1 +01.0	239 13.6 -23.8	S 06 25.0 +13.9	04						
05	257 45.8 +00.2	S 04 09.0 +00.9	227 40.0 -00.5	S 15 53.1 +01.1	253 49.8 -23.8	S 06 38.9 +13.9	05						
06	272 46.0 +00.2	S 04 09.9 +01.0	242 39.5 -00.5	S 15 54.2 +01.0	268 26.0 -23.9	S 06 52.8 +13.8	06						
07	287 46.2 +00.2	S 04 10.9 +01.0	257 39.0 -00.5	S 15 55.2 +01.1	283 02.1 -23.9	S 07 06.6 +13.9	07						
08	302 46.4 +00.1	S 04 11.9 +00.9	272 38.5 -00.5	S 15 56.3 +01.0	297 38.2 -23.9	S 07 20.5 +13.7	08						
09	317 46.5 +00.2	S 04 12.8 +01.0	287 38.0 -00.5	S 15 57.3 +01.1	312 14.3 -24.0	S 07 34.2 +13.8	09						
10	332 46.7 +00.2	S 04 13.8 +01.0	302 37.5 -00.5	S 15 58.4 +01.0	326 50.3 -24.0	S 07 48.0 +13.8	10						
11	347 46.9 +00.2	S 04 14.8 +00.9	317 37.0 -00.5	S 15 59.4 +01.0	341 26.3 -24.0	S 08 01.8 +13.7	11						
12	2 47.1 +00.2	S 04 15.7 +01.0	332 36.5 -00.5	S 16 00.4 +01.1	356 02.3 -24.1	S 08 15.5 +13.7	12						
13	17 47.3 +00.2	S 04 16.7 +01.0	347 36.0 -00.5	S 16 01.5 +01.0	10 38.2 -24.1	S 08 29.2 +13.6	13						
14	32 47.5 +00.2	S 04 17.7 +00.9	2 35.5 -00.5	S 16 02.5 +01.1	25 14.1 -24.1	S 08 42.8 +13.7	14						
15	47 47.7 +00.2	S 04 18.6 +01.0	17 35.0 -00.6	S 16 03.6 +01.0	39 50.0 -24.2	S 08 56.5 +13.6	15						
16	62 47.9 +00.2	S 04 19.6 +00.9	32 34.4 -00.5	S 16 04.6 +01.1	54 25.8 -24.2	S 09 10.1 +13.5	16						
17	77 48.1 +00.2	S 04 20.5 +01.0	47 33.9 -00.5	S 16 05.7 +01.0	69 01.6 -24.2	S 09 23.6 +13.6	17						
18	92 48.3 +00.2	S 04 21.5 +01.0	62 33.4 -00.5	S 16 06.7 +01.1	83 37.4 -24.3	S 09 37.2 +13.5	18						
19	107 48.5 +00.2	S 04 22.5 +00.9	77 32.9 -00.5	S 16 07.8 +01.0	98 13.1 -24.3	S 09 50.7 +13.4	19						
20	122 48.7 +00.2	S 04 23.4 +01.0	92 32.4 -00.5	S 16 08.8 +01.0	112 48.8 -24.3	S 10 04.1 +13.5	20						
21	137 48.9 +00.1	S 04 24.4 +01.0	107 31.9 -00.5	S 16 09.8 +01.1	127 24.5 -24.4	S 10 17.6 +13.4	21						
22	152 49.0 +00.2	S 04 25.4 +00.9	122 31.4 -00.5	S 16 10.9 +01.0	142 00.1 -24.4	S 10 31.0 +13.3	22						
23	167 49.2 +00.2	S 04 26.3 +01.0	137 30.9 -00.5	S 16 11.9 +01.1	156 35.7 -24.5	S 10 44.3 +13.4	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'0 16'0 16'0 16'0 16'0 16'0		SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 14'7 14'7 14'7 14'7 14'7 14'7								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 53'9 53'9 53'9 53'9 54'0 54'0								
	SHA 170° 170° 170° 170° 170° 170°		SHA 140° 140° 140° 140° 140° 139°		SHA 168° 166° 164° 162° 161° 159°								
	Greenwich Culmination Time: 11:48		Greenwich Culmination Time: 13:49		Greenwich Culmination Time: 12:16								

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	264 52.7 +01.0	N 23 03.9 -00.1	291 38.4 +02.4	N 22 26.3 +00.0	25 52.0 +02.6	S 08 13.7 +00.0	00						
01	279 53.7 +01.1	N 23 03.8 +00.0	306 40.8 +02.4	N 22 26.3 +00.0	40 54.6 +02.7	S 08 13.7 +00.1	01						
02	294 54.8 +01.1	N 23 03.8 -00.1	321 43.2 +02.4	N 22 26.3 +00.0	55 57.3 +02.6	S 08 13.8 +00.0	02						
03	309 55.9 +01.0	N 23 03.7 -00.1	336 45.6 +02.4	N 22 26.3 +00.0	70 59.9 +02.6	S 08 13.8 +00.1	03						
04	324 56.9 +01.1	N 23 03.6 -00.1	351 48.0 +02.4	N 22 26.3 +00.0	86 02.5 +02.6	S 08 13.9 +00.1	04						
05	339 58.0 +01.1	N 23 03.5 -00.1	6 50.4 +02.4	N 22 26.3 +00.0	101 05.1 +02.6	S 08 14.0 +00.0	05						
06	354 59.1 +01.0	N 23 03.4 -00.1	21 52.8 +02.4	N 22 26.3 +00.0	116 07.7 +02.6	S 08 14.0 +00.1	06						
07	10 00.1 +01.1	N 23 03.3 -00.1	36 55.2 +02.4	N 22 26.3 +00.0	131 10.3 +02.6	S 08 14.1 +00.0	07						
08	25 01.2 +01.1	N 23 03.2 -00.1	51 57.6 +02.4	N 22 26.3 +00.0	146 12.9 +02.7	S 08 14.1 +00.1	08						
09	40 02.3 +01.0	N 23 03.1 -00.1	67 00.0 +02.5	N 22 26.3 +00.0	161 15.6 +02.6	S 08 14.2 +00.1	09						
10	55 03.3 +01.1	N 23 03.0 -00.1	82 02.5 +02.4	N 22 26.3 +00.0	176 18.2 +02.6	S 08 14.3 +00.0	10						
11	70 04.4 +01.1	N 23 02.9 -00.1	97 04.9 +02.4	N 22 26.3 +00.0	191 20.8 +02.6	S 08 14.3 +00.1	11						
12	85 05.5 +01.0	N 23 02.8 -00.1	112 07.3 +02.4	N 22 26.3 +00.0	206 23.4 +02.6	S 08 14.4 +00.0	12						
13	100 06.5 +01.1	N 23 02.7 -00.1	127 09.7 +02.4	N 22 26.3 +00.0	221 26.0 +02.6	S 08 14.4 +00.1	13						
14	115 07.6 +01.1	N 23 02.6 -00.1	142 12.1 +02.4	N 22 26.3 +00.0	236 28.6 +02.6	S 08 14.5 +00.1	14						
15	130 08.7 +01.0	N 23 02.5 -00.1	157 14.5 +02.4	N 22 26.3 +00.0	251 31.2 +02.7	S 08 14.6 +00.0	15						
16	145 09.7 +01.1	N 23 02.4 -00.1	172 16.9 +02.4	N 22 26.3 +00.0	266 33.9 +02.6	S 08 14.6 +00.1	16						
17	160 10.8 +01.1	N 23 02.3 -00.1	187 19.3 +02.5	N 22 26.3 +00.0	281 36.5 +02.6	S 08 14.7 +00.0	17						
18	175 11.9 +01.1	N 23 02.2 +00.0	202 21.8 +02.4	N 22 26.3 +00.0	296 39.1 +02.6	S 08 14.7 +00.1	18						
19	190 13.0 +01.0	N 23 02.2 -00.1	217 24.2 +02.4	N 22 26.3 +00.0	311 41.7 +02.6	S 08 14.8 +00.1	19						
20	205 14.0 +01.1	N 23 02.1 -00.1	232 26.6 +02.4	N 22 26.3 +00.0	326 44.3 +02.6	S 08 14.9 +00.0	20						
21	220 15.1 +01.1	N 23 02.0 -00.1	247 29.0 +02.4	N 22 26.3 +00.0	341 46.9 +02.6	S 08 14.9 +00.1	21						
22	235 16.2 +01.0	N 23 01.9 -00.1	262 31.4 +02.4	N 22 26.3 +00.0	356 49.5 +02.6	S 08 15.0 +00.0	22						
23	250 17.2 +01.1	N 23 01.8 -00.1	277 33.8 +02.5	N 22 26.3 +00.0	11 52.1 +02.7	S 08 15.0 +00.1	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 00'4 00'4 00'4 00'4 00'4 00'4		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 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0								
	SHA 253° 253° 252° 252° 252° 252°		SHA 279° 279° 279° 279° 279° 279°		SHA 014° 014° 014° 014° 014° 014°								
	Greenwich Culmination Time: 06:20		Greenwich Culmination Time: 04:32		Greenwich Culmination Time: 22:12								

UT	<b>Sun</b>				<b>Venus</b>				<b>Moon</b>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 49.4 +00.2	S 04	27.3 +01.0	152 30.4 -00.6	S 16	13.0 +01.0	171 11.2 -24.5	S 10	57.7 +13.3	00			
01	197 49.6 +00.2	S 04	28.3 +00.9	167 29.8 -00.5	S 16	14.0 +01.0	185 46.7 -24.6	S 11	11.0 +13.2	01			
02	212 49.8 +00.2	S 04	29.2 +01.0	182 29.3 -00.5	S 16	15.0 +01.1	200 22.1 -24.6	S 11	24.2 +13.2	02			
03	227 50.0 +00.2	S 04	30.2 +00.9	197 28.8 -00.5	S 16	16.1 +01.0	214 57.5 -24.7	S 11	37.4 +13.2	03			
04	242 50.2 +00.2	S 04	31.1 +01.0	212 28.3 -00.5	S 16	17.1 +01.0	229 32.8 -24.7	S 11	50.6 +13.1	04			
05	257 50.4 +00.2	S 04	32.1 +01.0	227 27.8 -00.5	S 16	18.1 +01.1	244 08.1 -24.7	S 12	03.7 +13.1	05			
06	272 50.6 +00.2	S 04	33.1 +00.9	242 27.3 -00.5	S 16	19.2 +01.0	258 43.4 -24.8	S 12	16.8 +13.1	06			
07	287 50.8 +00.1	S 04	34.0 +01.0	257 26.8 -00.6	S 16	20.2 +01.0	273 18.6 -24.9	S 12	29.9 +13.0	07			
08	302 50.9 +00.2	S 04	35.0 +01.0	272 26.2 -00.5	S 16	21.2 +01.1	287 53.7 -24.9	S 12	42.9 +12.9	08			
09	317 51.1 +00.2	S 04	36.0 +00.9	287 25.7 -00.5	S 16	22.3 +01.0	302 28.8 -24.9	S 12	55.8 +12.9	09			
10	332 51.3 +00.2	S 04	36.9 +01.0	302 25.2 -00.5	S 16	23.3 +01.0	317 03.9 -25.0	S 13	08.7 +12.9	10			
11	347 51.5 +00.2	S 04	37.9 +01.0	317 24.7 -00.5	S 16	24.3 +01.1	331 38.9 -25.1	S 13	21.6 +12.8	11			
12	2 51.7 +00.2	S 04	38.9 +00.9	332 24.2 -00.5	S 16	25.4 +01.0	346 13.8 -25.1	S 13	34.4 +12.8	12			
13	17 51.9 +00.2	S 04	39.8 +01.0	347 23.7 -00.6	S 16	26.4 +01.0	0 48.7 -25.2	S 13	47.2 +12.7	13			
14	32 52.1 +00.2	S 04	40.8 +00.9	2 23.1 -00.5	S 16	27.4 +01.1	15 23.5 -25.2	S 13	59.9 +12.7	14			
15	47 52.3 +00.2	S 04	41.7 +01.0	17 22.6 -00.5	S 16	28.5 +01.0	29 58.3 -25.3	S 14	12.6 +12.6	15			
16	62 52.5 +00.1	S 04	42.7 +01.0	32 22.1 -00.5	S 16	29.5 +01.0	44 33.0 -25.3	S 14	25.2 +12.5	16			
17	77 52.6 +00.2	S 04	43.7 +00.9	47 21.6 -00.5	S 16	30.5 +01.0	59 07.7 -25.4	S 14	37.7 +12.6	17			
18	92 52.8 +00.2	S 04	44.6 +01.0	62 21.1 -00.6	S 16	31.5 +01.1	73 42.3 -25.5	S 14	50.3 +12.4	18			
19	107 53.0 +00.2	S 04	45.6 +00.9	77 20.5 -00.5	S 16	32.6 +01.0	88 16.8 -25.5	S 15	02.7 +12.4	19			
20	122 53.2 +00.2	S 04	46.5 +01.0	92 20.0 -00.5	S 16	33.6 +01.0	102 51.3 -25.6	S 15	15.1 +12.4	20			
21	137 53.4 +00.2	S 04	47.5 +01.0	107 19.5 -00.5	S 16	34.6 +01.0	117 25.7 -25.6	S 15	27.5 +12.3	21			
22	152 53.6 +00.2	S 04	48.5 +00.9	122 19.0 -00.5	S 16	35.6 +01.1	132 00.1 -25.7	S 15	39.8 +12.2	22			
23	167 53.8 +00.2	S 04	49.4 +01.0	137 18.5 -00.6	S 16	36.7 +01.0	146 34.4 -25.8	S 15	52.0 +12.2	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 00'1 00'1 00'1 00'1 00'1 00'1			SD 14'7 14'7 14'7 14'7 14'7 14'7						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 54'0 54'0 54'0 54'1 54'1 54'1						
	SHA 170° 169° 169° 169° 169° 169°			SHA 139° 139° 139° 139° 138° 138°			SHA 157° 155° 153° 152° 150° 148°						
	Greenwich Culmination Time: 11:48			Greenwich Culmination Time: 13:50			Greenwich Culmination Time: 12:56						

  

UT	<b>Mars</b>				<b>Jupiter</b>				<b>Saturn</b>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	265 18.3 +01.1	N 23	01.7 -00.1	292 36.3 +02.4	N 22	26.3 +00.0	26 54.8 +02.6	S 08	15.1 +00.1	00			
01	280 19.4 +01.1	N 23	01.6 -00.1	307 38.7 +02.4	N 22	26.3 +00.0	41 57.4 +02.6	S 08	15.2 +00.0	01			
02	295 20.5 +01.0	N 23	01.5 -00.1	322 41.1 +02.4	N 22	26.3 +00.0	56 60.0 +02.6	S 08	15.2 +00.1	02			
03	310 21.5 +01.1	N 23	01.4 -00.1	337 43.5 +02.4	N 22	26.3 +00.0	72 02.6 +02.6	S 08	15.3 +00.0	03			
04	325 22.6 +01.1	N 23	01.3 -00.1	352 45.9 +02.4	N 22	26.3 +00.0	87 05.2 +02.6	S 08	15.3 +00.1	04			
05	340 23.7 +01.1	N 23	01.2 -00.1	7 48.3 +02.5	N 22	26.3 +00.0	102 07.8 +02.6	S 08	15.4 +00.0	05			
06	355 24.8 +01.0	N 23	01.1 -00.1	22 50.8 +02.4	N 22	26.3 +00.0	117 10.4 +02.6	S 08	15.4 +00.1	06			
07	10 25.8 +01.1	N 23	01.0 -00.1	37 53.2 +02.4	N 22	26.3 +00.0	132 13.0 +02.7	S 08	15.5 +00.1	07			
08	25 26.9 +01.1	N 23	00.9 -00.1	52 55.6 +02.4	N 22	26.3 +00.0	147 15.7 +02.6	S 08	15.6 +00.0	08			
09	40 28.0 +01.1	N 23	00.8 -00.1	67 58.0 +02.4	N 22	26.3 +00.0	162 18.3 +02.6	S 08	15.6 +00.1	09			
10	55 29.1 +01.1	N 23	00.7 -00.1	83 00.4 +02.5	N 22	26.3 +00.0	177 20.9 +02.6	S 08	15.7 +00.0	10			
11	70 30.2 +01.0	N 23	00.6 -00.1	98 02.9 +02.4	N 22	26.3 +00.1	192 23.5 +02.6	S 08	15.7 +00.1	11			
12	85 31.2 +01.1	N 23	00.5 -00.1	113 05.3 +02.4	N 22	26.4 +00.0	207 26.1 +02.6	S 08	15.8 +00.1	12			
13	100 32.3 +01.1	N 23	00.4 -00.1	128 07.7 +02.4	N 22	26.4 +00.0	222 28.7 +02.6	S 08	15.9 +00.0	13			
14	115 33.4 +01.1	N 23	00.3 -00.1	143 10.1 +02.4	N 22	26.4 +00.0	237 31.3 +02.6	S 08	15.9 +00.1	14			
15	130 34.5 +01.1	N 23	00.2 -00.1	158 12.5 +02.5	N 22	26.4 +00.0	252 33.9 +02.7	S 08	16.0 +00.0	15			
16	145 35.6 +01.0	N 23	00.1 -00.1	173 15.0 +02.4	N 22	26.4 +00.0	267 36.6 +02.6	S 08	16.0 +00.1	16			
17	160 36.6 +01.1	N 23	00.0 -00.1	188 17.4 +02.4	N 22	26.4 +00.0	282 39.2 +02.6	S 08	16.1 +00.0	17			
18	175 37.7 +01.1	N 22	59.9 -00.1	203 19.8 +02.4	N 22	26.4 +00.0	297 41.8 +02.6	S 08	16.1 +00.1	18			
19	190 38.8 +01.1	N 22	59.8 -00.1	218 22.2 +02.5	N 22	26.4 +00.0	312 44.4 +02.6	S 08	16.2 +00.1	19			
20	205 39.9 +01.1	N 22	59.7 -00.1	233 24.7 +02.4	N 22	26.4 +00.0	327 47.0 +02.6	S 08	16.3 +00.0	20			
21	220 41.0 +01.1	N 22	59.6 -00.1	248 27.1 +02.4	N 22	26.4 +00.0	342 49.6 +02.6	S 08	16.3 +00.1	21			
22	235 42.1 +01.0	N 22	59.5 -00.1	263 29.5 +02.4	N 22	26.4 +00.0	357 52.2 +02.6	S 08	16.4 +00.0	22			
23	250 43.1 +01.1	N 22	59.4 -00.1	278 31.9 +02.5	N 22	26.4 +00.0	12 54.8 +02.6	S 08	16.4 +00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			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 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 252° 252° 252° 252° 252° 252°			SHA 279° 279° 279° 279° 279° 279°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 06:18			Greenwich Culmination Time: 04:28			Greenwich Culmination Time: 22:08						

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 54.0 +00.1	S	04 50.4 +01.0	152 17.9 -00.5	S	16 37.7 +01.0	161 08.6 -25.8	S	16 04.2 +12.1	00			
01	197 54.1 +00.2	S	04 51.4 +00.9	167 17.4 -00.5	S	16 38.7 +01.0	175 42.8 -25.9	S	16 16.3 +12.1	01			
02	212 54.3 +00.2	S	04 52.3 +01.0	182 16.9 -00.5	S	16 39.7 +01.1	190 16.9 -26.0	S	16 28.4 +12.0	02			
03	227 54.5 +00.2	S	04 53.3 +00.9	197 16.4 -00.6	S	16 40.8 +01.0	204 50.9 -26.0	S	16 40.4 +11.9	03			
04	242 54.7 +00.2	S	04 54.2 +01.0	212 15.8 -00.5	S	16 41.8 +01.0	219 24.9 -26.1	S	16 52.3 +11.9	04			
05	257 54.9 +00.2	S	04 55.2 +01.0	227 15.3 -00.5	S	16 42.8 +01.0	233 58.8 -26.2	S	17 04.2 +11.8	05			
06	272 55.1 +00.2	S	04 56.2 +00.9	242 14.8 -00.6	S	16 43.8 +01.0	248 32.6 -26.2	S	17 16.0 +11.7	06			
07	287 55.3 +00.1	S	04 57.1 +01.0	257 14.2 -00.5	S	16 44.8 +01.1	263 06.4 -26.3	S	17 27.7 +11.7	07			
08	302 55.4 +00.2	S	04 58.1 +00.9	272 13.7 -00.5	S	16 45.9 +01.0	277 40.1 -26.4	S	17 39.4 +11.6	08			
09	317 55.6 +00.2	S	04 59.0 +01.0	287 13.2 -00.5	S	16 46.9 +01.0	292 13.7 -26.4	S	17 51.0 +11.6	09			
10	332 55.8 +00.2	S	05 00.0 +01.0	302 12.7 -00.6	S	16 47.9 +01.0	306 47.3 -26.5	S	18 02.6 +11.5	10			
11	347 56.0 +00.2	S	05 01.0 +00.9	317 12.1 -00.5	S	16 48.9 +01.0	321 20.8 -26.6	S	18 14.1 +11.4	11			
12	2 56.2 +00.2	S	05 01.9 +01.0	332 11.6 -00.5	S	16 49.9 +01.0	335 54.2 -26.7	S	18 25.5 +11.3	12			
13	17 56.4 +00.2	S	05 02.9 +00.9	347 11.1 -00.6	S	16 50.9 +01.0	350 27.5 -26.7	S	18 36.8 +11.3	13			
14	32 56.6 +00.1	S	05 03.8 +01.0	2 10.5 -00.5	S	16 51.9 +01.1	5 00.8 -26.8	S	18 48.1 +11.2	14			
15	47 56.7 +00.2	S	05 04.8 +01.0	17 10.0 -00.5	S	16 53.0 +01.0	19 34.0 -26.9	S	18 59.3 +11.1	15			
16	62 56.9 +00.2	S	05 05.8 +00.9	32 09.5 -00.5	S	16 54.0 +01.0	34 07.1 -27.0	S	19 10.4 +11.0	16			
17	77 57.1 +00.2	S	05 06.7 +01.0	47 09.0 -00.6	S	16 55.0 +01.0	48 40.1 -27.0	S	19 21.4 +11.0	17			
18	92 57.3 +00.2	S	05 07.7 +00.9	62 08.4 -00.5	S	16 56.0 +01.0	63 13.1 -27.1	S	19 32.4 +10.9	18			
19	107 57.5 +00.2	S	05 08.6 +01.0	77 07.9 -00.5	S	16 57.0 +01.0	77 46.0 -27.2	S	19 43.3 +10.8	19			
20	122 57.7 +00.1	S	05 09.6 +01.0	92 07.4 -00.6	S	16 58.0 +01.0	92 18.8 -27.3	S	19 54.1 +10.8	20			
21	137 57.8 +00.2	S	05 10.6 +00.9	107 06.8 -00.5	S	16 59.0 +01.0	106 51.5 -27.3	S	20 04.9 +10.6	21			
22	152 58.0 +00.2	S	05 11.5 +01.0	122 06.3 -00.5	S	17 00.0 +01.0	121 24.2 -27.4	S	20 15.5 +10.6	22			
23	167 58.2 +00.2	S	05 12.5 +00.9	137 05.8 -00.6	S	17 01.0 +01.0	135 56.8 -27.5	S	20 26.1 +10.5	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 00'1 00'1 00'1 00'1 00'1 00'1			SD 14'8 14'8 14'8 14'8 14'8 14'8						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 54'1 54'2 54'2 54'3 54'3 54'3						
	SHA 169° 169° 168° 168° 168° 168°			SHA 138° 138° 138° 137° 137° 137°			SHA 146° 144° 142° 140° 138° 136°						
	Greenwich Culmination Time: 11:48			Greenwich Culmination Time: 13:51			Greenwich Culmination Time: 13:39						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	265 44.2 +01.1	N	22 59.3 -00.1	293 34.4 +02.4	N	22 26.4 +00.0	27 57.4 +02.7	S	08 16.5 +00.1	00			
01	280 45.3 +01.1	N	22 59.2 -00.1	308 36.8 +02.4	N	22 26.4 +00.0	43 00.1 +02.6	S	08 16.6 +00.0	01			
02	295 46.4 +01.1	N	22 59.1 -00.1	323 39.2 +02.4	N	22 26.4 +00.0	58 02.7 +02.6	S	08 16.6 +00.1	02			
03	310 47.5 +01.1	N	22 59.0 -00.1	338 41.6 +02.5	N	22 26.4 +00.0	73 05.3 +02.6	S	08 16.7 +00.0	03			
04	325 48.6 +01.1	N	22 58.9 -00.1	353 44.1 +02.4	N	22 26.4 +00.0	88 07.9 +02.6	S	08 16.7 +00.1	04			
05	340 49.7 +01.1	N	22 58.8 -00.1	8 46.5 +02.4	N	22 26.4 +00.0	103 10.5 +02.6	S	08 16.8 +00.0	05			
06	355 50.8 +01.0	N	22 58.7 -00.1	23 48.9 +02.4	N	22 26.4 +00.0	118 13.1 +02.6	S	08 16.8 +00.1	06			
07	10 51.8 +01.1	N	22 58.6 -00.1	38 51.3 +02.5	N	22 26.4 +00.0	133 15.7 +02.6	S	08 16.9 +00.1	07			
08	25 52.9 +01.1	N	22 58.5 -00.1	53 53.8 +02.4	N	22 26.4 +00.0	148 18.3 +02.6	S	08 17.0 +00.0	08			
09	40 54.0 +01.1	N	22 58.4 -00.1	68 56.2 +02.4	N	22 26.4 +00.0	163 20.9 +02.6	S	08 17.0 +00.1	09			
10	55 55.1 +01.1	N	22 58.3 -00.1	83 58.6 +02.5	N	22 26.4 +00.0	178 23.5 +02.7	S	08 17.1 +00.0	10			
11	70 56.2 +01.1	N	22 58.2 -00.1	99 01.1 +02.4	N	22 26.4 +00.0	193 26.2 +02.6	S	08 17.1 +00.1	11			
12	85 57.3 +01.1	N	22 58.1 -00.1	114 03.5 +02.4	N	22 26.4 +00.0	208 28.8 +02.6	S	08 17.2 +00.0	12			
13	100 58.4 +01.1	N	22 58.0 -00.1	129 05.9 +02.4	N	22 26.4 +00.0	223 31.4 +02.6	S	08 17.2 +00.1	13			
14	115 59.5 +01.1	N	22 57.9 -00.1	144 08.3 +02.5	N	22 26.4 +00.0	238 34.0 +02.6	S	08 17.3 +00.1	14			
15	131 00.6 +01.1	N	22 57.8 -00.1	159 10.8 +02.4	N	22 26.4 +00.0	253 36.6 +02.6	S	08 17.4 +00.0	15			
16	146 01.7 +01.1	N	22 57.7 -00.1	174 13.2 +02.4	N	22 26.4 +00.0	268 39.2 +02.6	S	08 17.4 +00.1	16			
17	161 02.8 +01.0	N	22 57.6 -00.1	189 15.6 +02.5	N	22 26.4 +00.0	283 41.8 +02.6	S	08 17.5 +00.0	17			
18	176 03.8 +01.1	N	22 57.5 -00.1	204 18.1 +02.4	N	22 26.4 +00.0	298 44.4 +02.6	S	08 17.5 +00.1	18			
19	191 04.9 +01.1	N	22 57.4 -00.1	219 20.5 +02.4	N	22 26.4 +00.0	313 47.0 +02.6	S	08 17.6 +00.0	19			
20	206 06.0 +01.1	N	22 57.3 -00.1	234 22.9 +02.5	N	22 26.4 +00.0	328 49.6 +02.7	S	08 17.6 +00.1	20			
21	221 07.1 +01.1	N	22 57.2 -00.1	249 25.4 +02.4	N	22 26.4 +00.0	343 52.3 +02.6	S	08 17.7 +00.1	21			
22	236 08.2 +01.1	N	22 57.1 -00.1	264 27.8 +02.4	N	22 26.4 +00.0	358 54.9 +02.6	S	08 17.8 +00.0	22			
23	251 09.3 +01.1	N	22 57.0 -00.1	279 30.2 +02.5	N	22 26.4 +00.0	13 57.5 +02.6	S	08 17.8 +00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			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 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 252° 251° 251° 251° 251° 251°			SHA 279° 279° 279° 279° 279° 279°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 06:16			Greenwich Culmination Time: 04:24			Greenwich Culmination Time: 22:04						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 58.4 +00.2	S	05 13.4 +01.0	152 05.2 -00.5	S	17 02.0 +01.0	150 29.3 -27.6	S	20 36.6 +10.4				
01	197 58.6 +00.2	S	05 14.4 +01.0	167 04.7 -00.6	S	17 03.0 +01.0	165 01.7 -27.7	S	20 47.0 +10.4				
02	212 58.8 +00.1	S	05 15.4 +00.9	182 04.1 -00.5	S	17 04.0 +01.0	179 34.0 -27.7	S	20 57.4 +10.2				
03	227 58.9 +00.2	S	05 16.3 +01.0	197 03.6 -00.5	S	17 05.0 +01.0	194 06.3 -27.9	S	21 07.6 +10.2				
04	242 59.1 +00.2	S	05 17.3 +00.9	212 03.1 -00.6	S	17 06.0 +01.0	208 38.4 -27.9	S	21 17.8 +10.1				
05	257 59.3 +00.2	S	05 18.2 +01.0	227 02.5 -00.5	S	17 07.0 +01.1	223 10.5 -28.0	S	21 27.9 +09.9				
06	272 59.5 +00.2	S	05 19.2 +00.9	242 02.0 -00.5	S	17 08.1 +01.0	237 42.5 -28.0	S	21 37.8 +09.9				
07	287 59.7 +00.2	S	05 20.1 +01.0	257 01.5 -00.6	S	17 09.1 +01.0	252 14.5 -28.2	S	21 47.7 +09.9				
08	302 59.9 +00.1	S	05 21.1 +01.0	272 00.9 -00.5	S	17 10.1 +01.0	266 46.3 -28.2	S	21 57.6 +09.7				
09	318 00.0 +00.2	S	05 22.1 +00.9	287 00.4 -00.6	S	17 11.1 +00.9	281 18.1 -28.4	S	22 07.3 +09.6				
10	333 00.2 +00.2	S	05 23.0 +01.0	301 59.8 -00.5	S	17 12.0 +01.0	295 49.7 -28.4	S	22 16.9 +09.5				
11	348 00.4 +00.2	S	05 24.0 +00.9	316 59.3 -00.5	S	17 13.0 +01.0	310 21.3 -28.4	S	22 26.4 +09.5				
12	3 00.6 +00.2	S	05 24.9 +01.0	331 58.8 -00.6	S	17 14.0 +01.0	324 52.9 -28.6	S	22 35.9 +09.3				
13	18 00.8 +00.1	S	05 25.9 +00.9	346 58.2 -00.5	S	17 15.0 +01.0	339 24.3 -28.7	S	22 45.2 +09.3				
14	33 00.9 +00.2	S	05 26.8 +01.0	1 57.7 -00.6	S	17 16.0 +01.0	353 55.6 -28.7	S	22 54.5 +09.1				
15	48 01.1 +00.2	S	05 27.8 +01.0	16 57.1 -00.5	S	17 17.0 +01.0	8 26.9 -28.9	S	23 03.6 +09.1				
16	63 01.3 +00.2	S	05 28.8 +00.9	31 56.6 -00.6	S	17 18.0 +01.0	22 58.0 -28.9	S	23 12.7 +08.9				
17	78 01.5 +00.2	S	05 29.7 +01.0	46 56.0 -00.5	S	17 19.0 +01.0	37 29.1 -29.0	S	23 21.6 +08.9				
18	93 01.7 +00.1	S	05 30.7 +00.9	61 55.5 -00.5	S	17 20.0 +01.0	52 00.1 -29.1	S	23 30.5 +08.8				
19	108 01.8 +00.2	S	05 31.6 +01.0	76 55.0 -00.6	S	17 21.0 +01.0	66 31.0 -29.1	S	23 39.3 +08.6				
20	123 02.0 +00.2	S	05 32.6 +00.9	91 54.4 -00.5	S	17 22.0 +01.0	81 01.9 -29.3	S	23 47.9 +08.6				
21	138 02.2 +00.2	S	05 33.5 +01.0	106 53.9 -00.6	S	17 23.0 +01.0	95 32.6 -29.4	S	23 56.5 +08.4				
22	153 02.4 +00.2	S	05 34.5 +01.0	121 53.3 -00.5	S	17 24.0 +01.0	110 03.2 -29.4	S	24 04.9 +08.3				
23	168 02.6 +00.1	S	05 35.5 +00.9	136 52.8 -00.6	S	17 25.0 +01.0	124 33.8 -29.5	S	24 13.2 +08.3				
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22				UT 02 06 10 14 18 22					
	SD 16'0 16'0 16'0 16'0 16'0 16'0			SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 14'8 14'8 14'9 14'9 14'9 14'9					
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 54'4 54'5 54'5 54'6 54'6 54'7					
	SHA 168° 168° 167° 167° 167° 167°			SHA 137° 137° 136° 136° 136° 136°				SHA 134° 132° 130° 128° 126° 124°					
	Greenwich Culmination Time: 11:47			Greenwich Culmination Time: 13:52				Greenwich Culmination Time: 14:25					

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	266 10.4 +01.1	N	22 56.9 -00.1	294 32.7 +02.4	N	22 26.4 +00.0	29 00.1 +02.6	S	08 17.9 +00.0				
01	281 11.5 +01.1	N	22 56.8 -00.1	309 35.1 +02.4	N	22 26.4 +00.0	44 02.7 +02.6	S	08 17.9 +00.1				
02	296 12.6 +01.1	N	22 56.7 -00.1	324 37.5 +02.5	N	22 26.4 +00.0	59 05.3 +02.6	S	08 18.0 +00.0				
03	311 13.7 +01.1	N	22 56.6 -00.1	339 40.0 +02.4	N	22 26.4 +00.0	74 07.9 +02.6	S	08 18.0 +00.1				
04	326 14.8 +01.1	N	22 56.5 -00.1	354 42.4 +02.4	N	22 26.4 +00.0	89 10.5 +02.6	S	08 18.1 +00.1				
05	341 15.9 +01.1	N	22 56.4 -00.1	9 44.8 +02.5	N	22 26.4 +00.0	104 13.1 +02.6	S	08 18.2 +00.0				
06	356 17.0 +01.1	N	22 56.3 -00.1	24 47.3 +02.4	N	22 26.4 +00.0	119 15.7 +02.6	S	08 18.2 +00.1				
07	11 18.1 +01.1	N	22 56.2 -00.1	39 49.7 +02.5	N	22 26.4 +00.0	134 18.3 +02.6	S	08 18.3 +00.0				
08	26 19.2 +01.1	N	22 56.1 -00.1	54 52.2 +02.4	N	22 26.4 +00.0	149 20.9 +02.6	S	08 18.3 +00.1				
09	41 20.3 +01.1	N	22 56.0 -00.1	69 54.6 +02.4	N	22 26.4 +00.0	164 23.5 +02.7	S	08 18.4 +00.0				
10	56 21.4 +01.1	N	22 55.9 -00.1	84 57.0 +02.5	N	22 26.4 +00.0	179 26.2 +02.6	S	08 18.4 +00.1				
11	71 22.5 +01.1	N	22 55.8 -00.1	99 59.5 +02.4	N	22 26.4 +00.0	194 28.8 +02.6	S	08 18.5 +00.0				
12	86 23.6 +01.1	N	22 55.7 -00.1	115 01.9 +02.4	N	22 26.4 +00.0	209 31.4 +02.6	S	08 18.5 +00.1				
13	101 24.7 +01.1	N	22 55.6 -00.1	130 04.3 +02.5	N	22 26.4 +00.0	224 34.0 +02.6	S	08 18.6 +00.1				
14	116 25.8 +01.1	N	22 55.5 -00.1	145 06.8 +02.4	N	22 26.4 +00.0	239 36.6 +02.6	S	08 18.7 +00.0				
15	131 26.9 +01.1	N	22 55.4 -00.1	160 09.2 +02.5	N	22 26.4 +00.0	254 39.2 +02.6	S	08 18.7 +00.1				
16	146 28.0 +01.2	N	22 55.3 -00.1	175 11.7 +02.4	N	22 26.4 +00.0	269 41.8 +02.6	S	08 18.8 +00.0				
17	161 29.2 +01.1	N	22 55.2 -00.1	190 14.1 +02.4	N	22 26.4 +00.0	284 44.4 +02.6	S	08 18.8 +00.1				
18	176 30.3 +01.1	N	22 55.1 -00.1	205 16.5 +02.5	N	22 26.4 +00.0	299 47.0 +02.6	S	08 18.9 +00.0				
19	191 31.4 +01.1	N	22 55.0 -00.1	220 19.0 +02.4	N	22 26.4 +00.0	314 49.6 +02.6	S	08 18.9 +00.1				
20	206 32.5 +01.1	N	22 54.9 -00.1	235 21.4 +02.5	N	22 26.4 +00.0	329 52.2 +02.6	S	08 19.0 +00.1				
21	221 33.6 +01.1	N	22 54.8 -00.1	250 23.9 +02.4	N	22 26.4 +00.0	344 54.8 +02.6	S	08 19.1 +00.0				
22	236 34.7 +01.1	N	22 54.7 -00.1	265 26.3 +02.5	N	22 26.4 +00.0	359 57.4 +02.6	S	08 19.1 +00.1				
23	251 35.8 +01.1	N	22 54.6 -00.1	280 28.8 +02.4	N	22 26.4 +00.0	15 00.0 +02.6	S	08 19.2 +00.0				
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22				UT 02 06 10 14 18 22					
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4				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 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0					
	SHA 251° 251° 251° 251° 251° 251°			SHA 279° 279° 279° 279° 279° 279°				SHA 014° 014° 014° 014° 014° 014°					
	Greenwich Culmination Time: 06:14			Greenwich Culmination Time: 04:21				Greenwich Culmination Time: 22:00					

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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	02.7 +00.2	S 05 36.4 +01.0		151	52.2 -00.5	S 17 26.0 +00.9		139	04.3 -29.6	S 24 21.5 +08.1		00
01	198	02.9 +00.2	S 05 37.4 +00.9		166	51.7 -00.6	S 17 26.9 +01.0		153	34.7 -29.7	S 24 29.6 +08.0		01
02	213	03.1 +00.2	S 05 38.3 +01.0		181	51.1 -00.5	S 17 27.9 +01.0		168	05.0 -29.8	S 24 37.6 +07.9		02
03	228	03.3 +00.2	S 05 39.3 +00.9		196	50.6 -00.6	S 17 28.9 +01.0		182	35.2 -29.8	S 24 45.5 +07.8		03
04	243	03.5 +00.1	S 05 40.2 +01.0		211	50.0 -00.5	S 17 29.9 +01.0		197	05.4 -30.0	S 24 53.3 +07.7		04
05	258	03.6 +00.2	S 05 41.2 +00.9		226	49.5 -00.6	S 17 30.9 +01.0		211	35.4 -30.0	S 25 01.0 +07.6		05
06	273	03.8 +00.2	S 05 42.1 +01.0		241	48.9 -00.5	S 17 31.9 +01.0		226	05.4 -30.2	S 25 08.6 +07.4		06
07	288	04.0 +00.2	S 05 43.1 +01.0		256	48.4 -00.6	S 17 32.9 +00.9		240	35.2 -30.2	S 25 16.0 +07.4		07
08	303	04.2 +00.1	S 05 44.1 +00.9		271	47.8 -00.5	S 17 33.8 +01.0		255	05.0 -30.3	S 25 23.4 +07.2		08
09	318	04.3 +00.2	S 05 45.0 +01.0		286	47.3 -00.6	S 17 34.8 +01.0		269	34.7 -30.3	S 25 30.6 +07.1		09
10	333	04.5 +00.2	S 05 46.0 +00.9		301	46.7 -00.5	S 17 35.8 +01.0		284	04.4 -30.5	S 25 37.7 +07.0		10
11	348	04.7 +00.2	S 05 46.9 +01.0		316	46.2 -00.6	S 17 36.8 +01.0		298	33.9 -30.5	S 25 44.7 +06.9		11
12	3	04.9 +00.2	S 05 47.9 +00.9		331	45.6 -00.5	S 17 37.8 +00.9		313	03.4 -30.7	S 25 51.6 +06.7		12
13	18	05.1 +00.1	S 05 48.8 +01.0		346	45.1 -00.6	S 17 38.7 +01.0		327	32.7 -30.7	S 25 58.3 +06.6		13
14	33	05.2 +00.2	S 05 49.8 +00.9		1	44.5 -00.5	S 17 39.7 +01.0		342	02.0 -30.8	S 26 04.9 +06.5		14
15	48	05.4 +00.2	S 05 50.7 +01.0		16	44.0 -00.6	S 17 40.7 +01.0		356	31.2 -30.9	S 26 11.4 +06.4		15
16	63	05.6 +00.2	S 05 51.7 +00.9		31	43.4 -00.5	S 17 41.7 +00.9		11	00.3 -30.9	S 26 17.8 +06.3		16
17	78	05.8 +00.1	S 05 52.6 +01.0		46	42.9 -00.6	S 17 42.6 +01.0		25	29.4 -31.1	S 26 24.1 +06.1		17
18	93	05.9 +00.2	S 05 53.6 +01.0		61	42.3 -00.6	S 17 43.6 +01.0		39	58.3 -31.1	S 26 30.2 +06.0		18
19	108	06.1 +00.2	S 05 54.6 +00.9		76	41.7 -00.5	S 17 44.6 +01.0		54	27.2 -31.2	S 26 36.2 +05.9		19
20	123	06.3 +00.2	S 05 55.5 +01.0		91	41.2 -00.6	S 17 45.6 +00.9		68	56.0 -31.3	S 26 42.1 +05.7		20
21	138	06.5 +00.1	S 05 56.5 +00.9		106	40.6 -00.5	S 17 46.5 +01.0		83	24.7 -31.4	S 26 47.8 +05.7		21
22	153	06.6 +00.2	S 05 57.4 +01.0		121	40.1 -00.6	S 17 47.5 +01.0		97	53.3 -31.4	S 26 53.5 +05.4		22
23	168	06.8 +00.2	S 05 58.4 +00.9		136	39.5 -00.5	S 17 48.5 +01.0		112	21.9 -31.6	S 26 58.9 +05.4		23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 16'0 16'0 16'0 16'0 16'0 16'0				SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 14'9 14'9 15'0 15'0 15'0 15'0				
	HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 54'8 54'8 54'9 55'0 55'1 55'2				
	SHA 167° 167° 167° 166° 166° 166°				SHA 136° 135° 135° 135° 135° 135°				SHA 122° 120° 118° 115° 113° 111°				
	Greenwich Culmination Time: 11:47				Greenwich Culmination Time: 13:53				Greenwich Culmination Time: 15:14				

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	266	36.9 +01.1	N 22 54.5 -00.1		295	31.2 +02.4	N 22 26.4 +00.0		30	02.6 +02.7	S 08 19.2 +00.1		00
01	281	38.0 +01.1	N 22 54.4 -00.1		310	33.6 +02.5	N 22 26.4 +00.0		45	05.3 +02.6	S 08 19.3 +00.0		01
02	296	39.1 +01.1	N 22 54.3 -00.1		325	36.1 +02.4	N 22 26.4 +00.0		60	07.9 +02.6	S 08 19.3 +00.1		02
03	311	40.2 +01.2	N 22 54.2 -00.1		340	38.5 +02.5	N 22 26.4 +00.0		75	10.5 +02.6	S 08 19.4 +00.0		03
04	326	41.4 +01.1	N 22 54.1 -00.1		355	41.0 +02.4	N 22 26.4 +00.0		90	13.1 +02.6	S 08 19.4 +00.1		04
05	341	42.5 +01.1	N 22 54.0 -00.2		10	43.4 +02.5	N 22 26.4 +00.0		105	15.7 +02.6	S 08 19.5 +00.1		05
06	356	43.6 +01.1	N 22 53.8 -00.1		25	45.9 +02.4	N 22 26.4 +00.0		120	18.3 +02.6	S 08 19.6 +00.0		06
07	11	44.7 +01.1	N 22 53.7 -00.1		40	48.3 +02.5	N 22 26.4 +00.0		135	20.9 +02.6	S 08 19.6 +00.1		07
08	26	45.8 +01.1	N 22 53.6 -00.1		55	50.8 +02.4	N 22 26.4 +00.0		150	23.5 +02.6	S 08 19.7 +00.0		08
09	41	46.9 +01.1	N 22 53.5 -00.1		70	53.2 +02.5	N 22 26.4 +00.0		165	26.1 +02.6	S 08 19.7 +00.1		09
10	56	48.0 +01.1	N 22 53.4 -00.1		85	55.7 +02.4	N 22 26.4 +00.0		180	28.7 +02.6	S 08 19.8 +00.0		10
11	71	49.1 +01.2	N 22 53.3 -00.1		100	58.1 +02.4	N 22 26.4 +00.0		195	31.3 +02.6	S 08 19.8 +00.1		11
12	86	50.3 +01.1	N 22 53.2 -00.1		116	00.5 +02.5	N 22 26.4 +00.0		210	33.9 +02.6	S 08 19.9 +00.0		12
13	101	51.4 +01.1	N 22 53.1 -00.1		131	03.0 +02.4	N 22 26.4 +00.0		225	36.5 +02.6	S 08 19.9 +00.1		13
14	116	52.5 +01.1	N 22 53.0 -00.1		146	05.4 +02.5	N 22 26.4 +00.0		240	39.1 +02.6	S 08 20.0 +00.0		14
15	131	53.6 +01.1	N 22 52.9 -00.1		161	07.9 +02.4	N 22 26.4 +00.0		255	41.7 +02.6	S 08 20.0 +00.1		15
16	146	54.7 +01.1	N 22 52.8 -00.1		176	10.3 +02.5	N 22 26.4 +00.0		270	44.3 +02.6	S 08 20.1 +00.1		16
17	161	55.8 +01.2	N 22 52.7 -00.1		191	12.8 +02.4	N 22 26.4 +00.0		285	46.9 +02.6	S 08 20.2 +00.0		17
18	176	57.0 +01.1	N 22 52.6 -00.1		206	15.2 +02.5	N 22 26.4 +00.0		300	49.5 +02.6	S 08 20.2 +00.1		18
19	191	58.1 +01.1	N 22 52.5 -00.1		221	17.7 +02.4	N 22 26.4 +00.0		315	52.1 +02.6	S 08 20.3 +00.0		19
20	206	59.2 +01.1	N 22 52.4 -00.1		236	20.1 +02.5	N 22 26.4 +00.0		330	54.7 +02.6	S 08 20.3 +00.1		20
21	222	00.3 +01.1	N 22 52.3 -00.1		251	22.6 +02.4	N 22 26.4 +00.0		345	57.3 +02.7	S 08 20.4 +00.0		21
22	237	01.4 +01.2	N 22 52.2 -00.1		266	25.0 +02.5	N 22 26.4 +00.0		0	60.0 +02.6	S 08 20.4 +00.1		22
23	252	02.6 +01.1	N 22 52.1 -00.1		281	27.5 +02.5	N 22 26.4 +00.0		16	02.6 +02.6	S 08 20.5 +00.0		23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 00'4 00'4 00'4 00'4 00'4 00'4				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 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 250° 250° 250° 250° 250° 250°				SHA 279° 279° 279° 279° 279° 279°				SHA 014° 014° 014° 014° 014° 014°				
	Greenwich Culmination Time: 06:13				Greenwich Culmination Time: 04:17				Greenwich Culmination Time: 21:56				

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 07.0 +00.2	S	05 59.3 +01.0	151 39.0 -00.6	S	17 49.5 +00.9	126 50.3 -31.6	S	27 04.3 +05.2	00			
01	198 07.2 +00.1	S	06 00.3 +00.9	166 38.4 -00.6	S	17 50.4 +01.0	141 18.7 -31.7	S	27 09.5 +05.1	01			
02	213 07.3 +00.2	S	06 01.2 +01.0	181 37.8 -00.5	S	17 51.4 +01.0	155 47.0 -31.7	S	27 14.6 +05.0	02			
03	228 07.5 +00.2	S	06 02.2 +00.9	196 37.3 -00.6	S	17 52.4 +00.9	170 15.3 -31.9	S	27 19.6 +04.8	03			
04	243 07.7 +00.2	S	06 03.1 +01.0	211 36.7 -00.6	S	17 53.3 +01.0	184 43.4 -31.9	S	27 24.4 +04.7	04			
05	258 07.9 +00.1	S	06 04.1 +00.9	226 36.1 -00.5	S	17 54.3 +01.0	199 11.5 -32.0	S	27 29.1 +04.5	05			
06	273 08.0 +00.2	S	06 05.0 +01.0	241 35.6 -00.6	S	17 55.3 +00.9	213 39.5 -32.0	S	27 33.6 +04.4	06			
07	288 08.2 +00.2	S	06 06.0 +00.9	256 35.0 -00.5	S	17 56.2 +01.0	228 07.5 -32.2	S	27 38.0 +04.3	07			
08	303 08.4 +00.1	S	06 06.9 +01.0	271 34.5 -00.6	S	17 57.2 +01.0	242 35.3 -32.2	S	27 42.3 +04.1	08			
09	318 08.5 +00.2	S	06 07.9 +00.9	286 33.9 -00.6	S	17 58.2 +00.9	257 03.1 -32.3	S	27 46.4 +04.0	09			
10	333 08.7 +00.2	S	06 08.8 +01.0	301 33.3 -00.5	S	17 59.1 +01.0	271 30.8 -32.3	S	27 50.4 +03.8	10			
11	348 08.9 +00.2	S	06 09.8 +00.9	316 32.8 -00.6	S	18 00.1 +00.9	285 58.5 -32.4	S	27 54.2 +03.7	11			
12	3 09.1 +00.1	S	06 10.7 +01.0	331 32.2 -00.6	S	18 01.0 +01.0	300 26.1 -32.5	S	27 57.9 +03.6	12			
13	18 09.2 +00.2	S	06 11.7 +00.9	346 31.6 -00.5	S	18 02.0 +01.0	314 53.6 -32.6	S	28 01.5 +03.4	13			
14	33 09.4 +00.2	S	06 12.6 +01.0	1 31.1 -00.6	S	18 03.0 +00.9	329 21.0 -32.6	S	28 04.9 +03.3	14			
15	48 09.6 +00.2	S	06 13.6 +00.9	16 30.5 -00.6	S	18 03.9 +01.0	343 48.4 -32.6	S	28 08.2 +03.1	15			
16	63 09.8 +00.1	S	06 14.5 +01.0	31 29.9 -00.5	S	18 04.9 +00.9	358 15.8 -32.8	S	28 11.3 +03.0	16			
17	78 09.9 +00.2	S	06 15.5 +00.9	46 29.4 -00.6	S	18 05.8 +01.0	12 43.0 -32.8	S	28 14.3 +02.8	17			
18	93 10.1 +00.2	S	06 16.4 +01.0	61 28.8 -00.6	S	18 06.8 +00.9	27 10.2 -32.9	S	28 17.1 +02.6	18			
19	108 10.3 +00.1	S	06 17.4 +00.9	76 28.2 -00.5	S	18 07.7 +01.0	41 37.3 -32.9	S	28 19.7 +02.6	19			
20	123 10.4 +00.2	S	06 18.3 +01.0	91 27.7 -00.6	S	18 08.7 +01.0	56 04.4 -33.0	S	28 22.3 +02.3	20			
21	138 10.6 +00.2	S	06 19.3 +00.9	106 27.1 -00.6	S	18 09.7 +00.9	70 31.4 -33.0	S	28 24.6 +02.3	21			
22	153 10.8 +00.2	S	06 20.2 +01.0	121 26.5 -00.5	S	18 10.6 +01.0	84 58.4 -33.1	S	28 26.9 +02.0	22			
23	168 11.0 +00.1	S	06 21.2 +00.9	136 26.0 -00.6	S	18 11.6 +00.9	99 25.3 -33.2	S	28 28.9 +02.0	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 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'1 15'1 15'1 15'1 15'2 15'2						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 55'2 55'3 55'4 55'5 55'6 55'7						
	SHA 166° 166° 166° 165° 165° 165°			SHA 134° 134° 134° 134° 134° 133°			SHA 109° 106° 104° 102° 099° 097°						
	Greenwich Culmination Time: 11:47			Greenwich Culmination Time: 13:53			Greenwich Culmination Time: 16:07						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	267 03.7 +01.1	N	22 52.0 -00.2	296 30.0 +02.4	N	22 26.4 +00.0	31 05.2 +02.6	S	08 20.5 +00.1	00			
01	282 04.8 +01.1	N	22 51.8 -00.1	311 32.4 +02.5	N	22 26.4 +00.0	46 07.8 +02.6	S	08 20.6 +00.0	01			
02	297 05.9 +01.2	N	22 51.7 -00.1	326 34.9 +02.4	N	22 26.4 +00.0	61 10.4 +02.6	S	08 20.6 +00.1	02			
03	312 07.1 +01.1	N	22 51.6 -00.1	341 37.3 +02.5	N	22 26.4 +00.0	76 13.0 +02.6	S	08 20.7 +00.1	03			
04	327 08.2 +01.1	N	22 51.5 -00.1	356 39.8 +02.4	N	22 26.4 +00.0	91 15.6 +02.6	S	08 20.8 +00.0	04			
05	342 09.3 +01.1	N	22 51.4 -00.1	11 42.2 +02.5	N	22 26.4 +00.0	106 18.2 +02.6	S	08 20.8 +00.1	05			
06	357 10.4 +01.2	N	22 51.3 -00.1	26 44.7 +02.4	N	22 26.4 +00.0	121 20.8 +02.6	S	08 20.9 +00.0	06			
07	12 11.6 +01.1	N	22 51.2 -00.1	41 47.1 +02.5	N	22 26.4 +00.0	136 23.4 +02.6	S	08 20.9 +00.1	07			
08	27 12.7 +01.1	N	22 51.1 -00.1	56 49.6 +02.4	N	22 26.4 +00.0	151 26.0 +02.6	S	08 21.0 +00.0	08			
09	42 13.8 +01.1	N	22 51.0 -00.1	71 52.0 +02.5	N	22 26.4 +00.0	166 28.6 +02.6	S	08 21.0 +00.1	09			
10	57 14.9 +01.2	N	22 50.9 -00.1	86 54.5 +02.4	N	22 26.4 +00.0	181 31.2 +02.6	S	08 21.1 +00.0	10			
11	72 16.1 +01.1	N	22 50.8 -00.1	101 56.9 +02.5	N	22 26.4 +00.0	196 33.8 +02.6	S	08 21.1 +00.1	11			
12	87 17.2 +01.1	N	22 50.7 -00.1	116 59.4 +02.5	N	22 26.4 +00.0	211 36.4 +02.6	S	08 21.2 +00.0	12			
13	102 18.3 +01.1	N	22 50.6 -00.1	132 01.9 +02.4	N	22 26.4 +00.0	226 39.0 +02.6	S	08 21.2 +00.1	13			
14	117 19.4 +01.2	N	22 50.5 -00.2	147 04.3 +02.5	N	22 26.4 +00.0	241 41.6 +02.6	S	08 21.3 +00.0	14			
15	132 20.6 +01.1	N	22 50.3 -00.1	162 06.8 +02.4	N	22 26.4 +00.0	256 44.2 +02.6	S	08 21.3 +00.1	15			
16	147 21.7 +01.1	N	22 50.2 -00.1	177 09.2 +02.5	N	22 26.4 +00.0	271 46.8 +02.6	S	08 21.4 +00.1	16			
17	162 22.8 +01.2	N	22 50.1 -00.1	192 11.7 +02.5	N	22 26.4 +00.0	286 49.4 +02.6	S	08 21.5 +00.0	17			
18	177 24.0 +01.1	N	22 50.0 -00.1	207 14.2 +02.4	N	22 26.4 +00.0	301 52.0 +02.6	S	08 21.5 +00.1	18			
19	192 25.1 +01.1	N	22 49.9 -00.1	222 16.6 +02.5	N	22 26.4 +00.0	316 54.6 +02.6	S	08 21.6 +00.0	19			
20	207 26.2 +01.2	N	22 49.8 -00.1	237 19.1 +02.4	N	22 26.4 +00.0	331 57.2 +02.6	S	08 21.6 +00.1	20			
21	222 27.4 +01.1	N	22 49.7 -00.1	252 21.5 +02.5	N	22 26.4 +00.0	346 59.8 +02.6	S	08 21.7 +00.0	21			
22	237 28.5 +01.1	N	22 49.6 -00.1	267 24.0 +02.5	N	22 26.4 +00.0	2 02.4 +02.6	S	08 21.7 +00.1	22			
23	252 29.6 +01.2	N	22 49.5 -00.1	282 26.5 +02.4	N	22 26.4 +00.0	17 05.0 +02.6	S	08 21.8 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			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 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 250° 250° 250° 250° 250° 249°			SHA 279° 279° 279° 279° 279° 279°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 06:11			Greenwich Culmination Time: 04:13			Greenwich Culmination Time: 21:51						



UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> <span style="float:right">A: 21%</span>				UT
	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	
00	183 11.1 +00.2	S 06	22.1 +01.0	151 25.4 -00.6	S 18	12.5 +01.0	113 52.1 -33.2	S 28	30.9 +01.7	00			
01	198 11.3 +00.2	S 06	23.1 +00.9	166 24.8 -00.6	S 18	13.5 +00.9	128 18.9 -33.2	S 28	32.6 +01.6	01			
02	213 11.5 +00.1	S 06	24.0 +01.0	181 24.2 -00.5	S 18	14.4 +01.0	142 45.7 -33.4	S 28	34.2 +01.5	02			
03	228 11.6 +00.2	S 06	25.0 +00.9	196 23.7 -00.6	S 18	15.4 +00.9	157 12.3 -33.3	S 28	35.7 +01.3	03			
04	243 11.8 +00.2	S 06	25.9 +01.0	211 23.1 -00.6	S 18	16.3 +01.0	171 39.0 -33.4	S 28	37.0 +01.1	04			
05	258 12.0 +00.1	S 06	26.9 +00.9	226 22.5 -00.5	S 18	17.3 +00.9	186 05.6 -33.5	S 28	38.1 +01.0	05			
06	273 12.1 +00.2	S 06	27.8 +01.0	241 22.0 -00.6	S 18	18.2 +01.0	200 32.1 -33.5	S 28	39.1 +00.9	06			
07	288 12.3 +00.2	S 06	28.8 +00.9	256 21.4 -00.6	S 18	19.2 +00.9	214 58.6 -33.5	S 28	40.0 +00.6	07			
08	303 12.5 +00.1	S 06	29.7 +01.0	271 20.8 -00.6	S 18	20.1 +00.9	229 25.1 -33.6	S 28	40.6 +00.5	08			
09	318 12.6 +00.2	S 06	30.7 +00.9	286 20.2 -00.5	S 18	21.0 +01.0	243 51.5 -33.6	S 28	41.1 +00.4	09			
10	333 12.8 +00.2	S 06	31.6 +01.0	301 19.7 -00.6	S 18	22.0 +00.9	258 17.9 -33.7	S 28	41.5 +00.2	10			
11	348 13.0 +00.2	S 06	32.6 +00.9	316 19.1 -00.6	S 18	22.9 +01.0	272 44.2 -33.7	S 28	41.7 +00.0	11			
12	3 13.2 +00.1	S 06	33.5 +01.0	331 18.5 -00.6	S 18	23.9 +00.9	287 10.5 -33.8	S 28	41.7 -00.1	12			
13	18 13.3 +00.2	S 06	34.5 +00.9	346 17.9 -00.6	S 18	24.8 +01.0	301 36.7 -33.7	S 28	41.6 -00.3	13			
14	33 13.5 +00.2	S 06	35.4 +01.0	1 17.3 -00.5	S 18	25.8 +00.9	316 03.0 -33.8	S 28	41.3 -00.4	14			
15	48 13.7 +00.1	S 06	36.4 +00.9	16 16.8 -00.6	S 18	26.7 +00.9	330 29.2 -33.9	S 28	40.9 -00.6	15			
16	63 13.8 +00.2	S 06	37.3 +01.0	31 16.2 -00.6	S 18	27.6 +01.0	344 55.3 -33.9	S 28	40.3 -00.8	16			
17	78 14.0 +00.2	S 06	38.3 +00.9	46 15.6 -00.6	S 18	28.6 +00.9	359 21.4 -33.9	S 28	39.5 -00.9	17			
18	93 14.2 +00.1	S 06	39.2 +00.9	61 15.0 -00.5	S 18	29.5 +00.9	13 47.5 -33.9	S 28	38.6 -01.1	18			
19	108 14.3 +00.2	S 06	40.1 +01.0	76 14.5 -00.6	S 18	30.4 +01.0	28 13.6 -33.9	S 28	37.5 -01.3	19			
20	123 14.5 +00.2	S 06	41.1 +00.9	91 13.9 -00.6	S 18	31.4 +00.9	42 39.7 -34.0	S 28	36.2 -01.4	20			
21	138 14.7 +00.1	S 06	42.0 +01.0	106 13.3 -00.6	S 18	32.3 +01.0	57 05.7 -34.0	S 28	34.8 -01.6	21			
22	153 14.8 +00.2	S 06	43.0 +00.9	121 12.7 -00.6	S 18	33.3 +00.9	71 31.7 -34.0	S 28	33.2 -01.8	22			
23	168 15.0 +00.2	S 06	43.9 +01.0	136 12.1 -00.6	S 18	34.2 +00.9	85 57.7 -34.1	S 28	31.4 -01.9	23			
	<b>UT 02 06 10 14 18 22</b>			<b>UT 02 06 10 14 18 22</b>			<b>UT 02 06 10 14 18 22</b>						
	SD 16'0 16'0 16'0 16'0 16'0 16'0			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'2 15'2 15'3 15'3 15'3 15'4						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 55'8 56'0 56'1 56'2 56'3 56'4						
	SHA 165° 165° 165° 165° 164° 164°			SHA 133° 133° 133° 133° 132° 132°			SHA 095° 092° 090° 087° 085° 083°						
	Greenwich Culmination Time: 11:47			Greenwich Culmination Time: 13:54			Greenwich Culmination Time: 17:02						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	
00	267 30.8 +01.1	N 22	49.4 -00.1	297 28.9 +02.5	N 22	26.4 +00.0	32 07.6 +02.6	S 08	21.8 +00.1	00			
01	282 31.9 +01.1	N 22	49.3 -00.1	312 31.4 +02.4	N 22	26.4 +00.0	47 10.2 +02.6	S 08	21.9 +00.0	01			
02	297 33.0 +01.2	N 22	49.2 -00.2	327 33.8 +02.5	N 22	26.4 +00.0	62 12.8 +02.6	S 08	21.9 +00.1	02			
03	312 34.2 +01.1	N 22	49.0 -00.1	342 36.3 +02.5	N 22	26.4 +00.0	77 15.4 +02.6	S 08	22.0 +00.0	03			
04	327 35.3 +01.1	N 22	48.9 -00.1	357 38.8 +02.4	N 22	26.4 +00.0	92 18.0 +02.6	S 08	22.0 +00.1	04			
05	342 36.4 +01.2	N 22	48.8 -00.1	12 41.2 +02.5	N 22	26.4 +00.0	107 20.6 +02.6	S 08	22.1 +00.0	05			
06	357 37.6 +01.1	N 22	48.7 -00.1	27 43.7 +02.5	N 22	26.4 +00.0	122 23.2 +02.6	S 08	22.1 +00.1	06			
07	12 38.7 +01.2	N 22	48.6 -00.1	42 46.2 +02.4	N 22	26.4 +00.0	137 25.8 +02.6	S 08	22.2 +00.0	07			
08	27 39.9 +01.1	N 22	48.5 -00.1	57 48.6 +02.5	N 22	26.4 +00.0	152 28.4 +02.6	S 08	22.2 +00.1	08			
09	42 41.0 +01.1	N 22	48.4 -00.1	72 51.1 +02.5	N 22	26.4 +00.0	167 31.0 +02.6	S 08	22.3 +00.1	09			
10	57 42.1 +01.2	N 22	48.3 -00.1	87 53.6 +02.4	N 22	26.4 +00.0	182 33.6 +02.6	S 08	22.4 +00.0	10			
11	72 43.3 +01.1	N 22	48.2 -00.1	102 56.0 +02.5	N 22	26.4 +00.0	197 36.2 +02.6	S 08	22.4 +00.1	11			
12	87 44.4 +01.2	N 22	48.1 -00.1	117 58.5 +02.4	N 22	26.4 +00.0	212 38.8 +02.6	S 08	22.5 +00.0	12			
13	102 45.6 +01.1	N 22	48.0 -00.2	133 00.9 +02.5	N 22	26.4 +00.0	227 41.4 +02.6	S 08	22.5 +00.1	13			
14	117 46.7 +01.1	N 22	47.8 -00.1	148 03.4 +02.5	N 22	26.4 +00.0	242 44.0 +02.6	S 08	22.6 +00.0	14			
15	132 47.8 +01.2	N 22	47.7 -00.1	163 05.9 +02.4	N 22	26.4 +00.0	257 46.6 +02.6	S 08	22.6 +00.1	15			
16	147 49.0 +01.1	N 22	47.6 -00.1	178 08.3 +02.5	N 22	26.4 +00.0	272 49.2 +02.6	S 08	22.7 +00.0	16			
17	162 50.1 +01.2	N 22	47.5 -00.1	193 10.8 +02.5	N 22	26.4 +00.0	287 51.8 +02.6	S 08	22.7 +00.1	17			
18	177 51.3 +01.1	N 22	47.4 -00.1	208 13.3 +02.5	N 22	26.4 +00.0	302 54.4 +02.6	S 08	22.8 +00.0	18			
19	192 52.4 +01.2	N 22	47.3 -00.1	223 15.8 +02.4	N 22	26.4 +00.0	317 57.0 +02.6	S 08	22.8 +00.1	19			
20	207 53.6 +01.1	N 22	47.2 -00.1	238 18.2 +02.5	N 22	26.4 +00.0	332 59.6 +02.6	S 08	22.9 +00.0	20			
21	222 54.7 +01.1	N 22	47.1 -00.1	253 20.7 +02.5	N 22	26.4 +00.0	348 02.2 +02.6	S 08	22.9 +00.1	21			
22	237 55.8 +01.2	N 22	47.0 -00.1	268 23.2 +02.4	N 22	26.4 +00.0	3 04.8 +02.6	S 08	23.0 +00.0	22			
23	252 57.0 +01.1	N 22	46.9 -00.2	283 25.6 +02.5	N 22	26.4 +00.0	18 07.4 +02.6	S 08	23.0 +00.1	23			
	<b>UT 02 06 10 14 18 22</b>			<b>UT 02 06 10 14 18 22</b>			<b>UT 02 06 10 14 18 22</b>						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			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 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 249° 249° 249° 249° 249° 249°			SHA 279° 279° 279° 279° 279° 279°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 06:09			Greenwich Culmination Time: 04:09			Greenwich Culmination Time: 21:47						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> <span style="float:right">A: 24%</span>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 15.2 +00.1	S 06 44.9 +00.9	151 11.5 -00.5	S 18 35.1 +01.0	100 23.6 -34.0	S 28 29.5 -02.1	00						
01	198 15.3 +00.2	S 06 45.8 +01.0	166 11.0 -00.6	S 18 36.1 +00.9	114 49.6 -34.1	S 28 27.4 -02.2	01						
02	213 15.5 +00.1	S 06 46.8 +00.9	181 10.4 -00.6	S 18 37.0 +00.9	129 15.5 -34.1	S 28 25.2 -02.4	02						
03	228 15.6 +00.2	S 06 47.7 +01.0	196 09.8 -00.6	S 18 37.9 +00.9	143 41.4 -34.1	S 28 22.8 -02.6	03						
04	243 15.8 +00.2	S 06 48.7 +00.9	211 09.2 -00.6	S 18 38.8 +01.0	158 07.3 -34.1	S 28 20.2 -02.7	04						
05	258 16.0 +00.1	S 06 49.6 +00.9	226 08.6 -00.6	S 18 39.8 +00.9	172 33.2 -34.1	S 28 17.5 -02.9	05						
06	273 16.1 +00.2	S 06 50.5 +01.0	241 08.0 -00.5	S 18 40.7 +00.9	186 59.1 -34.1	S 28 14.6 -03.1	06						
07	288 16.3 +00.2	S 06 51.5 +00.9	256 07.5 -00.6	S 18 41.6 +01.0	201 25.0 -34.2	S 28 11.5 -03.3	07						
08	303 16.5 +00.1	S 06 52.4 +01.0	271 06.9 -00.6	S 18 42.6 +00.9	215 50.8 -34.1	S 28 08.2 -03.4	08						
09	318 16.6 +00.2	S 06 53.4 +00.9	286 06.3 -00.6	S 18 43.5 +00.9	230 16.7 -34.1	S 28 04.8 -03.5	09						
10	333 16.8 +00.2	S 06 54.3 +01.0	301 05.7 -00.6	S 18 44.4 +00.9	244 42.6 -34.2	S 28 01.3 -03.8	10						
11	348 17.0 +00.1	S 06 55.3 +00.9	316 05.1 -00.6	S 18 45.3 +01.0	259 08.4 -34.1	S 27 57.5 -03.9	11						
12	3 17.1 +00.2	S 06 56.2 +01.0	331 04.5 -00.6	S 18 46.3 +00.9	273 34.3 -34.2	S 27 53.6 -04.0	12						
13	18 17.3 +00.1	S 06 57.2 +00.9	346 03.9 -00.6	S 18 47.2 +00.9	288 00.1 -34.1	S 27 49.6 -04.3	13						
14	33 17.4 +00.2	S 06 58.1 +00.9	1 03.3 -00.6	S 18 48.1 +00.9	302 26.0 -34.1	S 27 45.3 -04.4	14						
15	48 17.6 +00.2	S 06 59.0 +01.0	16 02.7 -00.5	S 18 49.0 +00.9	316 51.9 -34.2	S 27 40.9 -04.5	15						
16	63 17.8 +00.1	S 06 60.0 +00.9	31 02.2 -00.6	S 18 49.9 +01.0	331 17.7 -34.1	S 27 36.4 -04.8	16						
17	78 17.9 +00.2	S 07 00.9 +01.0	46 01.6 -00.6	S 18 50.9 +00.9	345 43.6 -34.1	S 27 31.6 -04.9	17						
18	93 18.1 +00.2	S 07 01.9 +00.9	61 01.0 -00.6	S 18 51.8 +00.9	0 09.5 -34.1	S 27 26.7 -05.0	18						
19	108 18.3 +00.1	S 07 02.8 +01.0	76 00.4 -00.6	S 18 52.7 +00.9	14 35.4 -34.1	S 27 21.7 -05.3	19						
20	123 18.4 +00.2	S 07 03.8 +00.9	90 59.8 -00.6	S 18 53.6 +00.9	29 01.3 -34.1	S 27 16.4 -05.4	20						
21	138 18.6 +00.1	S 07 04.7 +00.9	105 59.2 -00.6	S 18 54.5 +00.9	43 27.2 -34.0	S 27 11.0 -05.5	21						
22	153 18.7 +00.2	S 07 05.6 +01.0	120 58.6 -00.6	S 18 55.4 +01.0	57 53.2 -34.1	S 27 05.5 -05.7	22						
23	168 18.9 +00.2	S 07 06.6 +00.9	135 58.0 -00.6	S 18 56.4 +00.9	72 19.1 -34.0	S 26 59.8 -05.9	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 16'0 16'0 16'0 16'0 16'0 16'0		SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 15'4 15'4 15'5 15'5 15'6 15'6								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 56'6 56'7 56'8 57'0 57'1 57'3								
	SHA 164° 164° 164° 164° 163° 163°		SHA 132° 132° 132° 131° 131° 131°		SHA 080° 078° 075° 073° 070° 068°								
	Greenwich Culmination Time: 11:46		Greenwich Culmination Time: 13:55		Greenwich Culmination Time: 17:59								

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	267 58.1 +01.2	N 22 46.7 -00.1	298 28.1 +02.5	N 22 26.4 +00.0	33 10.0 +02.6	S 08 23.1 +00.0	00						
01	282 59.3 +01.1	N 22 46.6 -00.1	313 30.6 +02.4	N 22 26.4 +00.0	48 12.6 +02.6	S 08 23.1 +00.1	01						
02	298 00.4 +01.2	N 22 46.5 -00.1	328 33.0 +02.5	N 22 26.4 +00.0	63 15.2 +02.6	S 08 23.2 +00.0	02						
03	313 01.6 +01.1	N 22 46.4 -00.1	343 35.5 +02.5	N 22 26.4 +00.0	78 17.8 +02.6	S 08 23.2 +00.1	03						
04	328 02.7 +01.2	N 22 46.3 -00.1	358 38.0 +02.5	N 22 26.4 +00.0	93 20.4 +02.6	S 08 23.3 +00.0	04						
05	343 03.9 +01.1	N 22 46.2 -00.1	13 40.5 +02.4	N 22 26.4 +00.0	108 23.0 +02.6	S 08 23.3 +00.1	05						
06	358 05.0 +01.2	N 22 46.1 -00.1	28 42.9 +02.5	N 22 26.4 +00.0	123 25.6 +02.6	S 08 23.4 +00.0	06						
07	13 06.2 +01.1	N 22 46.0 -00.1	43 45.4 +02.5	N 22 26.4 +00.0	138 28.2 +02.6	S 08 23.4 +00.1	07						
08	28 07.3 +01.2	N 22 45.9 -00.1	58 47.9 +02.5	N 22 26.4 +00.0	153 30.8 +02.6	S 08 23.5 +00.0	08						
09	43 08.5 +01.1	N 22 45.8 -00.2	73 50.4 +02.4	N 22 26.4 +00.0	168 33.4 +02.6	S 08 23.5 +00.1	09						
10	58 09.6 +01.2	N 22 45.6 -00.1	88 52.8 +02.5	N 22 26.4 +00.0	183 36.0 +02.6	S 08 23.6 +00.0	10						
11	73 10.8 +01.1	N 22 45.5 -00.1	103 55.3 +02.5	N 22 26.4 +00.0	198 38.6 +02.6	S 08 23.6 +00.1	11						
12	88 11.9 +01.2	N 22 45.4 -00.1	118 57.8 +02.4	N 22 26.4 +00.0	213 41.2 +02.6	S 08 23.7 +00.0	12						
13	103 13.1 +01.2	N 22 45.3 -00.1	134 00.2 +02.5	N 22 26.4 +00.0	228 43.8 +02.6	S 08 23.7 +00.1	13						
14	118 14.3 +01.1	N 22 45.2 -00.1	149 02.7 +02.5	N 22 26.4 +00.0	243 46.4 +02.6	S 08 23.8 +00.1	14						
15	133 15.4 +01.2	N 22 45.1 -00.1	164 05.2 +02.5	N 22 26.4 +00.0	258 49.0 +02.6	S 08 23.9 +00.0	15						
16	148 16.6 +01.1	N 22 45.0 -00.1	179 07.7 +02.5	N 22 26.4 +00.0	273 51.6 +02.6	S 08 23.9 +00.1	16						
17	163 17.7 +01.2	N 22 44.9 -00.1	194 10.2 +02.4	N 22 26.4 +00.0	288 54.2 +02.5	S 08 24.0 +00.0	17						
18	178 18.9 +01.1	N 22 44.8 -00.2	209 12.6 +02.5	N 22 26.4 +00.0	303 56.7 +02.6	S 08 24.0 +00.1	18						
19	193 20.0 +01.2	N 22 44.6 -00.1	224 15.1 +02.5	N 22 26.4 +00.0	318 59.3 +02.6	S 08 24.1 +00.0	19						
20	208 21.2 +01.1	N 22 44.5 -00.1	239 17.6 +02.5	N 22 26.4 +00.0	334 01.9 +02.6	S 08 24.1 +00.1	20						
21	223 22.3 +01.2	N 22 44.4 -00.1	254 20.1 +02.4	N 22 26.4 +00.0	349 04.5 +02.6	S 08 24.2 +00.0	21						
22	238 23.5 +01.2	N 22 44.3 -00.1	269 22.5 +02.5	N 22 26.4 +00.0	4 07.1 +02.6	S 08 24.2 +00.1	22						
23	253 24.7 +01.1	N 22 44.2 -00.1	284 25.0 +02.5	N 22 26.4 +00.0	19 09.7 +02.6	S 08 24.3 +00.0	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 00'4 00'4 00'4 00'4 00'4 00'4		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 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0								
	SHA 249° 249° 249° 249° 248° 248°		SHA 279° 279° 279° 279° 279° 279°		SHA 014° 014° 014° 014° 014° 014°								
	Greenwich Culmination Time: 06:07		Greenwich Culmination Time: 04:05		Greenwich Culmination Time: 21:43								

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Sun					Venus				Moon				A: 28%	UT						
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT							
	° / ' / ''		° / ' / ''		° / ' / ''		° / ' / ''		° / ' / ''		° / ' / ''									
00	183 19.1 +00.1	S	07 07.5 +01.0		150 57.4 -00.6	S	18 57.3 +00.9		86 45.1 -34.0	S	26 53.9 -06.1		00							
01	198 19.2 +00.2	S	07 08.5 +00.9		165 56.8 -00.6	S	18 58.2 +00.9		101 11.1 -34.0	S	26 47.8 -06.2		01							
02	213 19.4 +00.1	S	07 09.4 +00.9		180 56.2 -00.6	S	18 59.1 +00.9		115 37.1 -34.0	S	26 41.6 -06.4		02							
03	228 19.5 +00.2	S	07 10.3 +01.0		195 55.6 -00.6	S	19 00.0 +00.9		130 03.1 -33.9	S	26 35.2 -06.5		03							
04	243 19.7 +00.2	S	07 11.3 +00.9		210 55.0 -00.6	S	19 00.9 +00.9		144 29.2 -34.0	S	26 28.7 -06.7		04							
05	258 19.9 +00.1	S	07 12.2 +01.0		225 54.4 -00.6	S	19 01.8 +00.9		158 55.2 -33.9	S	26 22.0 -06.9		05							
06	273 20.0 +00.2	S	07 13.2 +00.9		240 53.8 -00.6	S	19 02.7 +00.9		173 21.3 -33.8	S	26 15.1 -07.0		06							
07	288 20.2 +00.1	S	07 14.1 +00.9		255 53.2 -00.6	S	19 03.6 +00.9		187 47.5 -33.9	S	26 08.1 -07.2		07							
08	303 20.3 +00.2	S	07 15.0 +01.0		270 52.6 -00.6	S	19 04.5 +00.9		202 13.6 -33.8	S	26 00.9 -07.3		08							
09	318 20.5 +00.2	S	07 16.0 +00.9		285 52.0 -00.6	S	19 05.4 +01.0		216 39.8 -33.8	S	25 53.6 -07.5		09							
10	333 20.7 +00.1	S	07 16.9 +01.0		300 51.4 -00.6	S	19 06.4 +00.9		231 06.0 -33.8	S	25 46.1 -07.7		10							
11	348 20.8 +00.2	S	07 17.9 +00.9		315 50.8 -00.6	S	19 07.3 +00.9		245 32.2 -33.7	S	25 38.4 -07.8		11							
12	3 21.0 +00.1	S	07 18.8 +00.9		330 50.2 -00.6	S	19 08.2 +00.9		259 58.5 -33.7	S	25 30.6 -08.0		12							
13	18 21.1 +00.2	S	07 19.7 +01.0		345 49.6 -00.6	S	19 09.1 +00.9		274 24.8 -33.7	S	25 22.6 -08.1		13							
14	33 21.3 +00.2	S	07 20.7 +00.9		0 49.0 -00.6	S	19 10.0 +00.9		288 51.1 -33.6	S	25 14.5 -08.3		14							
15	48 21.5 +00.1	S	07 21.6 +01.0		15 48.4 -00.6	S	19 10.9 +00.9		303 17.5 -33.6	S	25 06.2 -08.5		15							
16	63 21.6 +00.2	S	07 22.6 +00.9		30 47.8 -00.6	S	19 11.8 +00.9		317 43.9 -33.6	S	24 57.7 -08.6		16							
17	78 21.8 +00.1	S	07 23.5 +00.9		45 47.2 -00.6	S	19 12.7 +00.9		332 10.3 -33.5	S	24 49.1 -08.8		17							
18	93 21.9 +00.2	S	07 24.4 +01.0		60 46.6 -00.6	S	19 13.6 +00.9		346 36.8 -33.5	S	24 40.3 -08.9		18							
19	108 22.1 +00.1	S	07 25.4 +00.9		75 46.0 -00.6	S	19 14.5 +00.9		1 03.3 -33.4	S	24 31.4 -09.1		19							
20	123 22.2 +00.2	S	07 26.3 +01.0		90 45.4 -00.6	S	19 15.4 +00.9		15 29.9 -33.4	S	24 22.3 -09.2		20							
21	138 22.4 +00.2	S	07 27.3 +00.9		105 44.8 -00.6	S	19 16.3 +00.8		29 56.5 -33.4	S	24 13.1 -09.4		21							
22	153 22.6 +00.1	S	07 28.2 +00.9		120 44.2 -00.6	S	19 17.1 +00.9		44 23.1 -33.4	S	24 03.7 -09.5		22							
23	168 22.7 +00.2	S	07 29.1 +01.0		135 43.6 -00.6	S	19 18.0 +00.9		58 49.7 -33.2	S	23 54.2 -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°0	16°0	16°0	16°0	16°0	16°0	SD	00°1	00°1	00°1	00°1	00°1	00°1	SD	15°6	15°7	15°7	15°8	15°8	15°8
HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	00°1	00°1	00°1	00°1	00°1	00°1	HP	57°4	57°5	57°7	57°8	58°0	58°1
SHA	163°	163°	163°	163°	163°	162°	SHA	131°	131°	130°	130°	130°	130°	SHA	065°	063°	061°	058°	056°	053°
Greenwich Culmination Time: 11:46							Greenwich Culmination Time: 13:56							Greenwich Culmination Time: 18:55						

  

Mars					Jupiter				Saturn				UT							
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT							
	° / ' / ''		° / ' / ''		° / ' / ''		° / ' / ''		° / ' / ''		° / ' / ''									
00	268 25.8 +01.2	N	22 44.1 -00.1		299 27.5 +02.5	N	22 26.4 +00.0		34 12.3 +02.6	S	08 24.3 +00.1		00							
01	283 27.0 +01.1	N	22 44.0 -00.1		314 30.0 +02.5	N	22 26.4 +00.0		49 14.9 +02.6	S	08 24.4 +00.0		01							
02	298 28.1 +01.2	N	22 43.9 -00.2		329 32.5 +02.4	N	22 26.4 +00.0		64 17.5 +02.6	S	08 24.4 +00.1		02							
03	313 29.3 +01.2	N	22 43.7 -00.1		344 34.9 +02.5	N	22 26.4 -00.1		79 20.1 +02.6	S	08 24.5 +00.0		03							
04	328 30.5 +01.1	N	22 43.6 -00.1		359 37.4 +02.5	N	22 26.3 +00.0		94 22.7 +02.6	S	08 24.5 +00.1		04							
05	343 31.6 +01.2	N	22 43.5 -00.1		14 39.9 +02.5	N	22 26.3 +00.0		109 25.3 +02.6	S	08 24.6 +00.0		05							
06	358 32.8 +01.2	N	22 43.4 -00.1		29 42.4 +02.5	N	22 26.3 +00.0		124 27.9 +02.6	S	08 24.6 +00.1		06							
07	13 34.0 +01.1	N	22 43.3 -00.1		44 44.9 +02.4	N	22 26.3 +00.0		139 30.5 +02.6	S	08 24.7 +00.0		07							
08	28 35.1 +01.2	N	22 43.2 -00.1		59 47.3 +02.5	N	22 26.3 +00.0		154 33.1 +02.6	S	08 24.7 +00.1		08							
09	43 36.3 +01.1	N	22 43.1 -00.1		74 49.8 +02.5	N	22 26.3 +00.0		169 35.7 +02.6	S	08 24.8 +00.0		09							
10	58 37.4 +01.2	N	22 43.0 -00.2		89 52.3 +02.5	N	22 26.3 +00.0		184 38.3 +02.6	S	08 24.8 +00.1		10							
11	73 38.6 +01.2	N	22 42.8 -00.1		104 54.8 +02.5	N	22 26.3 +00.0		199 40.9 +02.6	S	08 24.9 +00.0		11							
12	88 39.8 +01.1	N	22 42.7 -00.1		119 57.3 +02.5	N	22 26.3 +00.0		214 43.5 +02.6	S	08 24.9 +00.1		12							
13	103 40.9 +01.2	N	22 42.6 -00.1		134 59.8 +02.5	N	22 26.3 +00.0		229 46.1 +02.5	S	08 25.0 +00.0		13							
14	118 42.1 +01.2	N	22 42.5 -00.1		150 02.3 +02.4	N	22 26.3 +00.0		244 48.6 +02.6	S	08 25.0 +00.1		14							
15	133 43.3 +01.1	N	22 42.4 -00.1		165 04.7 +02.5	N	22 26.3 +00.0		259 51.2 +02.6	S	08 25.1 +00.0		15							
16	148 44.4 +01.2	N	22 42.3 -00.1		180 07.2 +02.5	N	22 26.3 +00.0		274 53.8 +02.6	S	08 25.1 +00.1		16							
17	163 45.6 +01.2	N	22 42.2 -00.2		195 09.7 +02.5	N	22 26.3 +00.0		289 56.4 +02.6	S	08 25.2 +00.0		17							
18	178 46.8 +01.2	N	22 42.0 -00.1		210 12.2 +02.5	N	22 26.3 +00.0		304 59.0 +02.6	S	08 25.2 +00.1		18							
19	193 48.0 +01.1	N	22 41.9 -00.1		225 14.7 +02.5	N	22 26.3 +00.0		320 01.6 +02.6	S	08 25.3 +00.0		19							
20	208 49.1 +01.2	N	22 41.8 -00.1		240 17.2 +02.5	N	22 26.3 +00.0		335 04.2 +02.6	S	08 25.3 +00.1		20							
21	223 50.3 +01.2	N	22 41.7 -00.1		255 19.7 +02.4	N	22 26.3 +00.0		350 06.8 +02.6	S	08 25.4 +00.0		21							
22	238 51.5 +01.1	N	22 41.6 -00.1		270 22.1 +02.5	N	22 26.3 +00.0		5 09.4 +02.6	S	08 25.4 +00.1		22							
23	253 52.6 +01.2	N	22 41.5 -00.1		285 24.6 +02.5	N	22 26.3 +00.0		20 12.0 +02.6	S	08 25.5 +00.0		23							
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT	02	06	10	14	18	22
SD	00°1	00°1	00°1	00°1	00°1	00°1	SD	00°4	00°4	00°4	00°4	00°4	00°4	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°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	248°	248°	248°	248°	248°	248°	SHA	279°	279°	279°	279°	279°	279°	SHA	014°	014°	014°	014°	014°	014°
Greenwich Culmination Time: 06:05							Greenwich Culmination Time: 04:01							Greenwich Culmination Time: 21:39						

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

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183	22.9 +00.1	S 07 30.1 +00.9		150	43.0 -00.6	S 19 18.9 +00.9		73	16.5 -33.3	S 23 44.5 -09.8		00
01	198	23.0 +00.2	S 07 31.0 +00.9		165	42.4 -00.6	S 19 19.8 +00.9		87	43.2 -33.2	S 23 34.7 -10.0		01
02	213	23.2 +00.1	S 07 31.9 +01.0		180	41.8 -00.6	S 19 20.7 +00.9		102	10.0 -33.2	S 23 24.7 -10.1		02
03	228	23.3 +00.2	S 07 32.9 +00.9		195	41.2 -00.6	S 19 21.6 +00.9		116	36.8 -33.1	S 23 14.6 -10.3		03
04	243	23.5 +00.1	S 07 33.8 +00.9		210	40.6 -00.7	S 19 22.5 +00.9		131	03.7 -33.1	S 23 04.3 -10.4		04
05	258	23.6 +00.2	S 07 34.7 +01.0		225	39.9 -00.6	S 19 23.4 +00.9		145	30.6 -33.0	S 22 53.9 -10.6		05
06	273	23.8 +00.1	S 07 35.7 +00.9		240	39.3 -00.6	S 19 24.3 +00.9		159	57.6 -33.0	S 22 43.3 -10.7		06
07	288	23.9 +00.2	S 07 36.6 +01.0		255	38.7 -00.6	S 19 25.2 +00.9		174	24.6 -33.0	S 22 32.6 -10.9		07
08	303	24.1 +00.2	S 07 37.6 +00.9		270	38.1 -00.6	S 19 26.1 +00.8		188	51.6 -32.9	S 22 21.7 -11.0		08
09	318	24.3 +00.1	S 07 38.5 +00.9		285	37.5 -00.6	S 19 26.9 +00.9		203	18.7 -32.8	S 22 10.7 -11.1		09
10	333	24.4 +00.2	S 07 39.4 +01.0		300	36.9 -00.6	S 19 27.8 +00.9		217	45.9 -32.9	S 21 59.6 -11.3		10
11	348	24.6 +00.1	S 07 40.4 +00.9		315	36.3 -00.6	S 19 28.7 +00.9		232	13.0 -32.7	S 21 48.3 -11.4		11
12	3	24.7 +00.2	S 07 41.3 +00.9		330	35.7 -00.6	S 19 29.6 +00.9		246	40.3 -32.8	S 21 36.9 -11.6		12
13	18	24.9 +00.1	S 07 42.2 +01.0		345	35.1 -00.7	S 19 30.5 +00.9		261	07.5 -32.6	S 21 25.3 -11.7		13
14	33	25.0 +00.2	S 07 43.2 +00.9		0	34.4 -00.6	S 19 31.4 +00.8		275	34.9 -32.7	S 21 13.6 -11.8		14
15	48	25.2 +00.1	S 07 44.1 +00.9		15	33.8 -00.6	S 19 32.2 +00.9		290	02.2 -32.6	S 21 01.8 -12.0		15
16	63	25.3 +00.2	S 07 45.0 +01.0		30	33.2 -00.6	S 19 33.1 +00.9		304	29.6 -32.5	S 20 49.8 -12.1		16
17	78	25.5 +00.1	S 07 46.0 +00.9		45	32.6 -00.6	S 19 34.0 +00.9		318	57.1 -32.5	S 20 37.7 -12.2		17
18	93	25.6 +00.2	S 07 46.9 +00.9		60	32.0 -00.6	S 19 34.9 +00.8		333	24.6 -32.4	S 20 25.5 -12.4		18
19	108	25.8 +00.1	S 07 47.8 +01.0		75	31.4 -00.6	S 19 35.7 +00.9		347	52.2 -32.4	S 20 13.1 -12.5		19
20	123	25.9 +00.2	S 07 48.8 +00.9		90	30.8 -00.7	S 19 36.6 +00.9		2	19.8 -32.4	S 20 00.6 -12.7		20
21	138	26.1 +00.1	S 07 49.7 +00.9		105	30.1 -00.6	S 19 37.5 +00.9		16	47.4 -32.3	S 19 47.9 -12.7		21
22	153	26.2 +00.2	S 07 50.6 +01.0		120	29.5 -00.6	S 19 38.4 +00.8		31	15.1 -32.3	S 19 35.2 -12.9		22
23	168	26.4 +00.1	S 07 51.6 +00.9		135	28.9 -00.6	S 19 39.2 +00.9		45	42.8 -32.2	S 19 22.3 -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 16'0 16'0 16'0 16'0 16'0 16'0				SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 15'9 15'9 16'0 16'0 16'0 16'1				
	HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 58'3 58'4 58'6 58'7 58'9 59'1				
	SHA 162° 162° 162° 162° 162° 161°				SHA 130° 129° 129° 129° 129° 129°				SHA 051° 049° 046° 044° 042° 039°				
	Greenwich Culmination Time: 11:46				Greenwich Culmination Time: 13:57				Greenwich Culmination Time: 19:50				

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	268	53.8 +01.2	N 22 41.4 -00.1		300	27.1 +02.5	N 22 26.3 +00.0		35	14.6 +02.6	S 08 25.5 +00.0		00
01	283	55.0 +01.2	N 22 41.3 -00.2		315	29.6 +02.5	N 22 26.3 +00.0		50	17.2 +02.6	S 08 25.5 +00.1		01
02	298	56.2 +01.1	N 22 41.1 -00.1		330	32.1 +02.5	N 22 26.3 +00.0		65	19.8 +02.6	S 08 25.6 +00.0		02
03	313	57.3 +01.2	N 22 41.0 -00.1		345	34.6 +02.5	N 22 26.3 +00.0		80	22.4 +02.6	S 08 25.6 +00.1		03
04	328	58.5 +01.2	N 22 40.9 -00.1		0	37.1 +02.5	N 22 26.3 +00.0		95	25.0 +02.5	S 08 25.7 +00.0		04
05	343	59.7 +01.2	N 22 40.8 -00.1		15	39.6 +02.5	N 22 26.3 +00.0		110	27.5 +02.6	S 08 25.7 +00.1		05
06	359	00.9 +01.1	N 22 40.7 -00.1		30	42.1 +02.4	N 22 26.3 +00.0		125	30.1 +02.6	S 08 25.8 +00.0		06
07	14	02.0 +01.2	N 22 40.6 -00.1		45	44.5 +02.5	N 22 26.3 +00.0		140	32.7 +02.6	S 08 25.8 +00.1		07
08	29	03.2 +01.2	N 22 40.5 -00.2		60	47.0 +02.5	N 22 26.3 +00.0		155	35.3 +02.6	S 08 25.9 +00.0		08
09	44	04.4 +01.2	N 22 40.3 -00.1		75	49.5 +02.5	N 22 26.3 +00.0		170	37.9 +02.6	S 08 25.9 +00.1		09
10	59	05.6 +01.2	N 22 40.2 -00.1		90	52.0 +02.5	N 22 26.3 +00.0		185	40.5 +02.6	S 08 26.0 +00.0		10
11	74	06.8 +01.1	N 22 40.1 -00.1		105	54.5 +02.5	N 22 26.3 +00.0		200	43.1 +02.6	S 08 26.0 +00.1		11
12	89	07.9 +01.2	N 22 40.0 -00.1		120	57.0 +02.5	N 22 26.3 +00.0		215	45.7 +02.6	S 08 26.1 +00.0		12
13	104	09.1 +01.2	N 22 39.9 -00.1		135	59.5 +02.5	N 22 26.3 +00.0		230	48.3 +02.6	S 08 26.1 +00.1		13
14	119	10.3 +01.2	N 22 39.8 -00.1		151	02.0 +02.5	N 22 26.3 +00.0		245	50.9 +02.6	S 08 26.2 +00.0		14
15	134	11.5 +01.2	N 22 39.7 -00.2		166	04.5 +02.5	N 22 26.3 +00.0		260	53.5 +02.5	S 08 26.2 +00.1		15
16	149	12.7 +01.1	N 22 39.5 -00.1		181	07.0 +02.5	N 22 26.3 +00.0		275	56.0 +02.6	S 08 26.3 +00.0		16
17	164	13.8 +01.2	N 22 39.4 -00.1		196	09.5 +02.5	N 22 26.3 +00.0		290	58.6 +02.6	S 08 26.3 +00.1		17
18	179	15.0 +01.2	N 22 39.3 -00.1		211	12.0 +02.5	N 22 26.3 +00.0		306	01.2 +02.6	S 08 26.4 +00.0		18
19	194	16.2 +01.2	N 22 39.2 -00.1		226	14.5 +02.5	N 22 26.3 +00.0		321	03.8 +02.6	S 08 26.4 +00.1		19
20	209	17.4 +01.2	N 22 39.1 -00.1		241	17.0 +02.5	N 22 26.3 +00.0		336	06.4 +02.6	S 08 26.5 +00.0		20
21	224	18.6 +01.2	N 22 39.0 -00.2		256	19.5 +02.5	N 22 26.3 +00.0		351	09.0 +02.6	S 08 26.5 +00.1		21
22	239	19.8 +01.1	N 22 38.8 -00.1		271	22.0 +02.5	N 22 26.3 +00.0		6	11.6 +02.6	S 08 26.6 +00.0		22
23	254	20.9 +01.2	N 22 38.7 -00.1		286	24.5 +02.5	N 22 26.3 +00.0		21	14.2 +02.6	S 08 26.6 +00.1		23
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 00'4 00'4 00'4 00'4 00'4 00'4				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 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 248° 248° 248° 248° 247° 247°				SHA 279° 279° 279° 279° 279° 279°				SHA 014° 014° 014° 014° 014° 014°				
	Greenwich Culmination Time: 06:03				Greenwich Culmination Time: 03:57				Greenwich Culmination Time: 21:35				

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 26.5 +00.2	S	07 52.5 +00.9	150 28.3 -00.6	S	19 40.1 +00.9	60 10.6 -32.2	S	19 09.3 -13.2	00			
01	198 26.7 +00.1	S	07 53.4 +01.0	165 27.7 -00.7	S	19 41.0 +00.9	74 38.4 -32.1	S	18 56.1 -13.3	01			
02	213 26.8 +00.2	S	07 54.4 +00.9	180 27.0 -00.6	S	19 41.9 +00.8	89 06.3 -32.1	S	18 42.8 -13.3	02			
03	228 27.0 +00.1	S	07 55.3 +00.9	195 26.4 -00.6	S	19 42.7 +00.9	103 34.2 -32.0	S	18 29.5 -13.6	03			
04	243 27.1 +00.2	S	07 56.2 +01.0	210 25.8 -00.6	S	19 43.6 +00.9	118 02.2 -32.0	S	18 15.9 -13.6	04			
05	258 27.3 +00.1	S	07 57.2 +00.9	225 25.2 -00.6	S	19 44.5 +00.8	132 30.2 -32.0	S	18 02.3 -13.8	05			
06	273 27.4 +00.2	S	07 58.1 +00.9	240 24.6 -00.7	S	19 45.3 +00.9	146 58.2 -31.9	S	17 48.5 -13.8	06			
07	288 27.6 +00.1	S	07 59.0 +01.0	255 23.9 -00.6	S	19 46.2 +00.9	161 26.3 -31.8	S	17 34.7 -14.0	07			
08	303 27.7 +00.2	S	07 60.0 +00.9	270 23.3 -00.6	S	19 47.1 +00.8	175 54.5 -31.9	S	17 20.7 -14.1	08			
09	318 27.9 +00.1	S	08 00.9 +00.9	285 22.7 -00.6	S	19 47.9 +00.9	190 22.6 -31.7	S	17 06.6 -14.2	09			
10	333 28.0 +00.2	S	08 01.8 +01.0	300 22.1 -00.7	S	19 48.8 +00.9	204 50.9 -31.8	S	16 52.4 -14.4	10			
11	348 28.2 +00.1	S	08 02.8 +00.9	315 21.4 -00.6	S	19 49.7 +00.8	219 19.1 -31.7	S	16 38.0 -14.4	11			
12	3 28.3 +00.2	S	08 03.7 +00.9	330 20.8 -00.6	S	19 50.5 +00.9	233 47.4 -31.6	S	16 23.6 -14.6	12			
13	18 28.5 +00.1	S	08 04.6 +00.9	345 20.2 -00.6	S	19 51.4 +00.8	248 15.8 -31.6	S	16 09.0 -14.6	13			
14	33 28.6 +00.2	S	08 05.5 +01.0	0 19.6 -00.7	S	19 52.2 +00.9	262 44.2 -31.6	S	15 54.4 -14.8	14			
15	48 28.8 +00.1	S	08 06.5 +00.9	15 18.9 -00.6	S	19 53.1 +00.9	277 12.6 -31.5	S	15 39.6 -14.9	15			
16	63 28.9 +00.2	S	08 07.4 +00.9	30 18.3 -00.6	S	19 54.0 +00.8	291 41.1 -31.5	S	15 24.7 -15.0	16			
17	78 29.1 +00.1	S	08 08.3 +01.0	45 17.7 -00.6	S	19 54.8 +00.9	306 09.6 -31.5	S	15 09.7 -15.1	17			
18	93 29.2 +00.2	S	08 09.3 +00.9	60 17.1 -00.7	S	19 55.7 +00.8	320 38.1 -31.4	S	14 54.6 -15.2	18			
19	108 29.4 +00.1	S	08 10.2 +00.9	75 16.4 -00.6	S	19 56.5 +00.9	335 06.7 -31.4	S	14 39.4 -15.2	19			
20	123 29.5 +00.1	S	08 11.1 +00.9	90 15.8 -00.6	S	19 57.4 +00.8	349 35.3 -31.3	S	14 24.2 -15.4	20			
21	138 29.6 +00.2	S	08 12.0 +01.0	105 15.2 -00.7	S	19 58.2 +00.9	4 04.0 -31.3	S	14 08.8 -15.5	21			
22	153 29.8 +00.1	S	08 13.0 +00.9	120 14.5 -00.6	S	19 59.1 +00.8	18 32.7 -31.3	S	13 53.3 -15.6	22			
23	168 29.9 +00.2	S	08 13.9 +00.9	135 13.9 -00.6	S	19 59.9 +00.9	33 01.4 -31.2	S	13 37.7 -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 16'0 16'0 16'0 16'0 16'0 16'0			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'1 16'2 16'2 16'2 16'3 16'3						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 59'2 59'3 59'5 59'6 59'8 59'9						
	SHA 161° 161° 161° 161° 161° 161°			SHA 128° 128° 128° 128° 127° 127°			SHA 037° 035° 032° 030° 028° 026°						
	Greenwich Culmination Time: 11:46			Greenwich Culmination Time: 13:58			Greenwich Culmination Time: 20:43						

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	269 22.1 +01.2	N	22 38.6 -00.1	301 27.0 +02.5	N	22 26.3 +00.0	36 16.8 +02.6	S	08 26.7 +00.0	00			
01	284 23.3 +01.2	N	22 38.5 -00.1	316 29.5 +02.5	N	22 26.3 +00.0	51 19.4 +02.5	S	08 26.7 +00.1	01			
02	299 24.5 +01.2	N	22 38.4 -00.1	331 32.0 +02.4	N	22 26.3 +00.0	66 21.9 +02.6	S	08 26.8 +00.0	02			
03	314 25.7 +01.2	N	22 38.3 -00.1	346 34.4 +02.5	N	22 26.3 -00.1	81 24.5 +02.6	S	08 26.8 +00.1	03			
04	329 26.9 +01.2	N	22 38.2 -00.2	1 36.9 +02.5	N	22 26.2 +00.0	96 27.1 +02.6	S	08 26.9 +00.0	04			
05	344 28.1 +01.1	N	22 38.0 -00.1	16 39.4 +02.5	N	22 26.2 +00.0	111 29.7 +02.6	S	08 26.9 +00.0	05			
06	359 29.2 +01.2	N	22 37.9 -00.1	31 41.9 +02.5	N	22 26.2 +00.0	126 32.3 +02.6	S	08 26.9 +00.1	06			
07	14 30.4 +01.2	N	22 37.8 -00.1	46 44.4 +02.5	N	22 26.2 +00.0	141 34.9 +02.6	S	08 27.0 +00.0	07			
08	29 31.6 +01.2	N	22 37.7 -00.1	61 46.9 +02.5	N	22 26.2 +00.0	156 37.5 +02.6	S	08 27.0 +00.1	08			
09	44 32.8 +01.2	N	22 37.6 -00.1	76 49.4 +02.6	N	22 26.2 +00.0	171 40.1 +02.6	S	08 27.1 +00.0	09			
10	59 34.0 +01.2	N	22 37.5 -00.2	91 52.0 +02.5	N	22 26.2 +00.0	186 42.7 +02.6	S	08 27.1 +00.1	10			
11	74 35.2 +01.2	N	22 37.3 -00.1	106 54.5 +02.5	N	22 26.2 +00.0	201 45.3 +02.5	S	08 27.2 +00.0	11			
12	89 36.4 +01.2	N	22 37.2 -00.1	121 57.0 +02.5	N	22 26.2 +00.0	216 47.8 +02.6	S	08 27.2 +00.1	12			
13	104 37.6 +01.2	N	22 37.1 -00.1	136 59.5 +02.5	N	22 26.2 +00.0	231 50.4 +02.6	S	08 27.3 +00.0	13			
14	119 38.8 +01.2	N	22 37.0 -00.1	152 02.0 +02.5	N	22 26.2 +00.0	246 53.0 +02.6	S	08 27.3 +00.1	14			
15	134 40.0 +01.2	N	22 36.9 -00.1	167 04.5 +02.5	N	22 26.2 +00.0	261 55.6 +02.6	S	08 27.4 +00.0	15			
16	149 41.2 +01.2	N	22 36.8 -00.2	182 07.0 +02.5	N	22 26.2 +00.0	276 58.2 +02.6	S	08 27.4 +00.1	16			
17	164 42.4 +01.2	N	22 36.6 -00.1	197 09.5 +02.5	N	22 26.2 +00.0	292 00.8 +02.6	S	08 27.5 +00.0	17			
18	179 43.6 +01.2	N	22 36.5 -00.1	212 12.0 +02.5	N	22 26.2 +00.0	307 03.4 +02.6	S	08 27.5 +00.1	18			
19	194 44.8 +01.2	N	22 36.4 -00.1	227 14.5 +02.5	N	22 26.2 +00.0	322 06.0 +02.5	S	08 27.6 +00.0	19			
20	209 46.0 +01.2	N	22 36.3 -00.1	242 17.0 +02.5	N	22 26.2 +00.0	337 08.5 +02.6	S	08 27.6 +00.1	20			
21	224 47.2 +01.2	N	22 36.2 -00.1	257 19.5 +02.5	N	22 26.2 +00.0	352 11.1 +02.6	S	08 27.7 +00.0	21			
22	239 48.4 +01.1	N	22 36.1 -00.2	272 22.0 +02.5	N	22 26.2 +00.0	7 13.7 +02.6	S	08 27.7 +00.0	22			
23	254 49.5 +01.2	N	22 35.9 -00.1	287 24.5 +02.5	N	22 26.2 +00.0	22 16.3 +02.6	S	08 27.7 +00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			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 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 247° 247° 247° 247° 247° 247°			SHA 279° 279° 279° 279° 279° 279°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 06:02			Greenwich Culmination Time: 03:53			Greenwich Culmination Time: 21:31						

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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 30.1 +00.1	S	08 14.8 +01.0	150 13.3 -00.6	S	20 00.8 +00.8	47 30.2 -31.2	S	13 22.0 -15.7	00			
01	198 30.2 +00.2	S	08 15.8 +00.9	165 12.7 -00.7	S	20 01.6 +00.9	61 59.0 -31.2	S	13 06.3 -15.9	01			
02	213 30.4 +00.1	S	08 16.7 +00.9	180 12.0 -00.6	S	20 02.5 +00.8	76 27.8 -31.1	S	12 50.4 -15.9	02			
03	228 30.5 +00.2	S	08 17.6 +00.9	195 11.4 -00.6	S	20 03.3 +00.9	90 56.7 -31.2	S	12 34.5 -16.1	03			
04	243 30.7 +00.1	S	08 18.5 +01.0	210 10.8 -00.7	S	20 04.2 +00.8	105 25.5 -31.0	S	12 18.4 -16.1	04			
05	258 30.8 +00.2	S	08 19.5 +00.9	225 10.1 -00.6	S	20 05.0 +00.9	119 54.5 -31.1	S	12 02.3 -16.2	05			
06	273 31.0 +00.1	S	08 20.4 +00.9	240 09.5 -00.6	S	20 05.9 +00.8	134 23.4 -31.0	S	11 46.1 -16.3	06			
07	288 31.1 +00.1	S	08 21.3 +01.0	255 08.9 -00.7	S	20 06.7 +00.9	148 52.4 -31.0	S	11 29.8 -16.4	07			
08	303 31.2 +00.2	S	08 22.3 +00.9	270 08.2 -00.6	S	20 07.6 +00.8	163 21.4 -31.0	S	11 13.4 -16.4	08			
09	318 31.4 +00.1	S	08 23.2 +00.9	285 07.6 -00.6	S	20 08.4 +00.9	177 50.4 -30.9	S	10 57.0 -16.6	09			
10	333 31.5 +00.2	S	08 24.1 +00.9	300 07.0 -00.7	S	20 09.3 +00.8	192 19.5 -31.0	S	10 40.4 -16.6	10			
11	348 31.7 +00.1	S	08 25.0 +01.0	315 06.3 -00.6	S	20 10.1 +00.8	206 48.5 -30.9	S	10 23.8 -16.6	11			
12	3 31.8 +00.2	S	08 26.0 +00.9	330 05.7 -00.7	S	20 10.9 +00.9	221 17.6 -30.8	S	10 07.2 -16.8	12			
13	18 32.0 +00.1	S	08 26.9 +00.9	345 05.0 -00.6	S	20 11.8 +00.8	235 46.8 -30.9	S	09 50.4 -16.8	13			
14	33 32.1 +00.1	S	08 27.8 +00.9	0 04.4 -00.6	S	20 12.6 +00.9	250 15.9 -30.8	S	09 33.6 -16.9	14			
15	48 32.2 +00.2	S	08 28.7 +01.0	15 03.8 -00.7	S	20 13.5 +00.8	264 45.1 -30.8	S	09 16.7 -17.0	15			
16	63 32.4 +00.1	S	08 29.7 +00.9	30 03.1 -00.6	S	20 14.3 +00.8	279 14.3 -30.8	S	08 59.7 -17.0	16			
17	78 32.5 +00.2	S	08 30.6 +00.9	45 02.5 -00.6	S	20 15.1 +00.9	293 43.5 -30.8	S	08 42.7 -17.1	17			
18	93 32.7 +00.1	S	08 31.5 +00.9	60 01.9 -00.7	S	20 16.0 +00.8	308 12.7 -30.8	S	08 25.6 -17.2	18			
19	108 32.8 +00.1	S	08 32.4 +01.0	75 01.2 -00.6	S	20 16.8 +00.8	322 41.9 -30.7	S	08 08.4 -17.2	19			
20	123 32.9 +00.2	S	08 33.4 +00.9	90 00.6 -00.7	S	20 17.6 +00.9	337 11.2 -30.8	S	07 51.2 -17.3	20			
21	138 33.1 +00.1	S	08 34.3 +00.9	104 59.9 -00.6	S	20 18.5 +00.8	351 40.4 -30.7	S	07 33.9 -17.4	21			
22	153 33.2 +00.2	S	08 35.2 +00.9	119 59.3 -00.7	S	20 19.3 +00.8	6 09.7 -30.7	S	07 16.5 -17.4	22			
23	168 33.4 +00.1	S	08 36.1 +00.9	134 58.6 -00.6	S	20 20.1 +00.9	20 39.0 -30.7	S	06 59.1 -17.4	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'0 16'0 16'0 16'0 16'0 16'0			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'4 16'4 16'4 16'5 16'5 16'5						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 60'1 60'2 60'3 60'4 60'5 60'6						
	SHA 160° 160° 160° 160° 160° 160°			SHA 127° 127° 127° 126° 126° 126°			SHA 023° 021° 019° 017° 014° 012°						
	Greenwich Culmination Time: 11:45			Greenwich Culmination Time: 13:59			Greenwich Culmination Time: 21:34						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	269 50.7 +01.2	N	22 35.8 -00.1	302 27.0 +02.5	N	22 26.2 +00.0	37 18.9 +02.6	S	08 27.8 +00.0	00			
01	284 51.9 +01.2	N	22 35.7 -00.1	317 29.5 +02.5	N	22 26.2 +00.0	52 21.5 +02.6	S	08 27.8 +00.1	01			
02	299 53.1 +01.2	N	22 35.6 -00.1	332 32.0 +02.5	N	22 26.2 +00.0	67 24.1 +02.6	S	08 27.9 +00.0	02			
03	314 54.3 +01.3	N	22 35.5 -00.1	347 34.5 +02.5	N	22 26.2 +00.0	82 26.7 +02.5	S	08 27.9 +00.1	03			
04	329 55.6 +01.2	N	22 35.4 -00.2	2 37.0 +02.5	N	22 26.2 +00.0	97 29.2 +02.6	S	08 28.0 +00.0	04			
05	344 56.8 +01.2	N	22 35.2 -00.1	17 39.5 +02.6	N	22 26.2 +00.0	112 31.8 +02.6	S	08 28.0 +00.1	05			
06	359 58.0 +01.2	N	22 35.1 -00.1	32 42.1 +02.5	N	22 26.2 +00.0	127 34.4 +02.6	S	08 28.1 +00.0	06			
07	14 59.2 +01.2	N	22 35.0 -00.1	47 44.6 +02.5	N	22 26.2 +00.0	142 37.0 +02.6	S	08 28.1 +00.1	07			
08	30 00.4 +01.2	N	22 34.9 -00.1	62 47.1 +02.5	N	22 26.2 +00.0	157 39.6 +02.6	S	08 28.2 +00.0	08			
09	45 01.6 +01.2	N	22 34.8 -00.1	77 49.6 +02.5	N	22 26.2 +00.0	172 42.2 +02.6	S	08 28.2 +00.1	09			
10	60 02.8 +01.2	N	22 34.7 -00.2	92 52.1 +02.5	N	22 26.2 +00.0	187 44.8 +02.5	S	08 28.3 +00.0	10			
11	75 04.0 +01.2	N	22 34.5 -00.1	107 54.6 +02.5	N	22 26.2 +00.0	202 47.3 +02.6	S	08 28.3 +00.0	11			
12	90 05.2 +01.2	N	22 34.4 -00.1	122 57.1 +02.5	N	22 26.2 +00.0	217 49.9 +02.6	S	08 28.3 +00.1	12			
13	105 06.4 +01.2	N	22 34.3 -00.1	137 59.6 +02.5	N	22 26.2 -00.1	232 52.5 +02.6	S	08 28.4 +00.0	13			
14	120 07.6 +01.2	N	22 34.2 -00.1	153 02.1 +02.6	N	22 26.1 +00.0	247 55.1 +02.6	S	08 28.4 +00.1	14			
15	135 08.8 +01.2	N	22 34.1 -00.1	168 04.7 +02.5	N	22 26.1 +00.0	262 57.7 +02.6	S	08 28.5 +00.0	15			
16	150 10.0 +01.2	N	22 34.0 -00.2	183 07.2 +02.5	N	22 26.1 +00.0	278 00.3 +02.5	S	08 28.5 +00.1	16			
17	165 11.2 +01.2	N	22 33.8 -00.1	198 09.7 +02.5	N	22 26.1 +00.0	293 02.8 +02.6	S	08 28.6 +00.0	17			
18	180 12.4 +01.2	N	22 33.7 -00.1	213 12.2 +02.5	N	22 26.1 +00.0	308 05.4 +02.6	S	08 28.6 +00.1	18			
19	195 13.6 +01.3	N	22 33.6 -00.1	228 14.7 +02.5	N	22 26.1 +00.0	323 08.0 +02.6	S	08 28.7 +00.0	19			
20	210 14.9 +01.2	N	22 33.5 -00.1	243 17.2 +02.5	N	22 26.1 +00.0	338 10.6 +02.6	S	08 28.7 +00.1	20			
21	225 16.1 +01.2	N	22 33.4 -00.1	258 19.7 +02.5	N	22 26.1 +00.0	353 13.2 +02.6	S	08 28.8 +00.0	21			
22	240 17.3 +01.2	N	22 33.3 -00.2	273 22.2 +02.6	N	22 26.1 +00.0	8 15.8 +02.6	S	08 28.8 +00.0	22			
23	255 18.5 +01.2	N	22 33.1 -00.1	288 24.8 +02.5	N	22 26.1 +00.0	23 18.4 +02.5	S	08 28.8 +00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			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 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 247° 247° 247° 247° 246° 246°			SHA 279° 279° 279° 279° 279° 279°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 06:00			Greenwich Culmination Time: 03:49			Greenwich Culmination Time: 21:27						

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 33.5 +00.1	S	08 37.0 +01.0	149 58.0 -00.6	S	20 21.0 +00.8	35 08.3 -30.7	S	06 41.7 -17.5	00			
01	198 33.6 +00.2	S	08 38.0 +00.9	164 57.4 -00.7	S	20 21.8 +00.8	49 37.6 -30.7	S	06 24.2 -17.6	01			
02	213 33.8 +00.1	S	08 38.9 +00.9	179 56.7 -00.6	S	20 22.6 +00.8	64 06.9 -30.6	S	06 06.6 -17.6	02			
03	228 33.9 +00.2	S	08 39.8 +00.9	194 56.1 -00.7	S	20 23.4 +00.9	78 36.3 -30.7	S	05 49.0 -17.7	03			
04	243 34.1 +00.1	S	08 40.7 +01.0	209 55.4 -00.6	S	20 24.3 +00.8	93 05.6 -30.7	S	05 31.3 -17.7	04			
05	258 34.2 +00.1	S	08 41.7 +00.9	224 54.8 -00.7	S	20 25.1 +00.8	107 34.9 -30.6	S	05 13.6 -17.7	05			
06	273 34.3 +00.2	S	08 42.6 +00.9	239 54.1 -00.6	S	20 25.9 +00.8	122 04.3 -30.7	S	04 55.9 -17.8	06			
07	288 34.5 +00.1	S	08 43.5 +00.9	254 53.5 -00.6	S	20 26.7 +00.9	136 33.6 -30.6	S	04 38.1 -17.8	07			
08	303 34.6 +00.1	S	08 44.4 +00.9	269 52.9 -00.7	S	20 27.6 +00.8	151 03.0 -30.7	S	04 20.3 -17.9	08			
09	318 34.7 +00.2	S	08 45.3 +01.0	284 52.2 -00.6	S	20 28.4 +00.8	165 32.3 -30.7	S	04 02.4 -17.9	09			
10	333 34.9 +00.1	S	08 46.3 +00.9	299 51.6 -00.7	S	20 29.2 +00.8	180 01.6 -30.6	S	03 44.5 -17.9	10			
11	348 35.0 +00.2	S	08 47.2 +00.9	314 50.9 -00.6	S	20 30.0 +00.8	194 31.0 -30.7	S	03 26.6 -18.0	11			
12	3 35.2 +00.1	S	08 48.1 +00.9	329 50.3 -00.7	S	20 30.8 +00.9	209 00.3 -30.6	S	03 08.6 -18.0	12			
13	18 35.3 +00.1	S	08 49.0 +00.9	344 49.6 -00.6	S	20 31.7 +00.8	223 29.7 -30.7	S	02 50.6 -18.0	13			
14	33 35.4 +00.2	S	08 49.9 +01.0	359 49.0 -00.7	S	20 32.5 +00.8	237 59.0 -30.7	S	02 32.6 -18.1	14			
15	48 35.6 +00.1	S	08 50.9 +00.9	14 48.3 -00.6	S	20 33.3 +00.8	252 28.3 -30.7	S	02 14.5 -18.0	15			
16	63 35.7 +00.1	S	08 51.8 +00.9	29 47.7 -00.7	S	20 34.1 +00.8	266 57.6 -30.7	S	01 56.5 -18.1	16			
17	78 35.8 +00.2	S	08 52.7 +00.9	44 47.0 -00.6	S	20 34.9 +00.8	281 26.9 -30.7	S	01 38.4 -18.2	17			
18	93 36.0 +00.1	S	08 53.6 +00.9	59 46.4 -00.7	S	20 35.7 +00.9	295 56.2 -30.7	S	01 20.2 -18.1	18			
19	108 36.1 +00.1	S	08 54.5 +01.0	74 45.7 -00.6	S	20 36.6 +00.8	310 25.5 -30.8	S	01 02.1 -18.2	19			
20	123 36.2 +00.2	S	08 55.5 +00.9	89 45.1 -00.7	S	20 37.4 +00.8	324 54.7 -30.7	S	00 43.9 -18.1	20			
21	138 36.4 +00.1	S	08 56.4 +00.9	104 44.4 -00.6	S	20 38.2 +00.8	339 24.0 -30.8	S	00 25.8 -18.2	21			
22	153 36.5 +00.1	S	08 57.3 +00.9	119 43.8 -00.7	S	20 39.0 +00.8	353 53.2 -30.8	S	00 07.6 -18.2	22			
23	168 36.6 +00.2	S	08 58.2 +00.9	134 43.1 -00.7	S	20 39.8 +00.8	8 22.4 -30.8	N	00 10.6 +18.2	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 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'6 16'6 16'6 16'6 16'6 16'7						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 60'8 60'8 60'9 61'0 61'1 61'2						
	SHA 159° 159° 159° 159° 159° 159°			SHA 126° 126° 125° 125° 125° 125°			SHA 010° 008° 006° 003° 001° 359°						
	Greenwich Culmination Time: 11:45			Greenwich Culmination Time: 14:00			Greenwich Culmination Time: 22:25						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	270 19.7 +01.2	N	22 33.0 -00.1	303 27.3 +02.5	N	22 26.1 +00.0	38 20.9 +02.6	S	08 28.9 +00.0	00			
01	285 20.9 +01.2	N	22 32.9 -00.1	318 29.8 +02.5	N	22 26.1 +00.0	53 23.5 +02.6	S	08 28.9 +00.1	01			
02	300 22.1 +01.2	N	22 32.8 -00.1	333 32.3 +02.5	N	22 26.1 +00.0	68 26.1 +02.6	S	08 29.0 +00.0	02			
03	315 23.3 +01.3	N	22 32.7 -00.2	348 34.8 +02.5	N	22 26.1 +00.0	83 28.7 +02.6	S	08 29.0 +00.1	03			
04	330 24.6 +01.2	N	22 32.5 -00.1	3 37.3 +02.6	N	22 26.1 +00.0	98 31.3 +02.6	S	08 29.1 +00.0	04			
05	345 25.8 +01.2	N	22 32.4 -00.1	18 39.9 +02.5	N	22 26.1 +00.0	113 33.9 +02.5	S	08 29.1 +00.1	05			
06	0 27.0 +01.2	N	22 32.3 -00.1	33 42.4 +02.5	N	22 26.1 +00.0	128 36.4 +02.6	S	08 29.2 +00.0	06			
07	15 28.2 +01.2	N	22 32.2 -00.1	48 44.9 +02.5	N	22 26.1 +00.0	143 39.0 +02.6	S	08 29.2 +00.0	07			
08	30 29.4 +01.2	N	22 32.1 -00.1	63 47.4 +02.5	N	22 26.1 +00.0	158 41.6 +02.6	S	08 29.2 +00.1	08			
09	45 30.6 +01.3	N	22 32.0 -00.2	78 49.9 +02.6	N	22 26.1 +00.0	173 44.2 +02.6	S	08 29.3 +00.0	09			
10	60 31.9 +01.2	N	22 31.8 -00.1	93 52.5 +02.5	N	22 26.1 +00.0	188 46.8 +02.6	S	08 29.3 +00.1	10			
11	75 33.1 +01.2	N	22 31.7 -00.1	108 55.0 +02.5	N	22 26.1 +00.0	203 49.4 +02.5	S	08 29.4 +00.0	11			
12	90 34.3 +01.2	N	22 31.6 -00.1	123 57.5 +02.5	N	22 26.1 +00.0	218 51.9 +02.6	S	08 29.4 +00.1	12			
13	105 35.5 +01.2	N	22 31.5 -00.1	139 00.0 +02.5	N	22 26.1 +00.0	233 54.5 +02.6	S	08 29.5 +00.0	13			
14	120 36.7 +01.3	N	22 31.4 -00.2	154 02.5 +02.6	N	22 26.1 +00.0	248 57.1 +02.6	S	08 29.5 +00.1	14			
15	135 38.0 +01.2	N	22 31.2 -00.1	169 05.1 +02.5	N	22 26.1 +00.0	263 59.7 +02.6	S	08 29.6 +00.0	15			
16	150 39.2 +01.2	N	22 31.1 -00.1	184 07.6 +02.5	N	22 26.1 +00.0	279 02.3 +02.5	S	08 29.6 +00.0	16			
17	165 40.4 +01.2	N	22 31.0 -00.1	199 10.1 +02.5	N	22 26.1 -00.1	294 04.8 +02.6	S	08 29.6 +00.1	17			
18	180 41.6 +01.2	N	22 30.9 -00.1	214 12.6 +02.5	N	22 26.0 +00.0	309 07.4 +02.6	S	08 29.7 +00.0	18			
19	195 42.8 +01.3	N	22 30.8 -00.2	229 15.1 +02.6	N	22 26.0 +00.0	324 10.0 +02.6	S	08 29.7 +00.1	19			
20	210 44.1 +01.2	N	22 30.6 -00.1	244 17.7 +02.5	N	22 26.0 +00.0	339 12.6 +02.6	S	08 29.8 +00.0	20			
21	225 45.3 +01.2	N	22 30.5 -00.1	259 20.2 +02.5	N	22 26.0 +00.0	354 15.2 +02.6	S	08 29.8 +00.1	21			
22	240 46.5 +01.2	N	22 30.4 -00.1	274 22.7 +02.5	N	22 26.0 +00.0	9 17.8 +02.5	S	08 29.9 +00.0	22			
23	255 47.7 +01.3	N	22 30.3 -00.1	289 25.2 +02.6	N	22 26.0 +00.0	24 20.3 +02.6	S	08 29.9 +00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			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 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 246° 246° 246° 246° 246° 246°			SHA 279° 279° 279° 279° 279° 279°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 05:58			Greenwich Culmination Time: 03:45			Greenwich Culmination Time: 21:22						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 36.8 +00.1	S	08 59.1 +00.9	149 42.4 -00.6	S	20 40.6 +00.8	22 51.6 -30.8	N	00 28.8 +18.2	00			
01	198 36.9 +00.1	S	09 00.0 +01.0	164 41.8 -00.7	S	20 41.4 +00.8	37 20.8 -30.9	N	00 47.0 +18.2	01			
02	213 37.0 +00.2	S	09 01.0 +00.9	179 41.1 -00.6	S	20 42.2 +00.8	51 49.9 -30.8	N	01 05.2 +18.2	02			
03	228 37.2 +00.1	S	09 01.9 +00.9	194 40.5 -00.7	S	20 43.0 +00.8	66 19.1 -30.9	N	01 23.4 +18.3	03			
04	243 37.3 +00.1	S	09 02.8 +00.9	209 39.8 -00.6	S	20 43.8 +00.8	80 48.2 -30.9	N	01 41.7 +18.2	04			
05	258 37.4 +00.2	S	09 03.7 +00.9	224 39.2 -00.7	S	20 44.6 +00.8	95 17.3 -31.0	N	01 59.9 +18.2	05			
06	273 37.6 +00.1	S	09 04.6 +01.0	239 38.5 -00.6	S	20 45.4 +00.8	109 46.3 -31.0	N	02 18.1 +18.2	06			
07	288 37.7 +00.1	S	09 05.6 +00.9	254 37.9 -00.7	S	20 46.2 +00.8	124 15.3 -31.0	N	02 36.3 +18.2	07			
08	303 37.8 +00.2	S	09 06.5 +00.9	269 37.2 -00.7	S	20 47.0 +00.8	138 44.3 -31.0	N	02 54.5 +18.2	08			
09	318 38.0 +00.1	S	09 07.4 +00.9	284 36.5 -00.6	S	20 47.8 +00.8	153 13.3 -31.1	N	03 12.7 +18.1	09			
10	333 38.1 +00.1	S	09 08.3 +00.9	299 35.9 -00.7	S	20 48.6 +00.8	167 42.2 -31.1	N	03 30.8 +18.2	10			
11	348 38.2 +00.2	S	09 09.2 +00.9	314 35.2 -00.6	S	20 49.4 +00.8	182 11.1 -31.1	N	03 49.0 +18.1	11			
12	3 38.4 +00.1	S	09 10.1 +00.9	329 34.6 -00.7	S	20 50.2 +00.8	196 40.0 -31.1	N	04 07.1 +18.2	12			
13	18 38.5 +00.1	S	09 11.0 +01.0	344 33.9 -00.7	S	20 51.0 +00.8	211 08.9 -31.2	N	04 25.3 +18.1	13			
14	33 38.6 +00.2	S	09 12.0 +00.9	359 33.2 -00.6	S	20 51.8 +00.8	225 37.7 -31.3	N	04 43.4 +18.0	14			
15	48 38.8 +00.1	S	09 12.9 +00.9	14 32.6 -00.7	S	20 52.6 +00.8	240 06.4 -31.3	N	05 01.4 +18.1	15			
16	63 38.9 +00.1	S	09 13.8 +00.9	29 31.9 -00.7	S	20 53.4 +00.8	254 35.1 -31.3	N	05 19.5 +18.0	16			
17	78 39.0 +00.1	S	09 14.7 +00.9	44 31.2 -00.6	S	20 54.2 +00.8	269 03.8 -31.3	N	05 37.5 +18.0	17			
18	93 39.1 +00.2	S	09 15.6 +00.9	59 30.6 -00.7	S	20 55.0 +00.8	283 32.5 -31.4	N	05 55.5 +18.0	18			
19	108 39.3 +00.1	S	09 16.5 +00.9	74 29.9 -00.6	S	20 55.8 +00.8	298 01.1 -31.5	N	06 13.5 +17.9	19			
20	123 39.4 +00.1	S	09 17.4 +01.0	89 29.3 -00.7	S	20 56.6 +00.8	312 29.6 -31.4	N	06 31.4 +17.9	20			
21	138 39.5 +00.2	S	09 18.4 +00.9	104 28.6 -00.7	S	20 57.4 +00.7	326 58.2 -31.6	N	06 49.3 +17.9	21			
22	153 39.7 +00.1	S	09 19.3 +00.9	119 27.9 -00.6	S	20 58.1 +00.8	341 26.6 -31.6	N	07 07.2 +17.8	22			
23	168 39.8 +00.1	S	09 20.2 +00.9	134 27.3 -00.7	S	20 58.9 +00.8	355 55.0 -31.6	N	07 25.0 +17.8	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 00'1 00'1 00'1 00'1 00'1 00'1			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 00'1 00'1 00'1 00'1 00'1 00'1			HP 61'2 61'3 61'3 61'3 61'3 61'4						
	SHA 159° 158° 158° 158° 158° 158°			SHA 125° 124° 124° 124° 124° 124°			SHA 357° 355° 352° 350° 348° 346°						
	Greenwich Culmination Time: 11:45			Greenwich Culmination Time: 14:01			Greenwich Culmination Time: 23:16						

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	270 49.0 +01.2	N	22 30.2 -00.1	304 27.8 +02.5	N	22 26.0 +00.0	39 22.9 +02.6	S	08 30.0 +00.0	00			
01	285 50.2 +01.2	N	22 30.1 -00.2	319 30.3 +02.5	N	22 26.0 +00.0	54 25.5 +02.6	S	08 30.0 +00.0	01			
02	300 51.4 +01.3	N	22 29.9 -00.1	334 32.8 +02.5	N	22 26.0 +00.0	69 28.1 +02.6	S	08 30.0 +00.1	02			
03	315 52.7 +01.2	N	22 29.8 -00.1	349 35.3 +02.6	N	22 26.0 +00.0	84 30.7 +02.5	S	08 30.1 +00.0	03			
04	330 53.9 +01.2	N	22 29.7 -00.1	4 37.9 +02.5	N	22 26.0 +00.0	99 33.2 +02.6	S	08 30.1 +00.1	04			
05	345 55.1 +01.2	N	22 29.6 -00.1	19 40.4 +02.5	N	22 26.0 +00.0	114 35.8 +02.6	S	08 30.2 +00.0	05			
06	0 56.3 +01.3	N	22 29.5 -00.2	34 42.9 +02.5	N	22 26.0 +00.0	129 38.4 +02.6	S	08 30.2 +00.1	06			
07	15 57.6 +01.2	N	22 29.3 -00.1	49 45.4 +02.6	N	22 26.0 +00.0	144 41.0 +02.6	S	08 30.3 +00.0	07			
08	30 58.8 +01.2	N	22 29.2 -00.1	64 48.0 +02.5	N	22 26.0 +00.0	159 43.6 +02.5	S	08 30.3 +00.0	08			
09	46 00.0 +01.3	N	22 29.1 -00.1	79 50.5 +02.5	N	22 26.0 +00.0	174 46.1 +02.6	S	08 30.3 +00.1	09			
10	61 01.3 +01.2	N	22 29.0 -00.1	94 53.0 +02.6	N	22 26.0 +00.0	189 48.7 +02.6	S	08 30.4 +00.0	10			
11	76 02.5 +01.2	N	22 28.9 -00.2	109 55.6 +02.5	N	22 26.0 +00.0	204 51.3 +02.6	S	08 30.4 +00.1	11			
12	91 03.7 +01.3	N	22 28.7 -00.1	124 58.1 +02.5	N	22 26.0 +00.0	219 53.9 +02.6	S	08 30.5 +00.0	12			
13	106 05.0 +01.2	N	22 28.6 -00.1	140 00.6 +02.5	N	22 26.0 +00.0	234 56.5 +02.5	S	08 30.5 +00.1	13			
14	121 06.2 +01.2	N	22 28.5 -00.1	155 03.1 +02.6	N	22 26.0 +00.0	249 59.0 +02.6	S	08 30.6 +00.0	14			
15	136 07.4 +01.3	N	22 28.4 -00.1	170 05.7 +02.5	N	22 26.0 +00.0	265 01.6 +02.6	S	08 30.6 +00.0	15			
16	151 08.7 +01.2	N	22 28.3 -00.2	185 08.2 +02.5	N	22 26.0 +00.0	280 04.2 +02.6	S	08 30.6 +00.1	16			
17	166 09.9 +01.3	N	22 28.1 -00.1	200 10.7 +02.6	N	22 26.0 -00.1	295 06.8 +02.6	S	08 30.7 +00.0	17			
18	181 11.2 +01.2	N	22 28.0 -00.1	215 13.3 +02.5	N	22 25.9 +00.0	310 09.4 +02.5	S	08 30.7 +00.1	18			
19	196 12.4 +01.2	N	22 27.9 -00.1	230 15.8 +02.5	N	22 25.9 +00.0	325 11.9 +02.6	S	08 30.8 +00.0	19			
20	211 13.6 +01.3	N	22 27.8 -00.1	245 18.3 +02.6	N	22 25.9 +00.0	340 14.5 +02.6	S	08 30.8 +00.1	20			
21	226 14.9 +01.2	N	22 27.7 -00.2	260 20.9 +02.5	N	22 25.9 +00.0	355 17.1 +02.6	S	08 30.9 +00.0	21			
22	241 16.1 +01.2	N	22 27.5 -00.1	275 23.4 +02.5	N	22 25.9 +00.0	10 19.7 +02.5	S	08 30.9 +00.0	22			
23	256 17.3 +01.3	N	22 27.4 -00.1	290 25.9 +02.6	N	22 25.9 +00.0	25 22.2 +02.6	S	08 30.9 +00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			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 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 246° 246° 246° 246° 245° 245°			SHA 279° 279° 279° 279° 279° 279°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 05:56			Greenwich Culmination Time: 03:41			Greenwich Culmination Time: 21:18						



UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> <span style="float: right;">A: 49%</span>				UT
	GHA ° / ' / "	ddGHA	Dec ° / ' / "	dDec	GHA ° / ' / "	ddGHA	Dec ° / ' / "	dDec	GHA ° / ' / "	ddGHA	Dec ° / ' / "	dDec	
00	183 39.9 +00.1	S	09 21.1 +00.9		149 26.6 -00.7	S	20 59.7 +00.8		10 23.4 -31.7	N	07 42.8 +17.7		00
01	198 40.0 +00.2	S	09 22.0 +00.9		164 25.9 -00.6	S	21 00.5 +00.8		24 51.7 -31.7	N	08 00.5 +17.7		01
02	213 40.2 +00.1	S	09 22.9 +00.9		179 25.3 -00.7	S	21 01.3 +00.8		39 20.0 -31.8	N	08 18.2 +17.6		02
03	228 40.3 +00.1	S	09 23.8 +00.9		194 24.6 -00.7	S	21 02.1 +00.7		53 48.2 -31.8	N	08 35.8 +17.6		03
04	243 40.4 +00.1	S	09 24.7 +00.9		209 23.9 -00.6	S	21 02.8 +00.8		68 16.4 -31.9	N	08 53.4 +17.5		04
05	258 40.5 +00.2	S	09 25.6 +01.0		224 23.3 -00.7	S	21 03.6 +00.8		82 44.5 -31.9	N	09 10.9 +17.5		05
06	273 40.7 +00.1	S	09 26.6 +00.9		239 22.6 -00.7	S	21 04.4 +00.8		97 12.6 -32.0	N	09 28.4 +17.4		06
07	288 40.8 +00.1	S	09 27.5 +00.9		254 21.9 -00.6	S	21 05.2 +00.8		111 40.6 -32.0	N	09 45.8 +17.4		07
08	303 40.9 +00.1	S	09 28.4 +00.9		269 21.3 -00.7	S	21 06.0 +00.7		126 08.6 -32.1	N	10 03.2 +17.3		08
09	318 41.0 +00.2	S	09 29.3 +00.9		284 20.6 -00.7	S	21 06.7 +00.8		140 36.5 -32.2	N	10 20.5 +17.2		09
10	333 41.2 +00.1	S	09 30.2 +00.9		299 19.9 -00.7	S	21 07.5 +00.8		155 04.3 -32.2	N	10 37.7 +17.2		10
11	348 41.3 +00.1	S	09 31.1 +00.9		314 19.2 -00.6	S	21 08.3 +00.8		169 32.1 -32.3	N	10 54.9 +17.1		11
12	3 41.4 +00.1	S	09 32.0 +00.9		329 18.6 -00.7	S	21 09.1 +00.7		183 59.8 -32.3	N	11 12.0 +17.0		12
13	18 41.5 +00.2	S	09 32.9 +00.9		344 17.9 -00.7	S	21 09.8 +00.8		198 27.5 -32.5	N	11 29.0 +17.0		13
14	33 41.7 +00.1	S	09 33.8 +00.9		359 17.2 -00.6	S	21 10.6 +00.8		212 55.0 -32.4	N	11 46.0 +16.8		14
15	48 41.8 +00.1	S	09 34.7 +01.0		14 16.6 -00.7	S	21 11.4 +00.7		227 22.6 -32.5	N	12 02.8 +16.8		15
16	63 41.9 +00.1	S	09 35.7 +00.9		29 15.9 -00.7	S	21 12.1 +00.8		241 50.1 -32.6	N	12 19.6 +16.8		16
17	78 42.0 +00.2	S	09 36.6 +00.9		44 15.2 -00.7	S	21 12.9 +00.8		256 17.5 -32.7	N	12 36.4 +16.6		17
18	93 42.2 +00.1	S	09 37.5 +00.9		59 14.5 -00.6	S	21 13.7 +00.7		270 44.8 -32.7	N	12 53.0 +16.6		18
19	108 42.3 +00.1	S	09 38.4 +00.9		74 13.9 -00.7	S	21 14.4 +00.8		285 12.1 -32.8	N	13 09.6 +16.4		19
20	123 42.4 +00.1	S	09 39.3 +00.9		89 13.2 -00.7	S	21 15.2 +00.8		299 39.3 -32.9	N	13 26.0 +16.4		20
21	138 42.5 +00.2	S	09 40.2 +00.9		104 12.5 -00.7	S	21 16.0 +00.7		314 06.4 -32.9	N	13 42.4 +16.3		21
22	153 42.7 +00.1	S	09 41.1 +00.9		119 11.8 -00.6	S	21 16.7 +00.8		328 33.5 -33.0	N	13 58.7 +16.2		22
23	168 42.8 +00.1	S	09 42.0 +00.9		134 11.2 -00.7	S	21 17.5 +00.8		343 00.5 -33.1	N	14 14.9 +16.1		23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 16°0 16°0 16°1 16°1 16°1 16°1				SD 00°1 00°1 00°1 00°1 00°1 00°1				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°1 00°1 00°1 00°1 00°1 00°1				HP 61°4 61°4 61°3 61°3 61°3 61°2				
	SHA 158° 157° 157° 157° 157° 157°				SHA 123° 123° 123° 123° 123° 122°				SHA 343° 341° 339° 336° 334° 332°				
	Greenwich Culmination Time: 11:45				Greenwich Culmination Time: 14:02				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	271 18.6 +01.2	N	22 27.3 -00.1		305 28.5 +02.5	N	22 25.9 +00.0		40 24.8 +02.6	S	08 31.0 +00.0		00
01	286 19.8 +01.3	N	22 27.2 -00.1		320 31.0 +02.5	N	22 25.9 +00.0		55 27.4 +02.6	S	08 31.0 +00.1		01
02	301 21.1 +01.2	N	22 27.1 -00.2		335 33.5 +02.6	N	22 25.9 +00.0		70 30.0 +02.6	S	08 31.1 +00.0		02
03	316 22.3 +01.3	N	22 26.9 -00.1		350 36.1 +02.5	N	22 25.9 +00.0		85 32.6 +02.5	S	08 31.1 +00.0		03
04	331 23.6 +01.2	N	22 26.8 -00.1		5 38.6 +02.5	N	22 25.9 +00.0		100 35.1 +02.6	S	08 31.1 +00.1		04
05	346 24.8 +01.2	N	22 26.7 -00.1		20 41.1 +02.6	N	22 25.9 +00.0		115 37.7 +02.6	S	08 31.2 +00.0		05
06	1 26.0 +01.3	N	22 26.6 -00.1		35 43.7 +02.5	N	22 25.9 +00.0		130 40.3 +02.6	S	08 31.2 +00.1		06
07	16 27.3 +01.2	N	22 26.5 -00.2		50 46.2 +02.5	N	22 25.9 +00.0		145 42.9 +02.5	S	08 31.3 +00.0		07
08	31 28.5 +01.3	N	22 26.3 -00.1		65 48.7 +02.6	N	22 25.9 +00.0		160 45.4 +02.6	S	08 31.3 +00.1		08
09	46 29.8 +01.2	N	22 26.2 -00.1		80 51.3 +02.5	N	22 25.9 +00.0		175 48.0 +02.6	S	08 31.4 +00.0		09
10	61 31.0 +01.3	N	22 26.1 -00.1		95 53.8 +02.6	N	22 25.9 +00.0		190 50.6 +02.6	S	08 31.4 +00.0		10
11	76 32.3 +01.2	N	22 26.0 -00.1		110 56.4 +02.5	N	22 25.9 +00.0		205 53.2 +02.5	S	08 31.4 +00.1		11
12	91 33.5 +01.3	N	22 25.9 -00.2		125 58.9 +02.5	N	22 25.9 +00.0		220 55.7 +02.6	S	08 31.5 +00.0		12
13	106 34.8 +01.2	N	22 25.7 -00.1		141 01.4 +02.6	N	22 25.9 +00.0		235 58.3 +02.6	S	08 31.5 +00.1		13
14	121 36.0 +01.3	N	22 25.6 -00.1		156 04.0 +02.5	N	22 25.9 +00.0		251 00.9 +02.6	S	08 31.6 +00.0		14
15	136 37.3 +01.2	N	22 25.5 -00.1		171 06.5 +02.6	N	22 25.9 -00.1		266 03.5 +02.5	S	08 31.6 +00.0		15
16	151 38.5 +01.3	N	22 25.4 -00.1		186 09.1 +02.5	N	22 25.8 +00.0		281 06.0 +02.6	S	08 31.6 +00.1		16
17	166 39.8 +01.2	N	22 25.3 -00.2		201 11.6 +02.5	N	22 25.8 +00.0		296 08.6 +02.6	S	08 31.7 +00.0		17
18	181 41.0 +01.3	N	22 25.1 -00.1		216 14.1 +02.6	N	22 25.8 +00.0		311 11.2 +02.6	S	08 31.7 +00.1		18
19	196 42.3 +01.2	N	22 25.0 -00.1		231 16.7 +02.5	N	22 25.8 +00.0		326 13.8 +02.6	S	08 31.8 +00.0		19
20	211 43.5 +01.3	N	22 24.9 -00.1		246 19.2 +02.6	N	22 25.8 +00.0		341 16.4 +02.5	S	08 31.8 +00.1		20
21	226 44.8 +01.2	N	22 24.8 -00.1		261 21.8 +02.5	N	22 25.8 +00.0		356 18.9 +02.6	S	08 31.9 +00.0		21
22	241 46.0 +01.3	N	22 24.7 -00.2		276 24.3 +02.5	N	22 25.8 +00.0		11 21.5 +02.6	S	08 31.9 +00.0		22
23	256 47.3 +01.2	N	22 24.5 -00.1		291 26.8 +02.6	N	22 25.8 +00.0		26 24.1 +02.6	S	08 31.9 +00.1		23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 00°1 00°1 00°1 00°1 00°1 00°1				SD 00°4 00°4 00°4 00°4 00°4 00°4				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°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 245° 245° 245° 245° 245° 245°				SHA 279° 279° 279° 280° 280° 280°				SHA 014° 014° 014° 014° 014° 014°				
	Greenwich Culmination Time: 05:54				Greenwich Culmination Time: 03:37				Greenwich Culmination Time: 21:14				

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 42.9 +00.1	S	09 42.9 +00.9	149 10.5 -00.7	S	21 18.3 +00.7	357 27.4 -33.1	N	14 31.0 +16.0				
01	198 43.0 +00.1	S	09 43.8 +00.9	164 09.8 -00.7	S	21 19.0 +00.8	11 54.3 -33.2	N	14 47.0 +15.9				
02	213 43.1 +00.2	S	09 44.7 +00.9	179 09.1 -00.7	S	21 19.8 +00.7	26 21.1 -33.3	N	15 02.9 +15.8				
03	228 43.3 +00.1	S	09 45.6 +00.9	194 08.4 -00.6	S	21 20.5 +00.8	40 47.8 -33.3	N	15 18.7 +15.7				
04	243 43.4 +00.1	S	09 46.5 +00.9	209 07.8 -00.7	S	21 21.3 +00.8	55 14.5 -33.4	N	15 34.4 +15.6				
05	258 43.5 +00.1	S	09 47.4 +01.0	224 07.1 -00.7	S	21 22.1 +00.7	69 41.1 -33.5	N	15 50.0 +15.5				
06	273 43.6 +00.1	S	09 48.4 +00.9	239 06.4 -00.7	S	21 22.8 +00.8	84 07.6 -33.6	N	16 05.5 +15.4				
07	288 43.7 +00.2	S	09 49.3 +00.9	254 05.7 -00.7	S	21 23.6 +00.7	98 34.0 -33.6	N	16 20.9 +15.3				
08	303 43.9 +00.1	S	09 50.2 +00.9	269 05.0 -00.6	S	21 24.3 +00.8	113 00.4 -33.7	N	16 36.2 +15.1				
09	318 44.0 +00.1	S	09 51.1 +00.9	284 04.4 -00.7	S	21 25.1 +00.7	127 26.7 -33.8	N	16 51.3 +15.1				
10	333 44.1 +00.1	S	09 52.0 +00.9	299 03.7 -00.7	S	21 25.8 +00.8	141 52.9 -33.9	N	17 06.4 +14.9				
11	348 44.2 +00.1	S	09 52.9 +00.9	314 03.0 -00.7	S	21 26.6 +00.7	156 19.0 -33.9	N	17 21.3 +14.8				
12	3 44.3 +00.1	S	09 53.8 +00.9	329 02.3 -00.7	S	21 27.3 +00.8	170 45.1 -34.0	N	17 36.1 +14.7				
13	18 44.4 +00.2	S	09 54.7 +00.9	344 01.6 -00.7	S	21 28.1 +00.7	185 11.1 -34.1	N	17 50.8 +14.5				
14	33 44.6 +00.1	S	09 55.6 +00.9	359 00.9 -00.6	S	21 28.8 +00.8	199 37.0 -34.2	N	18 05.3 +14.5				
15	48 44.7 +00.1	S	09 56.5 +00.9	14 00.3 -00.7	S	21 29.6 +00.7	214 02.8 -34.2	N	18 19.8 +14.3				
16	63 44.8 +00.1	S	09 57.4 +00.9	28 59.6 -00.7	S	21 30.3 +00.8	228 28.6 -34.3	N	18 34.1 +14.2				
17	78 44.9 +00.1	S	09 58.3 +00.9	43 58.9 -00.7	S	21 31.1 +00.7	242 54.3 -34.4	N	18 48.3 +14.0				
18	93 45.0 +00.1	S	09 59.2 +00.9	58 58.2 -00.7	S	21 31.8 +00.8	257 19.9 -34.4	N	19 02.3 +13.9				
19	108 45.1 +00.2	S	10 00.1 +00.9	73 57.5 -00.7	S	21 32.6 +00.7	271 45.5 -34.5	N	19 16.2 +13.8				
20	123 45.3 +00.1	S	10 01.0 +00.9	88 56.8 -00.7	S	21 33.3 +00.7	286 11.0 -34.6	N	19 30.0 +13.6				
21	138 45.4 +00.1	S	10 01.9 +00.9	103 56.1 -00.6	S	21 34.0 +00.8	300 36.4 -34.7	N	19 43.6 +13.5				
22	153 45.5 +00.1	S	10 02.8 +00.9	118 55.5 -00.7	S	21 34.8 +00.7	315 01.7 -34.8	N	19 57.1 +13.4				
23	168 45.6 +00.1	S	10 03.7 +00.9	133 54.8 -00.7	S	21 35.5 +00.8	329 26.9 -34.8	N	20 10.5 +13.2				
	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 16'1 16'1 16'1 16'1 16'1 16'1		SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 16'7 16'7 16'6 16'6 16'6 16'6		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 00'1 00'1 00'1 00'1 00'1 00'1		HP 61'2 61'1 61'0 61'0 60'9 60'8		HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 157° 157° 156° 156° 156° 156°		SHA 122° 122° 122° 121° 121° 121°		SHA 329° 327° 324° 322° 320° 317°		SHA 014° 014° 014° 014° 015° 015°						
	Greenwich Culmination Time: 11:45		Greenwich Culmination Time: 14:03		Greenwich Culmination Time: 00:10		Greenwich Culmination Time: 21:10						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	271 48.5 +01.3	N	22 24.4 -00.1	306 29.4 +02.5	N	22 25.8 +00.0	41 26.7 +02.5	S	08 32.0 +00.0				
01	286 49.8 +01.2	N	22 24.3 -00.1	321 31.9 +02.6	N	22 25.8 +00.0	56 29.2 +02.6	S	08 32.0 +00.1				
02	301 51.0 +01.3	N	22 24.2 -00.1	336 34.5 +02.5	N	22 25.8 +00.0	71 31.8 +02.6	S	08 32.1 +00.0				
03	316 52.3 +01.3	N	22 24.1 -00.2	351 37.0 +02.6	N	22 25.8 +00.0	86 34.4 +02.5	S	08 32.1 +00.0				
04	331 53.6 +01.2	N	22 23.9 -00.1	6 39.6 +02.5	N	22 25.8 +00.0	101 36.9 +02.6	S	08 32.1 +00.1				
05	346 54.8 +01.3	N	22 23.8 -00.1	21 42.1 +02.5	N	22 25.8 +00.0	116 39.5 +02.6	S	08 32.2 +00.0				
06	1 56.1 +01.2	N	22 23.7 -00.1	36 44.6 +02.6	N	22 25.8 +00.0	131 42.1 +02.6	S	08 32.2 +00.1				
07	16 57.3 +01.3	N	22 23.6 -00.1	51 47.2 +02.5	N	22 25.8 +00.0	146 44.7 +02.5	S	08 32.3 +00.0				
08	31 58.6 +01.3	N	22 23.5 -00.2	66 49.7 +02.6	N	22 25.8 +00.0	161 47.2 +02.6	S	08 32.3 +00.0				
09	46 59.9 +01.2	N	22 23.3 -00.1	81 52.3 +02.5	N	22 25.8 +00.0	176 49.8 +02.6	S	08 32.3 +00.1				
10	62 01.1 +01.3	N	22 23.2 -00.1	96 54.8 +02.6	N	22 25.8 -00.1	191 52.4 +02.6	S	08 32.4 +00.0				
11	77 02.4 +01.2	N	22 23.1 -00.1	111 57.4 +02.5	N	22 25.7 +00.0	206 55.0 +02.5	S	08 32.4 +00.1				
12	92 03.6 +01.3	N	22 23.0 -00.1	126 59.9 +02.6	N	22 25.7 +00.0	221 57.5 +02.6	S	08 32.5 +00.0				
13	107 04.9 +01.3	N	22 22.9 -00.2	142 02.5 +02.5	N	22 25.7 +00.0	237 00.1 +02.6	S	08 32.5 +00.0				
14	122 06.2 +01.2	N	22 22.7 -00.1	157 05.0 +02.6	N	22 25.7 +00.0	252 02.7 +02.6	S	08 32.5 +00.1				
15	137 07.4 +01.3	N	22 22.6 -00.1	172 07.6 +02.5	N	22 25.7 +00.0	267 05.3 +02.5	S	08 32.6 +00.0				
16	152 08.7 +01.3	N	22 22.5 -00.1	187 10.1 +02.6	N	22 25.7 +00.0	282 07.8 +02.6	S	08 32.6 +00.1				
17	167 10.0 +01.2	N	22 22.4 -00.1	202 12.7 +02.5	N	22 25.7 +00.0	297 10.4 +02.6	S	08 32.7 +00.0				
18	182 11.2 +01.3	N	22 22.3 -00.2	217 15.2 +02.6	N	22 25.7 +00.0	312 13.0 +02.5	S	08 32.7 +00.0				
19	197 12.5 +01.3	N	22 22.1 -00.1	232 17.8 +02.5	N	22 25.7 +00.0	327 15.5 +02.6	S	08 32.7 +00.1				
20	212 13.8 +01.2	N	22 22.0 -00.1	247 20.3 +02.6	N	22 25.7 +00.0	342 18.1 +02.6	S	08 32.8 +00.0				
21	227 15.0 +01.3	N	22 21.9 -00.1	262 22.9 +02.5	N	22 25.7 +00.0	357 20.7 +02.6	S	08 32.8 +00.1				
22	242 16.3 +01.3	N	22 21.8 -00.1	277 25.4 +02.6	N	22 25.7 +00.0	12 23.3 +02.5	S	08 32.9 +00.0				
23	257 17.6 +01.2	N	22 21.7 -00.2	292 28.0 +02.5	N	22 25.7 +00.0	27 25.8 +02.6	S	08 32.9 +00.0				
	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 00'1 00'1 00'1 00'1 00'1 00'1		SD 00'4 00'4 00'4 00'4 00'4 00'4		SD 00'2 00'2 00'2 00'2 00'2 00'2		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 00'0 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 245° 245° 245° 245° 244° 244°		SHA 280° 280° 280° 280° 280° 280°		SHA 014° 014° 014° 014° 015° 015°		SHA 014° 014° 014° 014° 015° 015°						
	Greenwich Culmination Time: 05:52		Greenwich Culmination Time: 03:33		Greenwich Culmination Time: 21:10		Greenwich Culmination Time: 21:10						

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 45.7 +00.1	S	10 04.6 +00.9	148 54.1 -00.7	S	21 36.3 +00.7	343 52.1 -34.9	N	20 23.7 +13.1	00			
01	198 45.8 +00.2	S	10 05.5 +00.9	163 53.4 -00.7	S	21 37.0 +00.7	358 17.2 -34.9	N	20 36.8 +12.9	01			
02	213 46.0 +00.1	S	10 06.4 +00.9	178 52.7 -00.7	S	21 37.7 +00.8	12 42.3 -35.1	N	20 49.7 +12.8	02			
03	228 46.1 +00.1	S	10 07.3 +00.9	193 52.0 -00.7	S	21 38.5 +00.7	27 07.2 -35.1	N	21 02.5 +12.6	03			
04	243 46.2 +00.1	S	10 08.2 +00.9	208 51.3 -00.7	S	21 39.2 +00.7	41 32.1 -35.2	N	21 15.1 +12.5	04			
05	258 46.3 +00.1	S	10 09.1 +00.9	223 50.6 -00.7	S	21 39.9 +00.8	55 56.9 -35.2	N	21 27.6 +12.3	05			
06	273 46.4 +00.1	S	10 10.0 +00.9	238 49.9 -00.7	S	21 40.7 +00.7	70 21.7 -35.3	N	21 39.9 +12.2	06			
07	288 46.5 +00.1	S	10 10.9 +00.9	253 49.2 -00.7	S	21 41.4 +00.7	84 46.4 -35.4	N	21 52.1 +12.0	07			
08	303 46.6 +00.1	S	10 11.8 +00.9	268 48.5 -00.6	S	21 42.1 +00.8	99 11.0 -35.5	N	22 04.1 +11.9	08			
09	318 46.7 +00.2	S	10 12.7 +00.9	283 47.9 -00.7	S	21 42.9 +00.7	113 35.5 -35.5	N	22 16.0 +11.7	09			
10	333 46.9 +00.1	S	10 13.6 +00.9	298 47.2 -00.7	S	21 43.6 +00.7	128 00.0 -35.6	N	22 27.7 +11.5	10			
11	348 47.0 +00.1	S	10 14.5 +00.9	313 46.5 -00.7	S	21 44.3 +00.8	142 24.4 -35.6	N	22 39.2 +11.4	11			
12	3 47.1 +00.1	S	10 15.4 +00.9	328 45.8 -00.7	S	21 45.1 +00.7	156 48.8 -35.8	N	22 50.6 +11.2	12			
13	18 47.2 +00.1	S	10 16.3 +00.9	343 45.1 -00.7	S	21 45.8 +00.7	171 13.0 -35.7	N	23 01.8 +11.1	13			
14	33 47.3 +00.1	S	10 17.2 +00.9	358 44.4 -00.7	S	21 46.5 +00.7	185 37.3 -35.9	N	23 12.9 +10.8	14			
15	48 47.4 +00.1	S	10 18.1 +00.9	13 43.7 -00.7	S	21 47.2 +00.7	200 01.4 -35.9	N	23 23.7 +10.7	15			
16	63 47.5 +00.1	S	10 19.0 +00.9	28 43.0 -00.7	S	21 47.9 +00.8	214 25.5 -36.0	N	23 34.4 +10.6	16			
17	78 47.6 +00.1	S	10 19.9 +00.9	43 42.3 -00.7	S	21 48.7 +00.7	228 49.5 -36.0	N	23 45.0 +10.4	17			
18	93 47.7 +00.2	S	10 20.8 +00.9	58 41.6 -00.7	S	21 49.4 +00.7	243 13.5 -36.1	N	23 55.4 +10.2	18			
19	108 47.9 +00.1	S	10 21.7 +00.9	73 40.9 -00.7	S	21 50.1 +00.7	257 37.4 -36.1	N	24 05.6 +10.0	19			
20	123 48.0 +00.1	S	10 22.6 +00.9	88 40.2 -00.7	S	21 50.8 +00.7	272 01.3 -36.2	N	24 15.6 +09.8	20			
21	138 48.1 +00.1	S	10 23.5 +00.9	103 39.5 -00.7	S	21 51.5 +00.8	286 25.1 -36.3	N	24 25.4 +09.7	21			
22	153 48.2 +00.1	S	10 24.4 +00.8	118 38.8 -00.7	S	21 52.3 +00.7	300 48.8 -36.3	N	24 35.1 +09.5	22			
23	168 48.3 +00.1	S	10 25.2 +00.9	133 38.1 -00.7	S	21 53.0 +00.7	315 12.5 -36.3	N	24 44.6 +09.3	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'1 16'1 16'1 16'1 16'1 16'1			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'5 16'5 16'5 16'4 16'4 16'4						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 60'7 60'6 60'5 60'3 60'2 60'1						
	SHA 156° 156° 155° 155° 155° 155°			SHA 121° 121° 120° 120° 120° 120°			SHA 315° 312° 310° 307° 305° 302°						
	Greenwich Culmination Time: 11:44			Greenwich Culmination Time: 14:05			Greenwich Culmination Time: 01:07						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	272 18.8 +01.3	N	22 21.5 -00.1	307 30.5 +02.6	N	22 25.7 +00.0	42 28.4 +02.6	S	08 32.9 +00.1	00			
01	287 20.1 +01.3	N	22 21.4 -00.1	322 33.1 +02.5	N	22 25.7 +00.0	57 31.0 +02.5	S	08 33.0 +00.0	01			
02	302 21.4 +01.2	N	22 21.3 -00.1	337 35.6 +02.6	N	22 25.7 +00.0	72 33.5 +02.6	S	08 33.0 +00.1	02			
03	317 22.6 +01.3	N	22 21.2 -00.2	352 38.2 +02.5	N	22 25.7 +00.0	87 36.1 +02.6	S	08 33.1 +00.0	03			
04	332 23.9 +01.3	N	22 21.0 -00.1	7 40.7 +02.6	N	22 25.7 +00.0	102 38.7 +02.6	S	08 33.1 +00.0	04			
05	347 25.2 +01.3	N	22 20.9 -00.1	22 43.3 +02.5	N	22 25.7 -00.1	117 41.3 +02.5	S	08 33.1 +00.1	05			
06	2 26.5 +01.2	N	22 20.8 -00.1	37 45.8 +02.6	N	22 25.6 +00.0	132 43.8 +02.6	S	08 33.2 +00.0	06			
07	17 27.7 +01.3	N	22 20.7 -00.1	52 48.4 +02.5	N	22 25.6 +00.0	147 46.4 +02.6	S	08 33.2 +00.0	07			
08	32 29.0 +01.3	N	22 20.6 -00.2	67 50.9 +02.6	N	22 25.6 +00.0	162 49.0 +02.5	S	08 33.2 +00.1	08			
09	47 30.3 +01.2	N	22 20.4 -00.1	82 53.5 +02.5	N	22 25.6 +00.0	177 51.5 +02.6	S	08 33.3 +00.0	09			
10	62 31.5 +01.3	N	22 20.3 -00.1	97 56.0 +02.6	N	22 25.6 +00.0	192 54.1 +02.6	S	08 33.3 +00.1	10			
11	77 32.8 +01.3	N	22 20.2 -00.1	112 58.6 +02.6	N	22 25.6 +00.0	207 56.7 +02.6	S	08 33.4 +00.0	11			
12	92 34.1 +01.3	N	22 20.1 -00.1	128 01.2 +02.5	N	22 25.6 +00.0	222 59.3 +02.5	S	08 33.4 +00.0	12			
13	107 35.4 +01.3	N	22 20.0 -00.2	143 03.7 +02.6	N	22 25.6 +00.0	238 01.8 +02.6	S	08 33.4 +00.1	13			
14	122 36.7 +01.2	N	22 19.8 -00.1	158 06.3 +02.5	N	22 25.6 +00.0	253 04.4 +02.6	S	08 33.5 +00.0	14			
15	137 37.9 +01.3	N	22 19.7 -00.1	173 08.8 +02.6	N	22 25.6 +00.0	268 07.0 +02.5	S	08 33.5 +00.1	15			
16	152 39.2 +01.3	N	22 19.6 -00.1	188 11.4 +02.5	N	22 25.6 +00.0	283 09.5 +02.6	S	08 33.6 +00.0	16			
17	167 40.5 +01.3	N	22 19.5 -00.1	203 13.9 +02.6	N	22 25.6 +00.0	298 12.1 +02.6	S	08 33.6 +00.0	17			
18	182 41.8 +01.3	N	22 19.4 -00.2	218 16.5 +02.6	N	22 25.6 +00.0	313 14.7 +02.5	S	08 33.6 +00.1	18			
19	197 43.1 +01.2	N	22 19.2 -00.1	233 19.1 +02.5	N	22 25.6 +00.0	328 17.2 +02.6	S	08 33.7 +00.0	19			
20	212 44.3 +01.3	N	22 19.1 -00.1	248 21.6 +02.6	N	22 25.6 +00.0	343 19.8 +02.6	S	08 33.7 +00.0	20			
21	227 45.6 +01.3	N	22 19.0 -00.1	263 24.2 +02.5	N	22 25.6 +00.0	358 22.4 +02.5	S	08 33.7 +00.1	21			
22	242 46.9 +01.3	N	22 18.9 -00.2	278 26.7 +02.6	N	22 25.6 -00.1	13 24.9 +02.6	S	08 33.8 +00.0	22			
23	257 48.2 +01.3	N	22 18.7 -00.1	293 29.3 +02.6	N	22 25.5 +00.0	28 27.5 +02.6	S	08 33.8 +00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			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 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 244° 244° 244° 244° 244° 244°			SHA 280° 280° 280° 280° 280° 280°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 05:50			Greenwich Culmination Time: 03:29			Greenwich Culmination Time: 21:06						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 48.4 +00.1	S 10 26.1 +00.9	148 37.4 -00.7	S 21 53.7 +00.7	329 36.2 -36.4	N 24 53.9 +09.2	00						
01	198 48.5 +00.1	S 10 27.0 +00.9	163 36.7 -00.7	S 21 54.4 +00.7	343 59.8 -36.5	N 25 03.1 +09.0	01						
02	213 48.6 +00.1	S 10 27.9 +00.9	178 36.0 -00.7	S 21 55.1 +00.7	358 23.3 -36.5	N 25 12.1 +08.7	02						
03	228 48.7 +00.1	S 10 28.8 +00.9	193 35.3 -00.7	S 21 55.8 +00.7	12 46.8 -36.5	N 25 20.8 +08.6	03						
04	243 48.8 +00.1	S 10 29.7 +00.9	208 34.6 -00.7	S 21 56.5 +00.8	27 10.3 -36.6	N 25 29.4 +08.5	04						
05	258 48.9 +00.1	S 10 30.6 +00.9	223 33.9 -00.7	S 21 57.3 +00.7	41 33.7 -36.6	N 25 37.9 +08.2	05						
06	273 49.0 +00.1	S 10 31.5 +00.9	238 33.2 -00.7	S 21 58.0 +00.7	55 57.1 -36.7	N 25 46.1 +08.0	06						
07	288 49.1 +00.1	S 10 32.4 +00.9	253 32.5 -00.7	S 21 58.7 +00.7	70 20.4 -36.7	N 25 54.1 +07.9	07						
08	303 49.2 +00.2	S 10 33.3 +00.9	268 31.8 -00.7	S 21 59.4 +00.7	84 43.7 -36.7	N 26 02.0 +07.7	08						
09	318 49.4 +00.1	S 10 34.2 +00.9	283 31.1 -00.7	S 22 00.1 +00.7	99 07.0 -36.8	N 26 09.7 +07.5	09						
10	333 49.5 +00.1	S 10 35.1 +00.9	298 30.4 -00.7	S 22 00.8 +00.7	113 30.2 -36.8	N 26 17.2 +07.3	10						
11	348 49.6 +00.1	S 10 36.0 +00.9	313 29.7 -00.7	S 22 01.5 +00.7	127 53.4 -36.8	N 26 24.5 +07.1	11						
12	3 49.7 +00.1	S 10 36.9 +00.8	328 29.0 -00.7	S 22 02.2 +00.7	142 16.6 -36.9	N 26 31.6 +06.9	12						
13	18 49.8 +00.1	S 10 37.7 +00.9	343 28.3 -00.8	S 22 02.9 +00.7	156 39.7 -36.9	N 26 38.5 +06.7	13						
14	33 49.9 +00.1	S 10 38.6 +00.9	358 27.5 -00.7	S 22 03.6 +00.7	171 02.8 -36.9	N 26 45.2 +06.6	14						
15	48 50.0 +00.1	S 10 39.5 +00.9	13 26.8 -00.7	S 22 04.3 +00.7	185 25.9 -36.9	N 26 51.8 +06.3	15						
16	63 50.1 +00.1	S 10 40.4 +00.9	28 26.1 -00.7	S 22 05.0 +00.7	199 49.0 -37.0	N 26 58.1 +06.2	16						
17	78 50.2 +00.1	S 10 41.3 +00.9	43 25.4 -00.7	S 22 05.7 +00.7	214 12.0 -37.0	N 27 04.3 +06.0	17						
18	93 50.3 +00.1	S 10 42.2 +00.9	58 24.7 -00.7	S 22 06.4 +00.7	228 35.0 -36.9	N 27 10.3 +05.7	18						
19	108 50.4 +00.1	S 10 43.1 +00.9	73 24.0 -00.7	S 22 07.1 +00.7	242 58.1 -37.0	N 27 16.0 +05.6	19						
20	123 50.5 +00.1	S 10 44.0 +00.9	88 23.3 -00.7	S 22 07.8 +00.7	257 21.1 -37.0	N 27 21.6 +05.4	20						
21	138 50.6 +00.1	S 10 44.9 +00.9	103 22.6 -00.7	S 22 08.5 +00.7	271 44.1 -37.1	N 27 27.0 +05.2	21						
22	153 50.7 +00.1	S 10 45.8 +00.8	118 21.9 -00.7	S 22 09.2 +00.7	286 07.0 -37.0	N 27 32.2 +05.0	22						
23	168 50.8 +00.1	S 10 46.6 +00.9	133 21.2 -00.7	S 22 09.9 +00.6	300 30.0 -37.0	N 27 37.2 +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 00'1 00'1 00'1 00'1 00'1 00'1		SD 16'3 16'3 16'2 16'2 16'2 16'1								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 59'9 59'8 59'6 59'5 59'3 59'2								
	SHA 155° 155° 154° 154° 154° 154°		SHA 120° 119° 119° 119° 119° 119°		SHA 299° 297° 294° 292° 289° 286°								
	Greenwich Culmination Time: 11:44		Greenwich Culmination Time: 14:06		Greenwich Culmination Time: 02:06								

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	272 49.5 +01.3	N 22 18.6 -00.1	308 31.9 +02.5	N 22 25.5 +00.0	43 30.1 +02.5	S 08 33.9 +00.0	00						
01	287 50.8 +01.2	N 22 18.5 -00.1	323 34.4 +02.6	N 22 25.5 +00.0	58 32.6 +02.6	S 08 33.9 +00.0	01						
02	302 52.0 +01.3	N 22 18.4 -00.1	338 37.0 +02.5	N 22 25.5 +00.0	73 35.2 +02.6	S 08 33.9 +00.1	02						
03	317 53.3 +01.3	N 22 18.3 -00.2	353 39.5 +02.6	N 22 25.5 +00.0	88 37.8 +02.6	S 08 34.0 +00.0	03						
04	332 54.6 +01.3	N 22 18.1 -00.1	8 42.1 +02.6	N 22 25.5 +00.0	103 40.4 +02.5	S 08 34.0 +00.0	04						
05	347 55.9 +01.3	N 22 18.0 -00.1	23 44.7 +02.5	N 22 25.5 +00.0	118 42.9 +02.6	S 08 34.0 +00.1	05						
06	2 57.2 +01.3	N 22 17.9 -00.1	38 47.2 +02.6	N 22 25.5 +00.0	133 45.5 +02.6	S 08 34.1 +00.0	06						
07	17 58.5 +01.3	N 22 17.8 -00.1	53 49.8 +02.6	N 22 25.5 +00.0	148 48.1 +02.5	S 08 34.1 +00.1	07						
08	32 59.8 +01.2	N 22 17.7 -00.2	68 52.4 +02.5	N 22 25.5 +00.0	163 50.6 +02.6	S 08 34.2 +00.0	08						
09	48 01.0 +01.3	N 22 17.5 -00.1	83 54.9 +02.6	N 22 25.5 +00.0	178 53.2 +02.6	S 08 34.2 +00.0	09						
10	63 02.3 +01.3	N 22 17.4 -00.1	98 57.5 +02.5	N 22 25.5 +00.0	193 55.8 +02.5	S 08 34.2 +00.1	10						
11	78 03.6 +01.3	N 22 17.3 -00.1	114 00.0 +02.6	N 22 25.5 +00.0	208 58.3 +02.6	S 08 34.3 +00.0	11						
12	93 04.9 +01.3	N 22 17.2 -00.2	129 02.6 +02.6	N 22 25.5 +00.0	224 00.9 +02.6	S 08 34.3 +00.0	12						
13	108 06.2 +01.3	N 22 17.0 -00.1	144 05.2 +02.5	N 22 25.5 +00.0	239 03.5 +02.5	S 08 34.3 +00.1	13						
14	123 07.5 +01.3	N 22 16.9 -00.1	159 07.7 +02.6	N 22 25.5 -00.1	254 06.0 +02.6	S 08 34.4 +00.0	14						
15	138 08.8 +01.3	N 22 16.8 -00.1	174 10.3 +02.6	N 22 25.4 +00.0	269 08.6 +02.6	S 08 34.4 +00.1	15						
16	153 10.1 +01.3	N 22 16.7 -00.1	189 12.9 +02.5	N 22 25.4 +00.0	284 11.2 +02.5	S 08 34.5 +00.0	16						
17	168 11.4 +01.3	N 22 16.6 -00.2	204 15.4 +02.6	N 22 25.4 +00.0	299 13.7 +02.6	S 08 34.5 +00.0	17						
18	183 12.7 +01.3	N 22 16.4 -00.1	219 18.0 +02.6	N 22 25.4 +00.0	314 16.3 +02.6	S 08 34.5 +00.1	18						
19	198 14.0 +01.3	N 22 16.3 -00.1	234 20.6 +02.5	N 22 25.4 +00.0	329 18.9 +02.5	S 08 34.6 +00.0	19						
20	213 15.3 +01.3	N 22 16.2 -00.1	249 23.1 +02.6	N 22 25.4 +00.0	344 21.4 +02.6	S 08 34.6 +00.0	20						
21	228 16.6 +01.3	N 22 16.1 -00.1	264 25.7 +02.6	N 22 25.4 +00.0	359 24.0 +02.5	S 08 34.6 +00.1	21						
22	243 17.9 +01.3	N 22 16.0 -00.2	279 28.3 +02.5	N 22 25.4 +00.0	14 26.5 +02.6	S 08 34.7 +00.0	22						
23	258 19.2 +01.3	N 22 15.8 -00.1	294 30.8 +02.6	N 22 25.4 +00.0	29 29.1 +02.6	S 08 34.7 +00.0	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 00'4 00'4 00'4 00'4 00'4 00'4		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 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0								
	SHA 244° 244° 244° 244° 244° 243°		SHA 280° 280° 280° 280° 280° 280°		SHA 015° 015° 015° 015° 015° 015°								
	Greenwich Culmination Time: 05:48		Greenwich Culmination Time: 03:25		Greenwich Culmination Time: 21:02								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 50.9 +00.1	S	10 47.5 +00.9	148 20.5 -00.8	S	22 10.5 +00.7	314 53.0 -37.0	N	27 42.1 +04.6	00			
01	198 51.0 +00.1	S	10 48.4 +00.9	163 19.7 -00.7	S	22 11.2 +00.7	329 16.0 -37.1	N	27 46.7 +04.4	01			
02	213 51.1 +00.1	S	10 49.3 +00.9	178 19.0 -00.7	S	22 11.9 +00.7	343 38.9 -37.0	N	27 51.1 +04.2	02			
03	228 51.2 +00.1	S	10 50.2 +00.9	193 18.3 -00.7	S	22 12.6 +00.7	358 01.9 -37.0	N	27 55.3 +04.1	03			
04	243 51.3 +00.1	S	10 51.1 +00.9	208 17.6 -00.7	S	22 13.3 +00.7	12 24.9 -37.0	N	27 59.4 +03.8	04			
05	258 51.4 +00.1	S	10 52.0 +00.9	223 16.9 -00.7	S	22 14.0 +00.7	26 47.9 -37.0	N	28 03.2 +03.7	05			
06	273 51.5 +00.1	S	10 52.9 +00.8	238 16.2 -00.7	S	22 14.7 +00.6	41 10.9 -37.0	N	28 06.9 +03.4	06			
07	288 51.6 +00.1	S	10 53.7 +00.9	253 15.5 -00.7	S	22 15.3 +00.7	55 33.9 -36.9	N	28 10.3 +03.3	07			
08	303 51.7 +00.1	S	10 54.6 +00.9	268 14.8 -00.8	S	22 16.0 +00.7	69 57.0 -37.0	N	28 13.6 +03.1	08			
09	318 51.8 +00.1	S	10 55.5 +00.9	283 14.0 -00.7	S	22 16.7 +00.7	84 20.0 -36.9	N	28 16.7 +02.8	09			
10	333 51.9 +00.1	S	10 56.4 +00.9	298 13.3 -00.7	S	22 17.4 +00.7	98 43.1 -36.9	N	28 19.5 +02.7	10			
11	348 52.0 +00.1	S	10 57.3 +00.9	313 12.6 -00.7	S	22 18.1 +00.6	113 06.2 -36.9	N	28 22.2 +02.5	11			
12	3 52.1 +00.1	S	10 58.2 +00.8	328 11.9 -00.7	S	22 18.7 +00.7	127 29.3 -36.9	N	28 24.7 +02.3	12			
13	18 52.2 +00.1	S	10 59.0 +00.9	343 11.2 -00.7	S	22 19.4 +00.7	141 52.4 -36.8	N	28 27.0 +02.1	13			
14	33 52.3 +00.1	S	10 59.9 +00.9	358 10.5 -00.8	S	22 20.1 +00.7	156 15.6 -36.8	N	28 29.1 +02.0	14			
15	48 52.4 +00.1	S	11 00.8 +00.9	13 09.7 -00.7	S	22 20.8 +00.6	170 38.8 -36.7	N	28 31.1 +01.7	15			
16	63 52.5 +00.1	S	11 01.7 +00.9	28 09.0 -00.7	S	22 21.4 +00.7	185 02.1 -36.8	N	28 32.8 +01.5	16			
17	78 52.6 +00.1	S	11 02.6 +00.9	43 08.3 -00.7	S	22 22.1 +00.7	199 25.3 -36.6	N	28 34.3 +01.4	17			
18	93 52.7 +00.1	S	11 03.5 +00.8	58 07.6 -00.7	S	22 22.8 +00.7	213 48.7 -36.7	N	28 35.7 +01.1	18			
19	108 52.8 +00.1	S	11 04.3 +00.9	73 06.9 -00.8	S	22 23.5 +00.6	228 12.0 -36.6	N	28 36.8 +01.0	19			
20	123 52.9 +00.1	S	11 05.2 +00.9	88 06.1 -00.7	S	22 24.1 +00.7	242 35.4 -36.5	N	28 37.8 +00.8	20			
21	138 53.0 +00.0	S	11 06.1 +00.9	103 05.4 -00.7	S	22 24.8 +00.7	256 58.9 -36.5	N	28 38.6 +00.6	21			
22	153 53.0 +00.1	S	11 07.0 +00.9	118 04.7 -00.7	S	22 25.5 +00.6	271 22.4 -36.5	N	28 39.2 +00.4	22			
23	168 53.1 +00.1	S	11 07.9 +00.9	133 04.0 -00.7	S	22 26.1 +00.7	285 45.9 -36.4	N	28 39.6 +00.2	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16°1 16°1 16°1 16°1 16°1 16°1			SD 00°1 00°1 00°1 00°1 00°1 00°1			SD 16°1 16°0 16°0 15°9 15°9 15°9						
	HP 00°1 00°1 00°1 00°1 00°1 00°1			HP 00°1 00°1 00°1 00°1 00°1 00°1			HP 59°0 58°9 58°7 58°5 58°4 58°2						
	SHA 154° 154° 154° 153° 153° 153°			SHA 118° 118° 118° 118° 117° 117°			SHA 284° 281° 278° 276° 273° 271°						
	Greenwich Culmination Time: 11:44			Greenwich Culmination Time: 14:07			Greenwich Culmination Time: 03:08						

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	273 20.5 +01.3	N	22 15.7 -00.1	309 33.4 +02.6	N	22 25.4 +00.0	44 31.7 +02.5	S	08 34.7 +00.1	00			
01	288 21.8 +01.3	N	22 15.6 -00.1	324 36.0 +02.6	N	22 25.4 +00.0	59 34.2 +02.6	S	08 34.8 +00.0	01			
02	303 23.1 +01.3	N	22 15.5 -00.2	339 38.6 +02.5	N	22 25.4 +00.0	74 36.8 +02.6	S	08 34.8 +00.0	02			
03	318 24.4 +01.3	N	22 15.3 -00.1	354 41.1 +02.6	N	22 25.4 +00.0	89 39.4 +02.5	S	08 34.8 +00.1	03			
04	333 25.7 +01.3	N	22 15.2 -00.1	9 43.7 +02.6	N	22 25.4 +00.0	104 41.9 +02.6	S	08 34.9 +00.0	04			
05	348 27.0 +01.3	N	22 15.1 -00.1	24 46.3 +02.5	N	22 25.4 -00.1	119 44.5 +02.6	S	08 34.9 +00.1	05			
06	3 28.3 +01.3	N	22 15.0 -00.1	39 48.8 +02.6	N	22 25.3 +00.0	134 47.1 +02.5	S	08 35.0 +00.0	06			
07	18 29.6 +01.3	N	22 14.9 -00.2	54 51.4 +02.6	N	22 25.3 +00.0	149 49.6 +02.6	S	08 35.0 +00.0	07			
08	33 30.9 +01.3	N	22 14.7 -00.1	69 54.0 +02.6	N	22 25.3 +00.0	164 52.2 +02.6	S	08 35.0 +00.1	08			
09	48 32.2 +01.3	N	22 14.6 -00.1	84 56.6 +02.5	N	22 25.3 +00.0	179 54.8 +02.5	S	08 35.1 +00.0	09			
10	63 33.5 +01.3	N	22 14.5 -00.1	99 59.1 +02.6	N	22 25.3 +00.0	194 57.3 +02.6	S	08 35.1 +00.0	10			
11	78 34.8 +01.3	N	22 14.4 -00.1	115 01.7 +02.6	N	22 25.3 +00.0	209 59.9 +02.5	S	08 35.1 +00.1	11			
12	93 36.1 +01.3	N	22 14.3 -00.2	130 04.3 +02.6	N	22 25.3 +00.0	225 02.4 +02.6	S	08 35.2 +00.0	12			
13	108 37.4 +01.3	N	22 14.1 -00.1	145 06.9 +02.5	N	22 25.3 +00.0	240 05.0 +02.6	S	08 35.2 +00.0	13			
14	123 38.7 +01.3	N	22 14.0 -00.1	160 09.4 +02.6	N	22 25.3 +00.0	255 07.6 +02.5	S	08 35.2 +00.1	14			
15	138 40.0 +01.3	N	22 13.9 -00.1	175 12.0 +02.6	N	22 25.3 +00.0	270 10.1 +02.6	S	08 35.3 +00.0	15			
16	153 41.3 +01.3	N	22 13.8 -00.1	190 14.6 +02.6	N	22 25.3 +00.0	285 12.7 +02.6	S	08 35.3 +00.0	16			
17	168 42.6 +01.4	N	22 13.7 -00.2	205 17.2 +02.5	N	22 25.3 +00.0	300 15.3 +02.5	S	08 35.3 +00.1	17			
18	183 44.0 +01.3	N	22 13.5 -00.1	220 19.7 +02.6	N	22 25.3 +00.0	315 17.8 +02.6	S	08 35.4 +00.0	18			
19	198 45.3 +01.3	N	22 13.4 -00.1	235 22.3 +02.6	N	22 25.3 +00.0	330 20.4 +02.5	S	08 35.4 +00.1	19			
20	213 46.6 +01.3	N	22 13.3 -00.1	250 24.9 +02.6	N	22 25.3 -00.1	345 22.9 +02.6	S	08 35.5 +00.0	20			
21	228 47.9 +01.3	N	22 13.2 -00.2	265 27.5 +02.5	N	22 25.2 +00.0	0 25.5 +02.6	S	08 35.5 +00.0	21			
22	243 49.2 +01.3	N	22 13.0 -00.1	280 30.0 +02.6	N	22 25.2 +00.0	15 28.1 +02.5	S	08 35.5 +00.1	22			
23	258 50.5 +01.3	N	22 12.9 -00.1	295 32.6 +02.6	N	22 25.2 +00.0	30 30.6 +02.6	S	08 35.6 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00°1 00°1 00°1 00°1 00°1 00°1			SD 00°4 00°4 00°4 00°4 00°4 00°4			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°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 243° 243° 243° 243° 243° 243°			SHA 280° 280° 280° 280° 280° 280°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 05:46			Greenwich Culmination Time: 03:21			Greenwich Culmination Time: 20:58						

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

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183	53.2 +00.1	S 11 08.8	+00.8	148	03.3 -00.8	S 22 26.8	+00.7	300	09.5 -36.3	N 28 39.8	+00.1	00
01	198	53.3 +00.1	S 11 09.6	+00.9	163	02.5 -00.7	S 22 27.5	+00.6	314	33.2 -36.3	N 28 39.9	-00.2	01
02	213	53.4 +00.1	S 11 10.5	+00.9	178	01.8 -00.7	S 22 28.1	+00.7	328	56.9 -36.2	N 28 39.7	-00.3	02
03	228	53.5 +00.1	S 11 11.4	+00.9	193	01.1 -00.7	S 22 28.8	+00.7	343	20.7 -36.2	N 28 39.4	-00.5	03
04	243	53.6 +00.1	S 11 12.3	+00.9	208	00.4 -00.8	S 22 29.5	+00.6	357	44.5 -36.1	N 28 38.9	-00.7	04
05	258	53.7 +00.1	S 11 13.2	+00.8	222	59.6 -00.7	S 22 30.1	+00.7	12	08.4 -36.0	N 28 38.2	-00.9	05
06	273	53.8 +00.1	S 11 14.0	+00.9	237	58.9 -00.7	S 22 30.8	+00.6	26	32.4 -36.0	N 28 37.3	-01.0	06
07	288	53.9 +00.1	S 11 14.9	+00.9	252	58.2 -00.7	S 22 31.4	+00.7	40	56.4 -35.9	N 28 36.3	-01.2	07
08	303	54.0 +00.1	S 11 15.8	+00.9	267	57.5 -00.8	S 22 32.1	+00.6	55	20.5 -35.8	N 28 35.1	-01.4	08
09	318	54.1 +00.1	S 11 16.7	+00.9	282	56.7 -00.7	S 22 32.7	+00.7	69	44.7 -35.8	N 28 33.7	-01.6	09
10	333	54.2 +00.0	S 11 17.6	+00.8	297	56.0 -00.7	S 22 33.4	+00.7	84	08.9 -35.7	N 28 32.1	-01.8	10
11	348	54.2 +00.1	S 11 18.4	+00.9	312	55.3 -00.7	S 22 34.1	+00.6	98	33.2 -35.6	N 28 30.3	-01.9	11
12	3	54.3 +00.1	S 11 19.3	+00.9	327	54.6 -00.8	S 22 34.7	+00.7	112	57.6 -35.5	N 28 28.4	-02.1	12
13	18	54.4 +00.1	S 11 20.2	+00.9	342	53.8 -00.7	S 22 35.4	+00.6	127	22.1 -35.4	N 28 26.3	-02.3	13
14	33	54.5 +00.1	S 11 21.1	+00.8	357	53.1 -00.7	S 22 36.0	+00.7	141	46.7 -35.4	N 28 24.0	-02.5	14
15	48	54.6 +00.1	S 11 21.9	+00.9	12	52.4 -00.8	S 22 36.7	+00.6	156	11.3 -35.2	N 28 21.5	-02.6	15
16	63	54.7 +00.1	S 11 22.8	+00.9	27	51.6 -00.7	S 22 37.3	+00.7	170	36.1 -35.2	N 28 18.9	-02.8	16
17	78	54.8 +00.1	S 11 23.7	+00.9	42	50.9 -00.7	S 22 38.0	+00.6	185	00.9 -35.1	N 28 16.1	-02.9	17
18	93	54.9 +00.1	S 11 24.6	+00.8	57	50.2 -00.8	S 22 38.6	+00.6	199	25.8 -35.1	N 28 13.2	-03.2	18
19	108	55.0 +00.1	S 11 25.4	+00.9	72	49.4 -00.7	S 22 39.2	+00.7	213	50.7 -34.9	N 28 10.0	-03.2	19
20	123	55.1 +00.0	S 11 26.3	+00.9	87	48.7 -00.7	S 22 39.9	+00.6	228	15.8 -34.8	N 28 06.8	-03.5	20
21	138	55.1 +00.1	S 11 27.2	+00.9	102	48.0 -00.7	S 22 40.5	+00.7	242	41.0 -34.8	N 28 03.3	-03.6	21
22	153	55.2 +00.1	S 11 28.1	+00.8	117	47.3 -00.8	S 22 41.2	+00.6	257	06.2 -34.6	N 27 59.7	-03.8	22
23	168	55.3 +00.1	S 11 28.9	+00.9	132	46.5 -00.7	S 22 41.8	+00.7	271	31.6 -34.5	N 27 55.9	-03.9	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 15'8 15'8 15'7 15'7 15'6 15'6				
	HP 00'1 00'1 00'1 00'1 00'1 00'1								HP 58'1 57'9 57'7 57'6 57'4 57'3				
	SHA 153° 153° 153° 152° 152° 152°								SHA 268° 265° 263° 260° 258° 255°				
	Greenwich Culmination Time: 11:44								Greenwich Culmination Time: 14:08				
UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	273	51.8 +01.3	N 22 12.8	-00.1	310	35.2 +02.6	N 22 25.2	+00.0	45	33.2 +02.6	S 08 35.6	+00.0	00
01	288	53.1 +01.4	N 22 12.7	-00.1	325	37.8 +02.5	N 22 25.2	+00.0	60	35.8 +02.5	S 08 35.6	+00.1	01
02	303	54.5 +01.3	N 22 12.6	-00.2	340	40.3 +02.6	N 22 25.2	+00.0	75	38.3 +02.6	S 08 35.7	+00.0	02
03	318	55.8 +01.3	N 22 12.4	-00.1	355	42.9 +02.6	N 22 25.2	+00.0	90	40.9 +02.5	S 08 35.7	+00.0	03
04	333	57.1 +01.3	N 22 12.3	-00.1	10	45.5 +02.6	N 22 25.2	+00.0	105	43.4 +02.6	S 08 35.7	+00.1	04
05	348	58.4 +01.3	N 22 12.2	-00.1	25	48.1 +02.6	N 22 25.2	+00.0	120	46.0 +02.6	S 08 35.8	+00.0	05
06	3	59.7 +01.3	N 22 12.1	-00.1	40	50.7 +02.5	N 22 25.2	+00.0	135	48.6 +02.5	S 08 35.8	+00.0	06
07	19	01.0 +01.4	N 22 12.0	-00.2	55	53.2 +02.6	N 22 25.2	+00.0	150	51.1 +02.6	S 08 35.8	+00.1	07
08	34	02.4 +01.3	N 22 11.8	-00.1	70	55.8 +02.6	N 22 25.2	+00.0	165	53.7 +02.5	S 08 35.9	+00.0	08
09	49	03.7 +01.3	N 22 11.7	-00.1	85	58.4 +02.6	N 22 25.2	+00.0	180	56.2 +02.6	S 08 35.9	+00.0	09
10	64	05.0 +01.3	N 22 11.6	-00.1	101	01.0 +02.6	N 22 25.2	-00.1	195	58.8 +02.6	S 08 35.9	+00.1	10
11	79	06.3 +01.3	N 22 11.5	-00.1	116	03.6 +02.6	N 22 25.1	+00.0	211	01.4 +02.5	S 08 36.0	+00.0	11
12	94	07.6 +01.4	N 22 11.4	-00.2	131	06.2 +02.5	N 22 25.1	+00.0	226	03.9 +02.6	S 08 36.0	+00.0	12
13	109	09.0 +01.3	N 22 11.2	-00.1	146	08.7 +02.6	N 22 25.1	+00.0	241	06.5 +02.5	S 08 36.0	+00.1	13
14	124	10.3 +01.3	N 22 11.1	-00.1	161	11.3 +02.6	N 22 25.1	+00.0	256	09.0 +02.6	S 08 36.1	+00.0	14
15	139	11.6 +01.3	N 22 11.0	-00.1	176	13.9 +02.6	N 22 25.1	+00.0	271	11.6 +02.6	S 08 36.1	+00.0	15
16	154	12.9 +01.4	N 22 10.9	-00.2	191	16.5 +02.6	N 22 25.1	+00.0	286	14.2 +02.5	S 08 36.1	+00.1	16
17	169	14.3 +01.3	N 22 10.7	-00.1	206	19.1 +02.6	N 22 25.1	+00.0	301	16.7 +02.6	S 08 36.2	+00.0	17
18	184	15.6 +01.3	N 22 10.6	-00.1	221	21.7 +02.5	N 22 25.1	+00.0	316	19.3 +02.5	S 08 36.2	+00.0	18
19	199	16.9 +01.3	N 22 10.5	-00.1	236	24.2 +02.6	N 22 25.1	+00.0	331	21.8 +02.6	S 08 36.2	+00.1	19
20	214	18.2 +01.4	N 22 10.4	-00.1	251	26.8 +02.6	N 22 25.1	+00.0	346	24.4 +02.6	S 08 36.3	+00.0	20
21	229	19.6 +01.3	N 22 10.3	-00.2	266	29.4 +02.6	N 22 25.1	+00.0	1	27.0 +02.5	S 08 36.3	+00.0	21
22	244	20.9 +01.3	N 22 10.1	-00.1	281	32.0 +02.6	N 22 25.1	+00.0	16	29.5 +02.6	S 08 36.3	+00.1	22
23	259	22.2 +01.4	N 22 10.0	-00.1	296	34.6 +02.6	N 22 25.1	+00.0	31	32.1 +02.5	S 08 36.4	+00.0	23
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 00'4 00'4 00'4 00'4 00'4 00'4				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 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 243° 243° 243° 243° 243° 243°				SHA 280° 280° 280° 280° 280° 280°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 05:44				Greenwich Culmination Time: 03:17				Greenwich Culmination Time: 20:54				

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	55.4 +00.1	S 11 29.8	+00.9	147	45.8 -00.7	S 22 42.5	+00.6	285	57.1 -34.5	N 27 52.0	-04.1	00
01	198	55.5 +00.1	S 11 30.7	+00.9	162	45.1 -00.8	S 22 43.1	+00.6	300	22.6 -34.3	N 27 47.9	-04.3	01
02	213	55.6 +00.1	S 11 31.6	+00.8	177	44.3 -00.7	S 22 43.7	+00.7	314	48.3 -34.3	N 27 43.6	-04.4	02
03	228	55.7 +00.0	S 11 32.4	+00.9	192	43.6 -00.7	S 22 44.4	+00.6	329	14.0 -34.2	N 27 39.2	-04.5	03
04	243	55.7 +00.1	S 11 33.3	+00.9	207	42.9 -00.8	S 22 45.0	+00.6	343	39.8 -34.0	N 27 34.7	-04.8	04
05	258	55.8 +00.1	S 11 34.2	+00.9	222	42.1 -00.7	S 22 45.6	+00.7	358	05.8 -34.0	N 27 29.9	-04.8	05
06	273	55.9 +00.1	S 11 35.1	+00.8	237	41.4 -00.8	S 22 46.3	+00.6	12	31.8 -33.8	N 27 25.1	-05.1	06
07	288	56.0 +00.1	S 11 35.9	+00.9	252	40.6 -00.7	S 22 46.9	+00.6	26	58.0 -33.7	N 27 20.0	-05.1	07
08	303	56.1 +00.1	S 11 36.8	+00.9	267	39.9 -00.7	S 22 47.5	+00.7	41	24.3 -33.7	N 27 14.9	-05.3	08
09	318	56.2 +00.0	S 11 37.7	+00.8	282	39.2 -00.8	S 22 48.2	+00.6	55	50.6 -33.5	N 27 09.6	-05.5	09
10	333	56.2 +00.1	S 11 38.5	+00.9	297	38.4 -00.7	S 22 48.8	+00.6	70	17.1 -33.4	N 27 04.1	-05.6	10
11	348	56.3 +00.1	S 11 39.4	+00.9	312	37.7 -00.7	S 22 49.4	+00.7	84	43.7 -33.4	N 26 58.5	-05.8	11
12	3	56.4 +00.1	S 11 40.3	+00.9	327	37.0 -00.8	S 22 50.1	+00.6	99	10.3 -33.2	N 26 52.7	-05.9	12
13	18	56.5 +00.1	S 11 41.2	+00.8	342	36.2 -00.7	S 22 50.7	+00.6	113	37.1 -33.1	N 26 46.8	-06.0	13
14	33	56.6 +00.1	S 11 42.0	+00.9	357	35.5 -00.8	S 22 51.3	+00.6	128	04.0 -33.0	N 26 40.8	-06.2	14
15	48	56.7 +00.0	S 11 42.9	+00.9	12	34.7 -00.7	S 22 51.9	+00.7	142	31.0 -32.8	N 26 34.6	-06.3	15
16	63	56.7 +00.1	S 11 43.8	+00.8	27	34.0 -00.7	S 22 52.6	+00.6	156	58.2 -32.8	N 26 28.3	-06.4	16
17	78	56.8 +00.1	S 11 44.6	+00.9	42	33.3 -00.8	S 22 53.2	+00.6	171	25.4 -32.7	N 26 21.9	-06.6	17
18	93	56.9 +00.1	S 11 45.5	+00.9	57	32.5 -00.7	S 22 53.8	+00.6	185	52.7 -32.5	N 26 15.3	-06.7	18
19	108	57.0 +00.1	S 11 46.4	+00.8	72	31.8 -00.8	S 22 54.4	+00.6	200	20.2 -32.4	N 26 08.6	-06.9	19
20	123	57.1 +00.0	S 11 47.2	+00.9	87	31.0 -00.7	S 22 55.0	+00.7	214	47.8 -32.4	N 26 01.7	-06.9	20
21	138	57.1 +00.1	S 11 48.1	+00.9	102	30.3 -00.7	S 22 55.7	+00.6	229	15.4 -32.2	N 25 54.8	-07.2	21
22	153	57.2 +00.1	S 11 49.0	+00.8	117	29.6 -00.8	S 22 56.3	+00.6	243	43.2 -32.1	N 25 47.6	-07.2	22
23	168	57.3 +00.1	S 11 49.8	+00.9	132	28.8 -00.7	S 22 56.9	+00.6	258	11.1 -32.0	N 25 40.4	-07.4	23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 16'1 16'1 16'1 16'1 16'1 16'1				SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 15'6 15'5 15'5 15'4 15'4 15'4				
	HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 57'1 57'0 56'8 56'7 56'5 56'4				
	SHA 152° 152° 152° 151° 151° 151°				SHA 116° 116° 115° 115° 115° 115°				SHA 253° 250° 248° 246° 243° 241°				
	Greenwich Culmination Time: 11:44				Greenwich Culmination Time: 14:09				Greenwich Culmination Time: 05:07				

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	274	23.6 +01.3	N 22 09.9	-00.1	311	37.2 +02.6	N 22 25.1	-00.1	46	34.6 +02.6	S 08 36.4	+00.0	00
01	289	24.9 +01.3	N 22 09.8	-00.1	326	39.8 +02.6	N 22 25.0	+00.0	61	37.2 +02.5	S 08 36.4	+00.1	01
02	304	26.2 +01.4	N 22 09.7	-00.2	341	42.4 +02.5	N 22 25.0	+00.0	76	39.7 +02.6	S 08 36.5	+00.0	02
03	319	27.6 +01.3	N 22 09.5	-00.1	356	44.9 +02.6	N 22 25.0	+00.0	91	42.3 +02.6	S 08 36.5	+00.0	03
04	334	28.9 +01.3	N 22 09.4	-00.1	11	47.5 +02.6	N 22 25.0	+00.0	106	44.9 +02.5	S 08 36.5	+00.1	04
05	349	30.2 +01.4	N 22 09.3	-00.1	26	50.1 +02.6	N 22 25.0	+00.0	121	47.4 +02.6	S 08 36.6	+00.0	05
06	4	31.6 +01.3	N 22 09.2	-00.1	41	52.7 +02.6	N 22 25.0	+00.0	136	50.0 +02.5	S 08 36.6	+00.0	06
07	19	32.9 +01.3	N 22 09.1	-00.2	56	55.3 +02.6	N 22 25.0	+00.0	151	52.5 +02.6	S 08 36.6	+00.1	07
08	34	34.2 +01.4	N 22 08.9	-00.1	71	57.9 +02.6	N 22 25.0	+00.0	166	55.1 +02.5	S 08 36.7	+00.0	08
09	49	35.6 +01.3	N 22 08.8	-00.1	87	00.5 +02.6	N 22 25.0	+00.0	181	57.6 +02.6	S 08 36.7	+00.0	09
10	64	36.9 +01.3	N 22 08.7	-00.1	102	03.1 +02.6	N 22 25.0	+00.0	197	00.2 +02.6	S 08 36.7	+00.1	10
11	79	38.2 +01.4	N 22 08.6	-00.1	117	05.7 +02.5	N 22 25.0	+00.0	212	02.8 +02.5	S 08 36.8	+00.0	11
12	94	39.6 +01.3	N 22 08.5	-00.2	132	08.2 +02.6	N 22 25.0	+00.0	227	05.3 +02.6	S 08 36.8	+00.0	12
13	109	40.9 +01.4	N 22 08.3	-00.1	147	10.8 +02.6	N 22 25.0	-00.1	242	07.9 +02.5	S 08 36.8	+00.1	13
14	124	42.3 +01.3	N 22 08.2	-00.1	162	13.4 +02.6	N 22 24.9	+00.0	257	10.4 +02.6	S 08 36.9	+00.0	14
15	139	43.6 +01.3	N 22 08.1	-00.1	177	16.0 +02.6	N 22 24.9	+00.0	272	13.0 +02.5	S 08 36.9	+00.0	15
16	154	44.9 +01.4	N 22 08.0	-00.2	192	18.6 +02.6	N 22 24.9	+00.0	287	15.5 +02.6	S 08 36.9	+00.1	16
17	169	46.3 +01.3	N 22 07.8	-00.1	207	21.2 +02.6	N 22 24.9	+00.0	302	18.1 +02.6	S 08 37.0	+00.0	17
18	184	47.6 +01.4	N 22 07.7	-00.1	222	23.8 +02.6	N 22 24.9	+00.0	317	20.7 +02.5	S 08 37.0	+00.0	18
19	199	49.0 +01.3	N 22 07.6	-00.1	237	26.4 +02.6	N 22 24.9	+00.0	332	23.2 +02.6	S 08 37.0	+00.1	19
20	214	50.3 +01.3	N 22 07.5	-00.1	252	29.0 +02.6	N 22 24.9	+00.0	347	25.8 +02.5	S 08 37.1	+00.0	20
21	229	51.6 +01.4	N 22 07.4	-00.2	267	31.6 +02.6	N 22 24.9	+00.0	2	28.3 +02.6	S 08 37.1	+00.0	21
22	244	53.0 +01.3	N 22 07.2	-00.1	282	34.2 +02.6	N 22 24.9	+00.0	17	30.9 +02.5	S 08 37.1	+00.1	22
23	259	54.3 +01.4	N 22 07.1	-00.1	297	36.8 +02.6	N 22 24.9	+00.0	32	33.4 +02.6	S 08 37.2	+00.0	23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 00'4 00'4 00'4 00'4 00'4 00'4				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 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 242° 242° 242° 242° 242° 242°				SHA 280° 280° 280° 280° 280° 280°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 05:41				Greenwich Culmination Time: 03:12				Greenwich Culmination Time: 20:50				

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183	57.4 +00.1	S 11 50.7	+00.9	147	28.1 -00.8	S 22 57.5	+00.6	272	39.1 -31.8	N 25 33.0	-07.4	00
01	198	57.5 +00.0	S 11 51.6	+00.8	162	27.3 -00.7	S 22 58.1	+00.6	287	07.3 -31.8	N 25 25.6	-07.6	01
02	213	57.5 +00.1	S 11 52.4	+00.9	177	26.6 -00.8	S 22 58.7	+00.6	301	35.5 -31.6	N 25 18.0	-07.8	02
03	228	57.6 +00.1	S 11 53.3	+00.9	192	25.8 -00.7	S 22 59.3	+00.6	316	03.9 -31.6	N 25 10.2	-07.8	03
04	243	57.7 +00.1	S 11 54.2	+00.8	207	25.1 -00.7	S 22 59.9	+00.7	330	32.3 -31.4	N 25 02.4	-08.0	04
05	258	57.8 +00.1	S 11 55.0	+00.9	222	24.4 -00.8	S 23 00.6	+00.6	345	00.9 -31.3	N 24 54.4	-08.1	05
06	273	57.9 +00.0	S 11 55.9	+00.9	237	23.6 -00.7	S 23 01.2	+00.6	359	29.6 -31.2	N 24 46.3	-08.2	06
07	288	57.9 +00.1	S 11 56.8	+00.8	252	22.9 -00.8	S 23 01.8	+00.6	13	58.4 -31.0	N 24 38.1	-08.3	07
08	303	58.0 +00.1	S 11 57.6	+00.9	267	22.1 -00.7	S 23 02.4	+00.6	28	27.4 -31.0	N 24 29.8	-08.5	08
09	318	58.1 +00.1	S 11 58.5	+00.9	282	21.4 -00.8	S 23 03.0	+00.6	42	56.4 -30.9	N 24 21.3	-08.5	09
10	333	58.2 +00.0	S 11 59.4	+00.8	297	20.6 -00.7	S 23 03.6	+00.6	57	25.5 -30.7	N 24 12.8	-08.7	10
11	348	58.2 +00.1	S 12 00.2	+00.9	312	19.9 -00.8	S 23 04.2	+00.6	71	54.8 -30.6	N 24 04.1	-08.7	11
12	3	58.3 +00.1	S 12 01.1	+00.9	327	19.1 -00.7	S 23 04.8	+00.6	86	24.2 -30.5	N 23 55.4	-08.9	12
13	18	58.4 +00.1	S 12 02.0	+00.8	342	18.4 -00.8	S 23 05.4	+00.6	100	53.7 -30.4	N 23 46.5	-09.0	13
14	33	58.5 +00.0	S 12 02.8	+00.9	357	17.6 -00.7	S 23 06.0	+00.6	115	23.3 -30.3	N 23 37.5	-09.1	14
15	48	58.5 +00.1	S 12 03.7	+00.8	12	16.9 -00.8	S 23 06.6	+00.6	129	53.0 -30.2	N 23 28.4	-09.1	15
16	63	58.6 +00.1	S 12 04.5	+00.9	27	16.1 -00.7	S 23 07.2	+00.6	144	22.8 -30.1	N 23 19.3	-09.3	16
17	78	58.7 +00.1	S 12 05.4	+00.9	42	15.4 -00.8	S 23 07.8	+00.6	158	52.7 -30.0	N 23 10.0	-09.4	17
18	93	58.8 +00.0	S 12 06.3	+00.8	57	14.6 -00.7	S 23 08.4	+00.6	173	22.7 -29.8	N 23 00.6	-09.5	18
19	108	58.8 +00.1	S 12 07.1	+00.9	72	13.9 -00.8	S 23 09.0	+00.6	187	52.9 -29.7	N 22 51.1	-09.6	19
20	123	58.9 +00.1	S 12 08.0	+00.9	87	13.1 -00.7	S 23 09.6	+00.6	202	23.2 -29.7	N 22 41.5	-09.7	20
21	138	59.0 +00.0	S 12 08.9	+00.8	102	12.4 -00.8	S 23 10.2	+00.5	216	53.5 -29.5	N 22 31.8	-09.8	21
22	153	59.0 +00.1	S 12 09.7	+00.9	117	11.6 -00.7	S 23 10.7	+00.6	231	24.0 -29.4	N 22 22.0	-09.9	22
23	168	59.1 +00.1	S 12 10.6	+00.8	132	10.9 -00.8	S 23 11.3	+00.6	245	54.6 -29.3	N 22 12.1	-09.9	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 15'3 15'3 15'3 15'2 15'2 15'2				
	HP 00'1 00'1 00'1 00'1 00'1 00'1								HP 56'2 56'1 56'0 55'9 55'7 55'6				
	SHA 151° 151° 151° 151° 150° 150°								SHA 239° 236° 234° 232° 230° 228°				
	Greenwich Culmination Time: 11:44								Greenwich Culmination Time: 14:10				
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	274	55.7 +01.3	N 22 07.0	-00.1	312	39.4 +02.6	N 22 24.9	+00.0	47	36.0 +02.5	S 08 37.2	+00.0	00
01	289	57.0 +01.4	N 22 06.9	-00.1	327	42.0 +02.6	N 22 24.9	-00.1	62	38.5 +02.6	S 08 37.2	+00.0	01
02	304	58.4 +01.3	N 22 06.8	-00.2	342	44.6 +02.6	N 22 24.8	+00.0	77	41.1 +02.5	S 08 37.2	+00.1	02
03	319	59.7 +01.4	N 22 06.6	-00.1	357	47.2 +02.6	N 22 24.8	+00.0	92	43.6 +02.6	S 08 37.3	+00.0	03
04	335	01.1 +01.3	N 22 06.5	-00.1	12	49.8 +02.6	N 22 24.8	+00.0	107	46.2 +02.6	S 08 37.3	+00.0	04
05	350	02.4 +01.4	N 22 06.4	-00.1	27	52.4 +02.6	N 22 24.8	+00.0	122	48.8 +02.5	S 08 37.3	+00.1	05
06	5	03.8 +01.3	N 22 06.3	-00.1	42	55.0 +02.6	N 22 24.8	+00.0	137	51.3 +02.6	S 08 37.4	+00.0	06
07	20	05.1 +01.4	N 22 06.2	-00.2	57	57.6 +02.6	N 22 24.8	+00.0	152	53.9 +02.5	S 08 37.4	+00.0	07
08	35	06.5 +01.3	N 22 06.0	-00.1	73	00.2 +02.6	N 22 24.8	+00.0	167	56.4 +02.6	S 08 37.4	+00.1	08
09	50	07.8 +01.4	N 22 05.9	-00.1	88	02.8 +02.6	N 22 24.8	+00.0	182	59.0 +02.5	S 08 37.5	+00.0	09
10	65	09.2 +01.3	N 22 05.8	-00.1	103	05.4 +02.6	N 22 24.8	+00.0	198	01.5 +02.6	S 08 37.5	+00.0	10
11	80	10.5 +01.4	N 22 05.7	-00.1	118	08.0 +02.6	N 22 24.8	+00.0	213	04.1 +02.5	S 08 37.5	+00.1	11
12	95	11.9 +01.3	N 22 05.6	-00.2	133	10.6 +02.6	N 22 24.8	+00.0	228	06.6 +02.6	S 08 37.6	+00.0	12
13	110	13.2 +01.4	N 22 05.4	-00.1	148	13.2 +02.6	N 22 24.8	+00.0	243	09.2 +02.5	S 08 37.6	+00.0	13
14	125	14.6 +01.3	N 22 05.3	-00.1	163	15.8 +02.6	N 22 24.8	-00.1	258	11.7 +02.6	S 08 37.6	+00.0	14
15	140	15.9 +01.4	N 22 05.2	-00.1	178	18.4 +02.6	N 22 24.7	+00.0	273	14.3 +02.5	S 08 37.6	+00.1	15
16	155	17.3 +01.4	N 22 05.1	-00.1	193	21.0 +02.6	N 22 24.7	+00.0	288	16.8 +02.6	S 08 37.7	+00.0	16
17	170	18.7 +01.3	N 22 05.0	-00.2	208	23.6 +02.6	N 22 24.7	+00.0	303	19.4 +02.5	S 08 37.7	+00.0	17
18	185	20.0 +01.4	N 22 04.8	-00.1	223	26.2 +02.6	N 22 24.7	+00.0	318	21.9 +02.6	S 08 37.7	+00.1	18
19	200	21.4 +01.3	N 22 04.7	-00.1	238	28.8 +02.6	N 22 24.7	+00.0	333	24.5 +02.5	S 08 37.8	+00.0	19
20	215	22.7 +01.4	N 22 04.6	-00.1	253	31.4 +02.6	N 22 24.7	+00.0	348	27.0 +02.6	S 08 37.8	+00.0	20
21	230	24.1 +01.4	N 22 04.5	-00.1	268	34.0 +02.6	N 22 24.7	+00.0	3	29.6 +02.6	S 08 37.8	+00.1	21
22	245	25.5 +01.3	N 22 04.4	-00.2	283	36.6 +02.6	N 22 24.7	+00.0	18	32.2 +02.5	S 08 37.9	+00.0	22
23	260	26.8 +01.4	N 22 04.2	-00.1	298	39.2 +02.6	N 22 24.7	+00.0	33	34.7 +02.6	S 08 37.9	+00.0	23
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 00'4 00'4 00'4 00'4 00'4 00'4				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 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 242° 242° 242° 242° 242° 242°				SHA 280° 280° 280° 280° 280° 280°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 05:39				Greenwich Culmination Time: 03:08				Greenwich Culmination Time: 20:46				



UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183	59.2 +00.1	S 12 11.4	+00.9	147	10.1 -00.7	S 23 11.9	+00.6	260	25.3 -29.2	N 22 02.2	-10.1	00
01	198	59.3 +00.0	S 12 12.3	+00.9	162	09.4 -00.8	S 23 12.5	+00.6	274	56.1 -29.1	N 21 52.1	-10.1	01
02	213	59.3 +00.1	S 12 13.2	+00.8	177	08.6 -00.7	S 23 13.1	+00.6	289	27.0 -29.0	N 21 42.0	-10.3	02
03	228	59.4 +00.1	S 12 14.0	+00.9	192	07.9 -00.8	S 23 13.7	+00.6	303	58.0 -28.9	N 21 31.7	-10.3	03
04	243	59.5 +00.0	S 12 14.9	+00.8	207	07.1 -00.8	S 23 14.3	+00.6	318	29.1 -28.8	N 21 21.4	-10.4	04
05	258	59.5 +00.1	S 12 15.7	+00.9	222	06.3 -00.7	S 23 14.9	+00.5	333	00.3 -28.7	N 21 11.0	-10.5	05
06	273	59.6 +00.1	S 12 16.6	+00.8	237	05.6 -00.8	S 23 15.4	+00.6	347	31.6 -28.5	N 21 00.5	-10.6	06
07	288	59.7 +00.0	S 12 17.4	+00.9	252	04.8 -00.7	S 23 16.0	+00.6	2	03.1 -28.5	N 20 49.9	-10.7	07
08	303	59.7 +00.1	S 12 18.3	+00.9	267	04.1 -00.8	S 23 16.6	+00.6	16	34.6 -28.4	N 20 39.2	-10.7	08
09	318	59.8 +00.1	S 12 19.2	+00.8	282	03.3 -00.7	S 23 17.2	+00.6	31	06.2 -28.3	N 20 28.5	-10.9	09
10	333	59.9 +00.1	S 12 20.0	+00.9	297	02.6 -00.8	S 23 17.8	+00.5	45	37.9 -28.1	N 20 17.6	-10.9	10
11	348	60.0 +00.0	S 12 20.9	+00.8	312	01.8 -00.8	S 23 18.3	+00.6	60	09.8 -28.1	N 20 06.7	-11.0	11
12	4	00.0 +00.1	S 12 21.7	+00.9	327	01.0 -00.7	S 23 18.9	+00.6	74	41.7 -28.0	N 19 55.7	-11.0	12
13	19	00.1 +00.1	S 12 22.6	+00.8	342	00.3 -00.8	S 23 19.5	+00.5	89	13.7 -27.9	N 19 44.7	-11.2	13
14	34	00.2 +00.0	S 12 23.4	+00.9	356	59.5 -00.7	S 23 20.0	+00.6	103	45.8 -27.8	N 19 33.5	-11.2	14
15	49	00.2 +00.1	S 12 24.3	+00.8	11	58.8 -00.8	S 23 20.6	+00.6	118	18.0 -27.7	N 19 22.3	-11.3	15
16	64	00.3 +00.1	S 12 25.1	+00.9	26	58.0 -00.7	S 23 21.2	+00.6	132	50.3 -27.5	N 19 11.0	-11.3	16
17	79	00.4 +00.0	S 12 26.0	+00.8	41	57.3 -00.8	S 23 21.8	+00.5	147	22.8 -27.6	N 18 59.7	-11.5	17
18	94	00.4 +00.1	S 12 26.8	+00.9	56	56.5 -00.8	S 23 22.3	+00.6	161	55.2 -27.4	N 18 48.2	-11.5	18
19	109	00.5 +00.1	S 12 27.7	+00.9	71	55.7 -00.7	S 23 22.9	+00.6	176	27.8 -27.3	N 18 36.7	-11.5	19
20	124	00.6 +00.0	S 12 28.6	+00.8	86	55.0 -00.8	S 23 23.5	+00.5	191	00.5 -27.2	N 18 25.2	-11.7	20
21	139	00.6 +00.1	S 12 29.4	+00.9	101	54.2 -00.8	S 23 24.0	+00.6	205	33.3 -27.1	N 18 13.5	-11.7	21
22	154	00.7 +00.0	S 12 30.3	+00.8	116	53.4 -00.7	S 23 24.6	+00.6	220	06.2 -27.1	N 18 01.8	-11.7	22
23	169	00.7 +00.1	S 12 31.1	+00.9	131	52.7 -00.8	S 23 25.2	+00.5	234	39.1 -27.0	N 17 50.1	-11.9	23
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 16°1 16°1 16°1 16°1 16°1 16°1				SD 00°1 00°1 00°1 00°1 00°1 00°1				SD 15°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°1 00°1 00°1 00°1 00°1 00°1				HP 55°5 55°4 55°3 55°2 55°1 55°0				
	SHA 150° 150° 150° 150° 149° 149°				SHA 113° 113° 113° 113° 112° 112°				SHA 225° 223° 221° 219° 217° 215°				
	Greenwich Culmination Time: 11:43				Greenwich Culmination Time: 14:12				Greenwich Culmination Time: 06:51				

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	275	28.2 +01.3	N 22 04.1	-00.1	313	41.8 +02.6	N 22 24.7	+00.0	48	37.3 +02.5	S 08 37.9	+00.1	00
01	290	29.5 +01.4	N 22 04.0	-00.1	328	44.4 +02.6	N 22 24.7	-00.1	63	39.8 +02.6	S 08 38.0	+00.0	01
02	305	30.9 +01.4	N 22 03.9	-00.1	343	47.0 +02.6	N 22 24.6	+00.0	78	42.4 +02.5	S 08 38.0	+00.0	02
03	320	32.3 +01.3	N 22 03.8	-00.1	358	49.6 +02.6	N 22 24.6	+00.0	93	44.9 +02.6	S 08 38.0	+00.0	03
04	335	33.6 +01.4	N 22 03.7	-00.2	13	52.2 +02.6	N 22 24.6	+00.0	108	47.5 +02.5	S 08 38.0	+00.1	04
05	350	35.0 +01.4	N 22 03.5	-00.1	28	54.8 +02.6	N 22 24.6	+00.0	123	50.0 +02.6	S 08 38.1	+00.0	05
06	5	36.4 +01.3	N 22 03.4	-00.1	43	57.4 +02.6	N 22 24.6	+00.0	138	52.6 +02.5	S 08 38.1	+00.0	06
07	20	37.7 +01.4	N 22 03.3	-00.1	59	00.0 +02.6	N 22 24.6	+00.0	153	55.1 +02.6	S 08 38.1	+00.1	07
08	35	39.1 +01.4	N 22 03.2	-00.1	74	02.6 +02.6	N 22 24.6	+00.0	168	57.7 +02.5	S 08 38.2	+00.0	08
09	50	40.5 +01.3	N 22 03.1	-00.2	89	05.2 +02.7	N 22 24.6	+00.0	184	00.2 +02.6	S 08 38.2	+00.0	09
10	65	41.8 +01.4	N 22 02.9	-00.1	104	07.9 +02.6	N 22 24.6	+00.0	199	02.8 +02.5	S 08 38.2	+00.0	10
11	80	43.2 +01.4	N 22 02.8	-00.1	119	10.5 +02.6	N 22 24.6	+00.0	214	05.3 +02.6	S 08 38.2	+00.1	11
12	95	44.6 +01.4	N 22 02.7	-00.1	134	13.1 +02.6	N 22 24.6	+00.0	229	07.9 +02.5	S 08 38.3	+00.0	12
13	110	46.0 +01.3	N 22 02.6	-00.1	149	15.7 +02.6	N 22 24.6	-00.1	244	10.4 +02.6	S 08 38.3	+00.0	13
14	125	47.3 +01.4	N 22 02.5	-00.2	164	18.3 +02.6	N 22 24.5	+00.0	259	13.0 +02.5	S 08 38.3	+00.1	14
15	140	48.7 +01.4	N 22 02.3	-00.1	179	20.9 +02.6	N 22 24.5	+00.0	274	15.5 +02.6	S 08 38.4	+00.0	15
16	155	50.1 +01.3	N 22 02.2	-00.1	194	23.5 +02.6	N 22 24.5	+00.0	289	18.1 +02.5	S 08 38.4	+00.0	16
17	170	51.4 +01.4	N 22 02.1	-00.1	209	26.1 +02.6	N 22 24.5	+00.0	304	20.6 +02.5	S 08 38.4	+00.1	17
18	185	52.8 +01.4	N 22 02.0	-00.1	224	28.7 +02.6	N 22 24.5	+00.0	319	23.1 +02.6	S 08 38.5	+00.0	18
19	200	54.2 +01.4	N 22 01.9	-00.2	239	31.3 +02.7	N 22 24.5	+00.0	334	25.7 +02.5	S 08 38.5	+00.0	19
20	215	55.6 +01.3	N 22 01.7	-00.1	254	34.0 +02.6	N 22 24.5	+00.0	349	28.2 +02.6	S 08 38.5	+00.0	20
21	230	56.9 +01.4	N 22 01.6	-00.1	269	36.6 +02.6	N 22 24.5	+00.0	4	30.8 +02.5	S 08 38.5	+00.1	21
22	245	58.3 +01.4	N 22 01.5	-00.1	284	39.2 +02.6	N 22 24.5	+00.0	19	33.3 +02.6	S 08 38.6	+00.0	22
23	260	59.7 +01.4	N 22 01.4	-00.1	299	41.8 +02.6	N 22 24.5	+00.0	34	35.9 +02.5	S 08 38.6	+00.0	23
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 00°1 00°1 00°1 00°1 00°1 00°1				SD 00°4 00°4 00°4 00°4 00°4 00°4				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°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 242° 241° 241° 241° 241° 241°				SHA 280° 280° 280° 280° 280° 280°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 05:37				Greenwich Culmination Time: 03:04				Greenwich Culmination Time: 20:41				

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	00.8 +00.1	S 12 32.0	+00.8	146	51.9 -00.7	S 23 25.7	+00.6	249	12.1 -26.8	N 17 38.2	-11.9	00
01	199	00.9 +00.0	S 12 32.8	+00.9	161	51.2 -00.8	S 23 26.3	+00.5	263	45.3 -26.8	N 17 26.3	-11.9	01
02	214	00.9 +00.1	S 12 33.7	+00.8	176	50.4 -00.8	S 23 26.8	+00.6	278	18.5 -26.7	N 17 14.4	-12.1	02
03	229	01.0 +00.1	S 12 34.5	+00.9	191	49.6 -00.7	S 23 27.4	+00.6	292	51.8 -26.7	N 17 02.3	-12.0	03
04	244	01.1 +00.0	S 12 35.4	+00.8	206	48.9 -00.8	S 23 28.0	+00.5	307	25.1 -26.5	N 16 50.3	-12.2	04
05	259	01.1 +00.1	S 12 36.2	+00.9	221	48.1 -00.8	S 23 28.5	+00.6	321	58.6 -26.5	N 16 38.1	-12.2	05
06	274	01.2 +00.0	S 12 37.1	+00.8	236	47.3 -00.7	S 23 29.1	+00.5	336	32.1 -26.3	N 16 25.9	-12.2	06
07	289	01.2 +00.1	S 12 37.9	+00.9	251	46.6 -00.8	S 23 29.6	+00.6	351	05.8 -26.3	N 16 13.7	-12.4	07
08	304	01.3 +00.1	S 12 38.8	+00.8	266	45.8 -00.8	S 23 30.2	+00.5	5	39.5 -26.3	N 16 01.3	-12.3	08
09	319	01.4 +00.0	S 12 39.6	+00.9	281	45.0 -00.7	S 23 30.7	+00.6	20	13.2 -26.1	N 15 49.0	-12.5	09
10	334	01.4 +00.1	S 12 40.5	+00.8	296	44.3 -00.8	S 23 31.3	+00.5	34	47.1 -26.1	N 15 36.5	-12.4	10
11	349	01.5 +00.0	S 12 41.3	+00.9	311	43.5 -00.8	S 23 31.8	+00.6	49	21.0 -26.0	N 15 24.1	-12.6	11
12	4	01.5 +00.1	S 12 42.2	+00.8	326	42.7 -00.7	S 23 32.4	+00.5	63	55.0 -25.9	N 15 11.5	-12.5	12
13	19	01.6 +00.1	S 12 43.0	+00.9	341	42.0 -00.8	S 23 32.9	+00.6	78	29.1 -25.8	N 14 59.0	-12.7	13
14	34	01.7 +00.0	S 12 43.9	+00.8	356	41.2 -00.8	S 23 33.5	+00.5	93	03.3 -25.8	N 14 46.3	-12.7	14
15	49	01.7 +00.1	S 12 44.7	+00.8	11	40.4 -00.7	S 23 34.0	+00.6	107	37.5 -25.7	N 14 33.6	-12.7	15
16	64	01.8 +00.0	S 12 45.5	+00.9	26	39.7 -00.8	S 23 34.6	+00.5	122	11.8 -25.6	N 14 20.9	-12.8	16
17	79	01.8 +00.1	S 12 46.4	+00.8	41	38.9 -00.8	S 23 35.1	+00.5	136	46.2 -25.6	N 14 08.1	-12.8	17
18	94	01.9 +00.1	S 12 47.2	+00.9	56	38.1 -00.7	S 23 35.6	+00.6	151	20.6 -25.5	N 13 55.3	-12.9	18
19	109	02.0 +00.0	S 12 48.1	+00.8	71	37.4 -00.8	S 23 36.2	+00.5	165	55.1 -25.4	N 13 42.4	-12.9	19
20	124	02.0 +00.1	S 12 48.9	+00.9	86	36.6 -00.8	S 23 36.7	+00.6	180	29.7 -25.4	N 13 29.5	-12.9	20
21	139	02.1 +00.0	S 12 49.8	+00.8	101	35.8 -00.8	S 23 37.3	+00.5	195	04.3 -25.3	N 13 16.6	-13.0	21
22	154	02.1 +00.1	S 12 50.6	+00.9	116	35.0 -00.7	S 23 37.8	+00.5	209	39.0 -25.2	N 13 03.6	-13.1	22
23	169	02.2 +00.0	S 12 51.5	+00.8	131	34.3 -00.8	S 23 38.3	+00.6	224	13.8 -25.2	N 12 50.5	-13.1	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 15°0 14°9 14°9 14°9 14°9 14°9				
	HP 00°1 00°1 00°1 00°1 00°1 00°1								HP 54°9 54°8 54°7 54°7 54°6 54°5				
	SHA 149° 149° 149° 149° 148° 148°								SHA 213° 211° 210° 208° 206° 204°				
	Greenwich Culmination Time: 11:43								Greenwich Culmination Time: 14:13				
UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	276	01.1 +01.4	N 22 01.3	-00.1	314	44.4 +02.6	N 22 24.5	-00.1	49	38.4 +02.6	S 08 38.6	+00.1	00
01	291	02.5 +01.3	N 22 01.2	-00.2	329	47.0 +02.6	N 22 24.4	+00.0	64	41.0 +02.5	S 08 38.7	+00.0	01
02	306	03.8 +01.4	N 22 01.0	-00.1	344	49.6 +02.6	N 22 24.4	+00.0	79	43.5 +02.6	S 08 38.7	+00.0	02
03	321	05.2 +01.4	N 22 00.9	-00.1	359	52.2 +02.7	N 22 24.4	+00.0	94	46.1 +02.5	S 08 38.7	+00.0	03
04	336	06.6 +01.4	N 22 00.8	-00.1	14	54.9 +02.6	N 22 24.4	+00.0	109	48.6 +02.6	S 08 38.7	+00.1	04
05	351	08.0 +01.4	N 22 00.7	-00.1	29	57.5 +02.6	N 22 24.4	+00.0	124	51.2 +02.5	S 08 38.8	+00.0	05
06	6	09.4 +01.4	N 22 00.6	-00.2	45	00.1 +02.6	N 22 24.4	+00.0	139	53.7 +02.6	S 08 38.8	+00.0	06
07	21	10.8 +01.3	N 22 00.4	-00.1	60	02.7 +02.6	N 22 24.4	+00.0	154	56.3 +02.5	S 08 38.8	+00.0	07
08	36	12.1 +01.4	N 22 00.3	-00.1	75	05.3 +02.6	N 22 24.4	+00.0	169	58.8 +02.6	S 08 38.8	+00.1	08
09	51	13.5 +01.4	N 22 00.2	-00.1	90	07.9 +02.7	N 22 24.4	+00.0	185	01.4 +02.5	S 08 38.9	+00.0	09
10	66	14.9 +01.4	N 22 00.1	-00.1	105	10.6 +02.6	N 22 24.4	+00.0	200	03.9 +02.6	S 08 38.9	+00.0	10
11	81	16.3 +01.4	N 21 60.0	-00.1	120	13.2 +02.6	N 22 24.4	-00.1	215	06.5 +02.5	S 08 38.9	+00.1	11
12	96	17.7 +01.4	N 21 59.9	-00.2	135	15.8 +02.6	N 22 24.3	+00.0	230	09.0 +02.5	S 08 39.0	+00.0	12
13	111	19.1 +01.4	N 21 59.7	-00.1	150	18.4 +02.6	N 22 24.3	+00.0	245	11.5 +02.6	S 08 39.0	+00.0	13
14	126	20.5 +01.4	N 21 59.6	-00.1	165	21.0 +02.6	N 22 24.3	+00.0	260	14.1 +02.5	S 08 39.0	+00.0	14
15	141	21.9 +01.3	N 21 59.5	-00.1	180	23.6 +02.7	N 22 24.3	+00.0	275	16.6 +02.6	S 08 39.0	+00.1	15
16	156	23.2 +01.4	N 21 59.4	-00.1	195	26.3 +02.6	N 22 24.3	+00.0	290	19.2 +02.5	S 08 39.1	+00.0	16
17	171	24.6 +01.4	N 21 59.3	-00.2	210	28.9 +02.6	N 22 24.3	+00.0	305	21.7 +02.6	S 08 39.1	+00.0	17
18	186	26.0 +01.4	N 21 59.1	-00.1	225	31.5 +02.6	N 22 24.3	+00.0	320	24.3 +02.5	S 08 39.1	+00.1	18
19	201	27.4 +01.4	N 21 59.0	-00.1	240	34.1 +02.6	N 22 24.3	+00.0	335	26.8 +02.6	S 08 39.2	+00.0	19
20	216	28.8 +01.4	N 21 58.9	-00.1	255	36.7 +02.7	N 22 24.3	+00.0	350	29.4 +02.5	S 08 39.2	+00.0	20
21	231	30.2 +01.4	N 21 58.8	-00.1	270	39.4 +02.6	N 22 24.3	+00.0	5	31.9 +02.5	S 08 39.2	+00.0	21
22	246	31.6 +01.4	N 21 58.7	-00.1	285	42.0 +02.6	N 22 24.3	-00.1	20	34.4 +02.6	S 08 39.2	+00.1	22
23	261	33.0 +01.4	N 21 58.6	-00.2	300	44.6 +02.6	N 22 24.2	+00.0	35	37.0 +02.5	S 08 39.3	+00.0	23
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 00°1 00°1 00°1 00°1 00°1 00°1				SD 00°4 00°4 00°4 00°4 00°4 00°4				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°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 241° 241° 241° 241° 241° 241°				SHA 280° 280° 280° 280° 280° 280°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 05:35				Greenwich Culmination Time: 03:00				Greenwich Culmination Time: 20:37				

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	02.2 +00.1	S 12 52.3 +00.8		146	33.5 -00.8	S 23 38.9 +00.5		238	48.6 -25.1	N 12 37.4 -13.1		00
01	199	02.3 +00.1	S 12 53.1 +00.9		161	32.7 -00.7	S 23 39.4 +00.5		253	23.5 -25.1	N 12 24.3 -13.2		01
02	214	02.4 +00.0	S 12 54.0 +00.8		176	32.0 -00.8	S 23 39.9 +00.6		267	58.4 -24.9	N 12 11.1 -13.2		02
03	229	02.4 +00.1	S 12 54.8 +00.9		191	31.2 -00.8	S 23 40.5 +00.5		282	33.5 -25.0	N 11 57.9 -13.2		03
04	244	02.5 +00.0	S 12 55.7 +00.8		206	30.4 -00.8	S 23 41.0 +00.5		297	08.5 -24.9	N 11 44.7 -13.3		04
05	259	02.5 +00.1	S 12 56.5 +00.9		221	29.6 -00.7	S 23 41.5 +00.6		311	43.6 -24.8	N 11 31.4 -13.3		05
06	274	02.6 +00.0	S 12 57.4 +00.8		236	28.9 -00.8	S 23 42.1 +00.5		326	18.8 -24.8	N 11 18.1 -13.4		06
07	289	02.6 +00.1	S 12 58.2 +00.8		251	28.1 -00.8	S 23 42.6 +00.5		340	54.0 -24.7	N 11 04.7 -13.4		07
08	304	02.7 +00.0	S 12 59.0 +00.9		266	27.3 -00.8	S 23 43.1 +00.5		355	29.3 -24.6	N 10 51.3 -13.4		08
09	319	02.7 +00.1	S 12 59.9 +00.8		281	26.5 -00.7	S 23 43.6 +00.6		10	04.7 -24.7	N 10 37.9 -13.4		09
10	334	02.8 +00.0	S 13 00.7 +00.9		296	25.8 -00.8	S 23 44.2 +00.5		24	40.0 -24.5	N 10 24.5 -13.5		10
11	349	02.8 +00.1	S 13 01.6 +00.8		311	25.0 -00.8	S 23 44.7 +00.5		39	15.5 -24.5	N 10 11.0 -13.5		11
12	4	02.9 +00.0	S 13 02.4 +00.8		326	24.2 -00.8	S 23 45.2 +00.5		53	51.0 -24.5	N 09 57.5 -13.6		12
13	19	02.9 +00.1	S 13 03.2 +00.9		341	23.4 -00.7	S 23 45.7 +00.5		68	26.5 -24.4	N 09 43.9 -13.6		13
14	34	03.0 +00.0	S 13 04.1 +00.8		356	22.7 -00.8	S 23 46.2 +00.6		83	02.1 -24.4	N 09 30.3 -13.6		14
15	49	03.0 +00.1	S 13 04.9 +00.9		11	21.9 -00.8	S 23 46.8 +00.5		97	37.7 -24.3	N 09 16.7 -13.6		15
16	64	03.1 +00.0	S 13 05.8 +00.8		26	21.1 -00.8	S 23 47.3 +00.5		112	13.4 -24.3	N 09 03.1 -13.7		16
17	79	03.1 +00.1	S 13 06.6 +00.8		41	20.3 -00.8	S 23 47.8 +00.5		126	49.1 -24.3	N 08 49.4 -13.7		17
18	94	03.2 +00.0	S 13 07.4 +00.9		56	19.5 -00.7	S 23 48.3 +00.5		141	24.8 -24.2	N 08 35.7 -13.7		18
19	109	03.2 +00.1	S 13 08.3 +00.8		71	18.8 -00.8	S 23 48.8 +00.5		156	00.6 -24.1	N 08 22.0 -13.7		19
20	124	03.3 +00.0	S 13 09.1 +00.8		86	18.0 -00.8	S 23 49.3 +00.5		170	36.5 -24.2	N 08 08.3 -13.8		20
21	139	03.3 +00.1	S 13 09.9 +00.9		101	17.2 -00.8	S 23 49.8 +00.6		185	12.3 -24.0	N 07 54.5 -13.8		21
22	154	03.4 +00.0	S 13 10.8 +00.8		116	16.4 -00.7	S 23 50.4 +00.5		199	48.3 -24.1	N 07 40.7 -13.8		22
23	169	03.4 +00.1	S 13 11.6 +00.8		131	15.7 -00.8	S 23 50.9 +00.5		214	24.2 -24.0	N 07 26.9 -13.8		23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 16'1 16'1 16'1 16'1 16'1 16'1				SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 14'8 14'8 14'8 14'8 14'8 14'8				
	HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 54'5 54'4 54'3 54'3 54'2 54'2				
	SHA 148° 148° 148° 148° 147° 147°				SHA 111° 110° 110° 110° 110° 110°				SHA 202° 200° 198° 197° 195° 193°				
	Greenwich Culmination Time: 11:43				Greenwich Culmination Time: 14:14				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	276	34.4 +01.4	N 21 58.4 -00.1		315	47.2 +02.7	N 22 24.2 +00.0		50	39.5 +02.6	S 08 39.3 +00.0		00
01	291	35.8 +01.4	N 21 58.3 -00.1		330	49.9 +02.6	N 22 24.2 +00.0		65	42.1 +02.5	S 08 39.3 +00.0		01
02	306	37.2 +01.4	N 21 58.2 -00.1		345	52.5 +02.6	N 22 24.2 +00.0		80	44.6 +02.6	S 08 39.3 +00.1		02
03	321	38.6 +01.4	N 21 58.1 -00.1		0	55.1 +02.6	N 22 24.2 +00.0		95	47.2 +02.5	S 08 39.4 +00.0		03
04	336	40.0 +01.4	N 21 58.0 -00.1		15	57.7 +02.6	N 22 24.2 +00.0		110	49.7 +02.6	S 08 39.4 +00.0		04
05	351	41.4 +01.4	N 21 57.9 -00.2		31	00.3 +02.7	N 22 24.2 +00.0		125	52.3 +02.5	S 08 39.4 +00.0		05
06	6	42.8 +01.4	N 21 57.7 -00.1		46	03.0 +02.6	N 22 24.2 +00.0		140	54.8 +02.5	S 08 39.4 +00.1		06
07	21	44.2 +01.4	N 21 57.6 -00.1		61	05.6 +02.6	N 22 24.2 +00.0		155	57.3 +02.6	S 08 39.5 +00.0		07
08	36	45.6 +01.4	N 21 57.5 -00.1		76	08.2 +02.6	N 22 24.2 -00.1		170	59.9 +02.5	S 08 39.5 +00.0		08
09	51	47.0 +01.4	N 21 57.4 -00.1		91	10.8 +02.7	N 22 24.1 +00.0		186	02.4 +02.6	S 08 39.5 +00.1		09
10	66	48.4 +01.4	N 21 57.3 -00.1		106	13.5 +02.6	N 22 24.1 +00.0		201	05.0 +02.5	S 08 39.6 +00.0		10
11	81	49.8 +01.4	N 21 57.2 -00.2		121	16.1 +02.6	N 22 24.1 +00.0		216	07.5 +02.6	S 08 39.6 +00.0		11
12	96	51.2 +01.4	N 21 57.0 -00.1		136	18.7 +02.6	N 22 24.1 +00.0		231	10.1 +02.5	S 08 39.6 +00.0		12
13	111	52.6 +01.4	N 21 56.9 -00.1		151	21.3 +02.7	N 22 24.1 +00.0		246	12.6 +02.5	S 08 39.6 +00.1		13
14	126	54.0 +01.4	N 21 56.8 -00.1		166	24.0 +02.6	N 22 24.1 +00.0		261	15.1 +02.6	S 08 39.7 +00.0		14
15	141	55.4 +01.4	N 21 56.7 -00.1		181	26.6 +02.6	N 22 24.1 +00.0		276	17.7 +02.5	S 08 39.7 +00.0		15
16	156	56.8 +01.4	N 21 56.6 -00.1		196	29.2 +02.7	N 22 24.1 +00.0		291	20.2 +02.6	S 08 39.7 +00.0		16
17	171	58.2 +01.4	N 21 56.5 -00.2		211	31.9 +02.6	N 22 24.1 +00.0		306	22.8 +02.5	S 08 39.7 +00.1		17
18	186	59.6 +01.4	N 21 56.3 -00.1		226	34.5 +02.6	N 22 24.1 -00.1		321	25.3 +02.5	S 08 39.8 +00.0		18
19	202	01.0 +01.5	N 21 56.2 -00.1		241	37.1 +02.6	N 22 24.0 +00.0		336	27.8 +02.6	S 08 39.8 +00.0		19
20	217	02.5 +01.4	N 21 56.1 -00.1		256	39.7 +02.7	N 22 24.0 +00.0		351	30.4 +02.5	S 08 39.8 +00.0		20
21	232	03.9 +01.4	N 21 56.0 -00.1		271	42.4 +02.6	N 22 24.0 +00.0		6	32.9 +02.6	S 08 39.8 +00.1		21
22	247	05.3 +01.4	N 21 55.9 -00.1		286	45.0 +02.6	N 22 24.0 +00.0		21	35.5 +02.5	S 08 39.9 +00.0		22
23	262	06.7 +01.4	N 21 55.8 -00.2		301	47.6 +02.7	N 22 24.0 +00.0		36	38.0 +02.5	S 08 39.9 +00.0		23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 00'4 00'4 00'4 00'4 00'4 00'4				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 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 241° 241° 241° 240° 240° 240°				SHA 280° 280° 280° 280° 280° 280°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 05:33				Greenwich Culmination Time: 02:56				Greenwich Culmination Time: 20:33				

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184	03.5 +00.0	S 13 12.4	+00.9	146	14.9 -00.8	S 23 51.4	+00.5	229	00.2 -24.0	N 07 13.1	-13.9	00
01	199	03.5 +00.1	S 13 13.3	+00.8	161	14.1 -00.8	S 23 51.9	+00.5	243	36.2 -23.9	N 06 59.2	-13.9	01
02	214	03.6 +00.0	S 13 14.1	+00.8	176	13.3 -00.8	S 23 52.4	+00.5	258	12.3 -24.0	N 06 45.3	-13.9	02
03	229	03.6 +00.1	S 13 14.9	+00.9	191	12.5 -00.8	S 23 52.9	+00.5	272	48.3 -23.9	N 06 31.4	-13.9	03
04	244	03.7 +00.0	S 13 15.8	+00.8	206	11.7 -00.7	S 23 53.4	+00.5	287	24.4 -23.8	N 06 17.5	-13.9	04
05	259	03.7 +00.1	S 13 16.6	+00.8	221	11.0 -00.8	S 23 53.9	+00.5	302	00.6 -23.8	N 06 03.6	-14.0	05
06	274	03.8 +00.0	S 13 17.4	+00.9	236	10.2 -00.8	S 23 54.4	+00.5	316	36.8 -23.8	N 05 49.6	-13.9	06
07	289	03.8 +00.1	S 13 18.3	+00.8	251	09.4 -00.8	S 23 54.9	+00.5	331	13.0 -23.8	N 05 35.7	-14.0	07
08	304	03.9 +00.0	S 13 19.1	+00.8	266	08.6 -00.8	S 23 55.4	+00.5	345	49.2 -23.8	N 05 21.7	-14.0	08
09	319	03.9 +00.0	S 13 19.9	+00.9	281	07.8 -00.8	S 23 55.9	+00.5	0	25.4 -23.7	N 05 07.7	-14.0	09
10	334	03.9 +00.1	S 13 20.8	+00.8	296	07.0 -00.7	S 23 56.4	+00.5	15	01.7 -23.7	N 04 53.7	-14.1	10
11	349	04.0 +00.0	S 13 21.6	+00.8	311	06.3 -00.8	S 23 56.9	+00.5	29	38.0 -23.7	N 04 39.6	-14.0	11
12	4	04.0 +00.1	S 13 22.4	+00.9	326	05.5 -00.8	S 23 57.4	+00.5	44	14.3 -23.6	N 04 25.6	-14.1	12
13	19	04.1 +00.0	S 13 23.3	+00.8	341	04.7 -00.8	S 23 57.9	+00.5	58	50.7 -23.7	N 04 11.5	-14.0	13
14	34	04.1 +00.1	S 13 24.1	+00.8	356	03.9 -00.8	S 23 58.4	+00.4	73	27.0 -23.6	N 03 57.5	-14.1	14
15	49	04.2 +00.0	S 13 24.9	+00.9	11	03.1 -00.8	S 23 58.8	+00.5	88	03.4 -23.6	N 03 43.4	-14.1	15
16	64	04.2 +00.0	S 13 25.8	+00.8	26	02.3 -00.8	S 23 59.3	+00.5	102	39.8 -23.6	N 03 29.3	-14.1	16
17	79	04.2 +00.1	S 13 26.6	+00.8	41	01.5 -00.7	S 23 59.8	+00.5	117	16.2 -23.5	N 03 15.2	-14.1	17
18	94	04.3 +00.0	S 13 27.4	+00.8	56	00.8 -00.8	S 24 00.3	+00.5	131	52.7 -23.6	N 03 01.1	-14.1	18
19	109	04.3 +00.1	S 13 28.2	+00.9	70	60.0 -00.8	S 24 00.8	+00.5	146	29.1 -23.5	N 02 47.0	-14.1	19
20	124	04.4 +00.0	S 13 29.1	+00.8	85	59.2 -00.8	S 24 01.3	+00.5	161	05.6 -23.6	N 02 32.9	-14.2	20
21	139	04.4 +00.1	S 13 29.9	+00.8	100	58.4 -00.8	S 24 01.8	+00.5	175	42.0 -23.5	N 02 18.7	-14.1	21
22	154	04.5 +00.0	S 13 30.7	+00.8	115	57.6 -00.8	S 24 02.3	+00.4	190	18.5 -23.5	N 02 04.6	-14.2	22
23	169	04.5 +00.0	S 13 31.5	+00.9	130	56.8 -00.8	S 24 02.7	+00.5	204	55.0 -23.5	N 01 50.4	-14.1	23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 16'1 16'1 16'1 16'1 16'1 16'1				SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 14'8 14'7 14'7 14'7 14'7 14'7				
	HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 54'2 54'1 54'1 54'1 54'0 54'0				
	SHA 147° 147° 147° 147° 147° 146°				SHA 109° 109° 109° 109° 108° 108°				SHA 191° 190° 188° 186° 184° 183°				
	Greenwich Culmination Time: 11:43				Greenwich Culmination Time: 14:15				Greenwich Culmination Time: 08:58				

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	277	08.1 +01.4	N 21 55.6	-00.1	316	50.3 +02.6	N 22 24.0	+00.0	51	40.5 +02.6	S 08 39.9	+00.0	00
01	292	09.5 +01.4	N 21 55.5	-00.1	331	52.9 +02.6	N 22 24.0	+00.0	66	43.1 +02.5	S 08 39.9	+00.1	01
02	307	10.9 +01.4	N 21 55.4	-00.1	346	55.5 +02.7	N 22 24.0	+00.0	81	45.6 +02.6	S 08 40.0	+00.0	02
03	322	12.3 +01.5	N 21 55.3	-00.1	1	58.2 +02.6	N 22 24.0	+00.0	96	48.2 +02.5	S 08 40.0	+00.0	03
04	337	13.8 +01.4	N 21 55.2	-00.1	17	00.8 +02.6	N 22 24.0	-00.1	111	50.7 +02.5	S 08 40.0	+00.0	04
05	352	15.2 +01.4	N 21 55.1	-00.2	32	03.4 +02.7	N 22 23.9	+00.0	126	53.2 +02.6	S 08 40.0	+00.1	05
06	7	16.6 +01.4	N 21 54.9	-00.1	47	06.1 +02.6	N 22 23.9	+00.0	141	55.8 +02.5	S 08 40.1	+00.0	06
07	22	18.0 +01.4	N 21 54.8	-00.1	62	08.7 +02.6	N 22 23.9	+00.0	156	58.3 +02.6	S 08 40.1	+00.0	07
08	37	19.4 +01.5	N 21 54.7	-00.1	77	11.3 +02.7	N 22 23.9	+00.0	172	00.9 +02.5	S 08 40.1	+00.0	08
09	52	20.9 +01.4	N 21 54.6	-00.1	92	14.0 +02.6	N 22 23.9	+00.0	187	03.4 +02.5	S 08 40.1	+00.1	09
10	67	22.3 +01.4	N 21 54.5	-00.1	107	16.6 +02.6	N 22 23.9	+00.0	202	05.9 +02.6	S 08 40.2	+00.0	10
11	82	23.7 +01.4	N 21 54.4	-00.1	122	19.2 +02.7	N 22 23.9	+00.0	217	08.5 +02.5	S 08 40.2	+00.0	11
12	97	25.1 +01.4	N 21 54.3	-00.2	137	21.9 +02.6	N 22 23.9	+00.0	232	11.0 +02.6	S 08 40.2	+00.0	12
13	112	26.5 +01.5	N 21 54.1	-00.1	152	24.5 +02.6	N 22 23.9	+00.0	247	13.6 +02.5	S 08 40.2	+00.1	13
14	127	28.0 +01.4	N 21 54.0	-00.1	167	27.1 +02.7	N 22 23.9	-00.1	262	16.1 +02.5	S 08 40.3	+00.0	14
15	142	29.4 +01.4	N 21 53.9	-00.1	182	29.8 +02.6	N 22 23.8	+00.0	277	18.6 +02.6	S 08 40.3	+00.0	15
16	157	30.8 +01.4	N 21 53.8	-00.1	197	32.4 +02.6	N 22 23.8	+00.0	292	21.2 +02.5	S 08 40.3	+00.0	16
17	172	32.2 +01.5	N 21 53.7	-00.1	212	35.0 +02.7	N 22 23.8	+00.0	307	23.7 +02.5	S 08 40.3	+00.1	17
18	187	33.7 +01.4	N 21 53.6	-00.2	227	37.7 +02.6	N 22 23.8	+00.0	322	26.2 +02.6	S 08 40.4	+00.0	18
19	202	35.1 +01.4	N 21 53.4	-00.1	242	40.3 +02.6	N 22 23.8	+00.0	337	28.8 +02.5	S 08 40.4	+00.0	19
20	217	36.5 +01.4	N 21 53.3	-00.1	257	42.9 +02.7	N 22 23.8	+00.0	352	31.3 +02.6	S 08 40.4	+00.0	20
21	232	37.9 +01.5	N 21 53.2	-00.1	272	45.6 +02.6	N 22 23.8	+00.0	7	33.9 +02.5	S 08 40.4	+00.1	21
22	247	39.4 +01.4	N 21 53.1	-00.1	287	48.2 +02.7	N 22 23.8	+00.0	22	36.4 +02.5	S 08 40.5	+00.0	22
23	262	40.8 +01.4	N 21 53.0	-00.1	302	50.9 +02.6	N 22 23.8	-00.1	37	38.9 +02.6	S 08 40.5	+00.0	23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 00'4 00'4 00'4 00'4 00'4 00'4				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 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 240° 240° 240° 240° 240° 240°				SHA 280° 280° 280° 280° 280° 280°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 05:30				Greenwich Culmination Time: 02:52				Greenwich Culmination Time: 20:29				

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184 04.5 +00.1	S	13 32.4 +00.8	145 56.0 -00.8	S	24 03.2 +00.5	219 31.5 -23.5	N	01 36.3 -14.2	00			
01	199 04.6 +00.0	S	13 33.2 +00.8	160 55.2 -00.7	S	24 03.7 +00.5	234 08.0 -23.5	N	01 22.1 -14.1	01			
02	214 04.6 +00.0	S	13 34.0 +00.9	175 54.5 -00.8	S	24 04.2 +00.4	248 44.5 -23.5	N	01 08.0 -14.2	02			
03	229 04.6 +00.1	S	13 34.9 +00.8	190 53.7 -00.8	S	24 04.6 +00.5	263 21.0 -23.4	N	00 53.8 -14.1	03			
04	244 04.7 +00.0	S	13 35.7 +00.8	205 52.9 -00.8	S	24 05.1 +00.5	277 57.6 -23.5	N	00 39.7 -14.2	04			
05	259 04.7 +00.1	S	13 36.5 +00.8	220 52.1 -00.8	S	24 05.6 +00.5	292 34.1 -23.5	N	00 25.5 -14.2	05			
06	274 04.8 +00.0	S	13 37.3 +00.9	235 51.3 -00.8	S	24 06.1 +00.4	307 10.6 -23.4	N	00 11.3 -14.1	06			
07	289 04.8 +00.0	S	13 38.2 +00.8	250 50.5 -00.8	S	24 06.5 +00.5	321 47.2 -23.5	S	00 02.8 +14.2	07			
08	304 04.8 +00.1	S	13 39.0 +00.8	265 49.7 -00.8	S	24 07.0 +00.5	336 23.7 -23.5	S	00 17.0 +14.2	08			
09	319 04.9 +00.0	S	13 39.8 +00.8	280 48.9 -00.8	S	24 07.5 +00.5	351 00.2 -23.4	S	00 31.2 +14.1	09			
10	334 04.9 +00.0	S	13 40.6 +00.8	295 48.1 -00.8	S	24 08.0 +00.4	5 36.8 -23.5	S	00 45.3 +14.2	10			
11	349 04.9 +00.1	S	13 41.4 +00.9	310 47.3 -00.8	S	24 08.4 +00.5	20 13.3 -23.5	S	00 59.5 +14.1	11			
12	4 05.0 +00.0	S	13 42.3 +00.8	325 46.5 -00.8	S	24 08.9 +00.4	34 49.8 -23.5	S	01 13.6 +14.2	12			
13	19 05.0 +00.1	S	13 43.1 +00.8	340 45.7 -00.7	S	24 09.3 +00.5	49 26.3 -23.5	S	01 27.8 +14.1	13			
14	34 05.1 +00.0	S	13 43.9 +00.8	355 45.0 -00.8	S	24 09.8 +00.5	64 02.8 -23.5	S	01 41.9 +14.2	14			
15	49 05.1 +00.0	S	13 44.7 +00.8	10 44.2 -00.8	S	24 10.3 +00.4	78 39.3 -23.5	S	01 56.1 +14.1	15			
16	64 05.1 +00.1	S	13 45.5 +00.9	25 43.4 -00.8	S	24 10.7 +00.5	93 15.8 -23.5	S	02 10.2 +14.1	16			
17	79 05.2 +00.0	S	13 46.4 +00.8	40 42.6 -00.8	S	24 11.2 +00.5	107 52.3 -23.5	S	02 24.3 +14.1	17			
18	94 05.2 +00.0	S	13 47.2 +00.8	55 41.8 -00.8	S	24 11.7 +00.4	122 28.8 -23.5	S	02 38.4 +14.1	18			
19	109 05.2 +00.1	S	13 48.0 +00.8	70 41.0 -00.8	S	24 12.1 +00.5	137 05.3 -23.6	S	02 52.5 +14.1	19			
20	124 05.3 +00.0	S	13 48.8 +00.8	85 40.2 -00.8	S	24 12.6 +00.4	151 41.7 -23.5	S	03 06.6 +14.1	20			
21	139 05.3 +00.0	S	13 49.6 +00.9	100 39.4 -00.8	S	24 13.0 +00.5	166 18.2 -23.6	S	03 20.7 +14.1	21			
22	154 05.3 +00.1	S	13 50.5 +00.8	115 38.6 -00.8	S	24 13.5 +00.4	180 54.6 -23.6	S	03 34.8 +14.1	22			
23	169 05.4 +00.0	S	13 51.3 +00.8	130 37.8 -00.8	S	24 13.9 +00.5	195 31.0 -23.6	S	03 48.9 +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 00'1 00'1 00'1 00'1 00'1 00'1			SD 14'7 14'7 14'7 14'7 14'7 14'7						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 54'0 54'0 54'0 54'0 54'0 54'0						
	SHA 146° 146° 146° 146° 146° 145°			SHA 108° 108° 108° 107° 107° 107°			SHA 181° 179° 177° 176° 174° 172°						
	Greenwich Culmination Time: 11:43			Greenwich Culmination Time: 14:17			Greenwich Culmination Time: 09:36						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	277 42.2 +01.5	N	21 52.9 -00.1	317 53.5 +02.6	N	22 23.7 +00.0	52 41.5 +02.5	S	08 40.5 +00.0	00			
01	292 43.7 +01.4	N	21 52.8 -00.2	332 56.1 +02.7	N	22 23.7 +00.0	67 44.0 +02.5	S	08 40.5 +00.0	01			
02	307 45.1 +01.4	N	21 52.6 -00.1	347 58.8 +02.6	N	22 23.7 +00.0	82 46.5 +02.6	S	08 40.5 +00.1	02			
03	322 46.5 +01.5	N	21 52.5 -00.1	3 01.4 +02.7	N	22 23.7 +00.0	97 49.1 +02.5	S	08 40.6 +00.0	03			
04	337 48.0 +01.4	N	21 52.4 -00.1	18 04.1 +02.6	N	22 23.7 +00.0	112 51.6 +02.6	S	08 40.6 +00.0	04			
05	352 49.4 +01.4	N	21 52.3 -00.1	33 06.7 +02.6	N	22 23.7 +00.0	127 54.2 +02.5	S	08 40.6 +00.0	05			
06	7 50.8 +01.5	N	21 52.2 -00.1	48 09.3 +02.7	N	22 23.7 +00.0	142 56.7 +02.5	S	08 40.6 +00.1	06			
07	22 52.3 +01.4	N	21 52.1 -00.1	63 12.0 +02.6	N	22 23.7 +00.0	157 59.2 +02.6	S	08 40.7 +00.0	07			
08	37 53.7 +01.5	N	21 52.0 -00.2	78 14.6 +02.7	N	22 23.7 -00.1	173 01.8 +02.5	S	08 40.7 +00.0	08			
09	52 55.2 +01.4	N	21 51.8 -00.1	93 17.3 +02.6	N	22 23.6 +00.0	188 04.3 +02.5	S	08 40.7 +00.0	09			
10	67 56.6 +01.4	N	21 51.7 -00.1	108 19.9 +02.7	N	22 23.6 +00.0	203 06.8 +02.6	S	08 40.7 +00.1	10			
11	82 58.0 +01.5	N	21 51.6 -00.1	123 22.6 +02.6	N	22 23.6 +00.0	218 09.4 +02.5	S	08 40.8 +00.0	11			
12	97 59.5 +01.4	N	21 51.5 -00.1	138 25.2 +02.6	N	22 23.6 +00.0	233 11.9 +02.5	S	08 40.8 +00.0	12			
13	113 00.9 +01.4	N	21 51.4 -00.1	153 27.8 +02.7	N	22 23.6 +00.0	248 14.4 +02.6	S	08 40.8 +00.0	13			
14	128 02.3 +01.5	N	21 51.3 -00.1	168 30.5 +02.6	N	22 23.6 +00.0	263 17.0 +02.5	S	08 40.8 +00.0	14			
15	143 03.8 +01.4	N	21 51.2 -00.1	183 33.1 +02.7	N	22 23.6 +00.0	278 19.5 +02.5	S	08 40.8 +00.1	15			
16	158 05.2 +01.5	N	21 51.1 -00.2	198 35.8 +02.6	N	22 23.6 +00.0	293 22.0 +02.6	S	08 40.9 +00.0	16			
17	173 06.7 +01.4	N	21 50.9 -00.1	213 38.4 +02.7	N	22 23.6 -00.1	308 24.6 +02.5	S	08 40.9 +00.0	17			
18	188 08.1 +01.5	N	21 50.8 -00.1	228 41.1 +02.6	N	22 23.5 +00.0	323 27.1 +02.5	S	08 40.9 +00.0	18			
19	203 09.6 +01.4	N	21 50.7 -00.1	243 43.7 +02.7	N	22 23.5 +00.0	338 29.6 +02.6	S	08 40.9 +00.1	19			
20	218 11.0 +01.5	N	21 50.6 -00.1	258 46.4 +02.6	N	22 23.5 +00.0	353 32.2 +02.5	S	08 41.0 +00.0	20			
21	233 12.5 +01.4	N	21 50.5 -00.1	273 49.0 +02.6	N	22 23.5 +00.0	8 34.7 +02.5	S	08 41.0 +00.0	21			
22	248 13.9 +01.5	N	21 50.4 -00.1	288 51.6 +02.7	N	22 23.5 +00.0	23 37.2 +02.6	S	08 41.0 +00.0	22			
23	263 15.4 +01.4	N	21 50.3 -00.2	303 54.3 +02.6	N	22 23.5 +00.0	38 39.8 +02.5	S	08 41.0 +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 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			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 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 240° 240° 240° 240° 240° 240°			SHA 280° 280° 280° 280° 280° 280°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 05:28			Greenwich Culmination Time: 02:47			Greenwich Culmination Time: 20:25						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184	05.4 +00.0	S 13 52.1 +00.8		145	37.0 -00.8	S 24 14.4 +00.4		210	07.4 -23.6	S 04 02.9 +14.1		00
01	199	05.4 +00.0	S 13 52.9 +00.8		160	36.2 -00.8	S 24 14.8 +00.5		224	43.8 -23.6	S 04 17.0 +14.0		01
02	214	05.4 +00.1	S 13 53.7 +00.8		175	35.4 -00.8	S 24 15.3 +00.4		239	20.2 -23.7	S 04 31.0 +14.0		02
03	229	05.5 +00.0	S 13 54.5 +00.9		190	34.6 -00.8	S 24 15.7 +00.5		253	56.5 -23.7	S 04 45.0 +14.0		03
04	244	05.5 +00.0	S 13 55.4 +00.8		205	33.8 -00.8	S 24 16.2 +00.4		268	32.8 -23.7	S 04 59.0 +14.0		04
05	259	05.5 +00.1	S 13 56.2 +00.8		220	33.0 -00.8	S 24 16.6 +00.5		283	09.1 -23.7	S 05 13.0 +14.0		05
06	274	05.6 +00.0	S 13 57.0 +00.8		235	32.2 -00.8	S 24 17.1 +00.4		297	45.4 -23.7	S 05 27.0 +13.9		06
07	289	05.6 +00.0	S 13 57.8 +00.8		250	31.4 -00.8	S 24 17.5 +00.5		312	21.7 -23.8	S 05 40.9 +13.9		07
08	304	05.6 +00.1	S 13 58.6 +00.8		265	30.6 -00.8	S 24 18.0 +00.4		326	57.9 -23.8	S 05 54.8 +13.9		08
09	319	05.7 +00.0	S 13 59.4 +00.8		280	29.8 -00.8	S 24 18.4 +00.4		341	34.1 -23.8	S 06 08.7 +13.9		09
10	334	05.7 +00.0	S 14 00.2 +00.9		295	29.0 -00.8	S 24 18.8 +00.5		356	10.3 -23.9	S 06 22.6 +13.9		10
11	349	05.7 +00.0	S 14 01.1 +00.8		310	28.2 -00.8	S 24 19.3 +00.4		10	46.4 -23.9	S 06 36.5 +13.9		11
12	4	05.7 +00.1	S 14 01.9 +00.8		325	27.4 -00.8	S 24 19.7 +00.5		25	22.5 -23.9	S 06 50.4 +13.8		12
13	19	05.8 +00.0	S 14 02.7 +00.8		340	26.6 -00.8	S 24 20.2 +00.4		39	58.6 -23.9	S 07 04.2 +13.8		13
14	34	05.8 +00.0	S 14 03.5 +00.8		355	25.8 -00.8	S 24 20.6 +00.4		54	34.7 -24.0	S 07 18.0 +13.8		14
15	49	05.8 +00.0	S 14 04.3 +00.8		10	25.0 -00.8	S 24 21.0 +00.5		69	10.7 -24.0	S 07 31.8 +13.7		15
16	64	05.8 +00.1	S 14 05.1 +00.8		25	24.2 -00.8	S 24 21.5 +00.4		83	46.7 -24.0	S 07 45.5 +13.8		16
17	79	05.9 +00.0	S 14 05.9 +00.8		40	23.4 -00.8	S 24 21.9 +00.4		98	22.7 -24.1	S 07 59.3 +13.7		17
18	94	05.9 +00.0	S 14 06.7 +00.9		55	22.6 -00.8	S 24 22.3 +00.5		112	58.6 -24.1	S 08 13.0 +13.6		18
19	109	05.9 +00.0	S 14 07.6 +00.8		70	21.8 -00.8	S 24 22.8 +00.4		127	34.5 -24.1	S 08 26.6 +13.7		19
20	124	05.9 +00.1	S 14 08.4 +00.8		85	21.0 -00.8	S 24 23.2 +00.4		142	10.4 -24.2	S 08 40.3 +13.6		20
21	139	06.0 +00.0	S 14 09.2 +00.8		100	20.2 -00.8	S 24 23.6 +00.4		156	46.2 -24.2	S 08 53.9 +13.6		21
22	154	06.0 +00.0	S 14 10.0 +00.8		115	19.4 -00.8	S 24 24.0 +00.5		171	22.0 -24.3	S 09 07.5 +13.6		22
23	169	06.0 +00.0	S 14 10.8 +00.8		130	18.6 -00.8	S 24 24.5 +00.4		185	57.7 -24.3	S 09 21.1 +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 00'1 00'1 00'1 00'1 00'1 00'1				SD 14'7 14'7 14'7 14'7 14'7 14'7				
	HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 54'0 54'0 54'0 54'0 54'0 54'0				
	SHA 145° 145° 145° 145° 145° 144°				SHA 107° 106° 106° 106° 106° 106°				SHA 170° 169° 167° 165° 163° 162°				
	Greenwich Culmination Time: 11:43				Greenwich Culmination Time: 14:18				Greenwich Culmination Time: 10:15				

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	278	16.8 +01.5	N 21 50.1 -00.1		318	56.9 +02.7	N 22 23.5 +00.0		53	42.3 +02.5	S 08 41.0 +00.1		00
01	293	18.3 +01.4	N 21 50.0 -00.1		333	59.6 +02.6	N 22 23.5 +00.0		68	44.8 +02.6	S 08 41.1 +00.0		01
02	308	19.7 +01.5	N 21 49.9 -00.1		349	02.2 +02.7	N 22 23.5 -00.1		83	47.4 +02.5	S 08 41.1 +00.0		02
03	323	21.2 +01.4	N 21 49.8 -00.1		4	04.9 +02.6	N 22 23.4 +00.0		98	49.9 +02.5	S 08 41.1 +00.0		03
04	338	22.6 +01.5	N 21 49.7 -00.1		19	07.5 +02.7	N 22 23.4 +00.0		113	52.4 +02.6	S 08 41.1 +00.1		04
05	353	24.1 +01.4	N 21 49.6 -00.1		34	10.2 +02.6	N 22 23.4 +00.0		128	55.0 +02.5	S 08 41.2 +00.0		05
06	8	25.5 +01.5	N 21 49.5 -00.1		49	12.8 +02.7	N 22 23.4 +00.0		143	57.5 +02.5	S 08 41.2 +00.0		06
07	23	27.0 +01.4	N 21 49.4 -00.2		64	15.5 +02.6	N 22 23.4 +00.0		159	00.0 +02.6	S 08 41.2 +00.0		07
08	38	28.4 +01.5	N 21 49.2 -00.1		79	18.1 +02.7	N 22 23.4 +00.0		174	02.6 +02.5	S 08 41.2 +00.0		08
09	53	29.9 +01.4	N 21 49.1 -00.1		94	20.8 +02.6	N 22 23.4 +00.0		189	05.1 +02.5	S 08 41.2 +00.1		09
10	68	31.3 +01.5	N 21 49.0 -00.1		109	23.4 +02.7	N 22 23.4 +00.0		204	07.6 +02.6	S 08 41.3 +00.0		10
11	83	32.8 +01.4	N 21 48.9 -00.1		124	26.1 +02.6	N 22 23.4 -00.1		219	10.2 +02.5	S 08 41.3 +00.0		11
12	98	34.2 +01.5	N 21 48.8 -00.1		139	28.7 +02.7	N 22 23.3 +00.0		234	12.7 +02.5	S 08 41.3 +00.0		12
13	113	35.7 +01.5	N 21 48.7 -00.1		154	31.4 +02.6	N 22 23.3 +00.0		249	15.2 +02.6	S 08 41.3 +00.0		13
14	128	37.2 +01.4	N 21 48.6 -00.1		169	34.0 +02.7	N 22 23.3 +00.0		264	17.8 +02.5	S 08 41.3 +00.1		14
15	143	38.6 +01.5	N 21 48.5 -00.1		184	36.7 +02.6	N 22 23.3 +00.0		279	20.3 +02.5	S 08 41.4 +00.0		15
16	158	40.1 +01.4	N 21 48.4 -00.2		199	39.3 +02.7	N 22 23.3 +00.0		294	22.8 +02.5	S 08 41.4 +00.0		16
17	173	41.5 +01.5	N 21 48.2 -00.1		214	42.0 +02.7	N 22 23.3 +00.0		309	25.3 +02.6	S 08 41.4 +00.0		17
18	188	43.0 +01.5	N 21 48.1 -00.1		229	44.7 +02.6	N 22 23.3 +00.0		324	27.9 +02.5	S 08 41.4 +00.1		18
19	203	44.5 +01.4	N 21 48.0 -00.1		244	47.3 +02.7	N 22 23.3 +00.0		339	30.4 +02.5	S 08 41.5 +00.0		19
20	218	45.9 +01.5	N 21 47.9 -00.1		259	50.0 +02.6	N 22 23.3 -00.1		354	32.9 +02.6	S 08 41.5 +00.0		20
21	233	47.4 +01.5	N 21 47.8 -00.1		274	52.6 +02.7	N 22 23.2 +00.0		9	35.5 +02.5	S 08 41.5 +00.0		21
22	248	48.9 +01.4	N 21 47.7 -00.1		289	55.3 +02.6	N 22 23.2 +00.0		24	38.0 +02.5	S 08 41.5 +00.0		22
23	263	50.3 +01.5	N 21 47.6 -00.1		304	57.9 +02.7	N 22 23.2 +00.0		39	40.5 +02.5	S 08 41.5 +00.1		23
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 00'4 00'4 00'4 00'4 00'4 00'4				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 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 239° 239° 239° 239° 239° 239°				SHA 280° 280° 280° 280° 280° 280°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 05:26				Greenwich Culmination Time: 02:43				Greenwich Culmination Time: 20:21				

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 06.0 +00.1	S 14 11.6 +00.8	145 17.8 -00.8	S 24 24.9 +00.4	200 33.4 -24.3	S 09 34.6 +13.5	00						
01	199 06.1 +00.0	S 14 12.4 +00.8	160 17.0 -00.8	S 24 25.3 +00.4	215 09.1 -24.4	S 09 48.1 +13.5	01						
02	214 06.1 +00.0	S 14 13.2 +00.8	175 16.2 -00.8	S 24 25.7 +00.5	229 44.7 -24.4	S 10 01.6 +13.4	02						
03	229 06.1 +00.0	S 14 14.0 +00.8	190 15.4 -00.8	S 24 26.2 +00.4	244 20.3 -24.5	S 10 15.0 +13.4	03						
04	244 06.1 +00.1	S 14 14.8 +00.8	205 14.6 -00.8	S 24 26.6 +00.4	258 55.8 -24.5	S 10 28.4 +13.4	04						
05	259 06.2 +00.0	S 14 15.6 +00.8	220 13.8 -00.8	S 24 27.0 +00.4	273 31.3 -24.6	S 10 41.8 +13.3	05						
06	274 06.2 +00.0	S 14 16.4 +00.8	235 13.0 -00.9	S 24 27.4 +00.4	288 06.7 -24.6	S 10 55.1 +13.3	06						
07	289 06.2 +00.0	S 14 17.2 +00.8	250 12.1 -00.8	S 24 27.8 +00.4	302 42.1 -24.6	S 11 08.4 +13.3	07						
08	304 06.2 +00.0	S 14 18.0 +00.9	265 11.3 -00.8	S 24 28.2 +00.4	317 17.5 -24.7	S 11 21.7 +13.2	08						
09	319 06.2 +00.1	S 14 18.9 +00.8	280 10.5 -00.8	S 24 28.6 +00.5	331 52.8 -24.8	S 11 34.9 +13.2	09						
10	334 06.3 +00.0	S 14 19.7 +00.8	295 09.7 -00.8	S 24 29.1 +00.4	346 28.0 -24.8	S 11 48.1 +13.1	10						
11	349 06.3 +00.0	S 14 20.5 +00.8	310 08.9 -00.8	S 24 29.5 +00.4	1 03.2 -24.8	S 12 01.2 +13.1	11						
12	4 06.3 +00.0	S 14 21.3 +00.8	325 08.1 -00.8	S 24 29.9 +00.4	15 38.4 -24.9	S 12 14.3 +13.0	12						
13	19 06.3 +00.0	S 14 22.1 +00.8	340 07.3 -00.8	S 24 30.3 +00.4	30 13.5 -25.0	S 12 27.3 +13.1	13						
14	34 06.3 +00.0	S 14 22.9 +00.8	355 06.5 -00.8	S 24 30.7 +00.4	44 48.5 -25.0	S 12 40.4 +12.9	14						
15	49 06.3 +00.1	S 14 23.7 +00.8	10 05.7 -00.8	S 24 31.1 +00.4	59 23.5 -25.1	S 12 53.3 +13.0	15						
16	64 06.4 +00.0	S 14 24.5 +00.8	25 04.9 -00.8	S 24 31.5 +00.4	73 58.4 -25.1	S 13 06.3 +12.8	16						
17	79 06.4 +00.0	S 14 25.3 +00.8	40 04.1 -00.8	S 24 31.9 +00.4	88 33.3 -25.2	S 13 19.1 +12.9	17						
18	94 06.4 +00.0	S 14 26.1 +00.8	55 03.3 -00.8	S 24 32.3 +00.4	103 08.1 -25.2	S 13 32.0 +12.8	18						
19	109 06.4 +00.0	S 14 26.9 +00.8	70 02.5 -00.9	S 24 32.7 +00.4	117 42.9 -25.3	S 13 44.8 +12.7	19						
20	124 06.4 +00.1	S 14 27.7 +00.8	85 01.6 -00.8	S 24 33.1 +00.4	132 17.6 -25.4	S 13 57.5 +12.7	20						
21	139 06.5 +00.0	S 14 28.5 +00.8	100 00.8 -00.8	S 24 33.5 +00.4	146 52.2 -25.4	S 14 10.2 +12.6	21						
22	154 06.5 +00.0	S 14 29.3 +00.8	115 00.0 -00.8	S 24 33.9 +00.4	161 26.8 -25.5	S 14 22.8 +12.6	22						
23	169 06.5 +00.0	S 14 30.1 +00.8	129 59.2 -00.8	S 24 34.3 +00.4	176 01.3 -25.5	S 14 35.4 +12.5	23						
UT	02 06 10 14 18 22		UT	02 06 10 14 18 22		UT	02 06 10 14 18 22						
SD	16'1 16'1 16'1 16'1 16'1 16'1		SD	00'1 00'1 00'1 00'1 00'1 00'1		SD	14'7 14'7 14'7 14'7 14'7 14'8						
HP	00'1 00'1 00'1 00'1 00'1 00'1		HP	00'1 00'1 00'1 00'1 00'1 00'1		HP	54'0 54'0 54'1 54'1 54'1 54'1						
SHA	144° 144° 144° 144° 144° 143°		SHA	105° 105° 105° 105° 105° 104°		SHA	160° 158° 156° 154° 153° 151°						
Greenwich Culmination Time: 11:43			Greenwich Culmination Time: 14:19			Greenwich Culmination Time: 10:55							

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	278 51.8 +01.5	N 21 47.5 -00.1	320 00.6 +02.6	N 22 23.2 +00.0	54 43.0 +02.6	S 08 41.6 +00.0	00						
01	293 53.3 +01.4	N 21 47.4 -00.2	335 03.2 +02.7	N 22 23.2 +00.0	69 45.6 +02.5	S 08 41.6 +00.0	01						
02	308 54.7 +01.5	N 21 47.2 -00.1	350 05.9 +02.6	N 22 23.2 +00.0	84 48.1 +02.5	S 08 41.6 +00.0	02						
03	323 56.2 +01.5	N 21 47.1 -00.1	5 08.5 +02.7	N 22 23.2 +00.0	99 50.6 +02.6	S 08 41.6 +00.0	03						
04	338 57.7 +01.5	N 21 47.0 -00.1	20 11.2 +02.7	N 22 23.2 -00.1	114 53.2 +02.5	S 08 41.6 +00.1	04						
05	353 59.2 +01.4	N 21 46.9 -00.1	35 13.9 +02.6	N 22 23.1 +00.0	129 55.7 +02.5	S 08 41.7 +00.0	05						
06	9 00.6 +01.5	N 21 46.8 -00.1	50 16.5 +02.7	N 22 23.1 +00.0	144 58.2 +02.5	S 08 41.7 +00.0	06						
07	24 02.1 +01.5	N 21 46.7 -00.1	65 19.2 +02.6	N 22 23.1 +00.0	160 00.7 +02.6	S 08 41.7 +00.0	07						
08	39 03.6 +01.4	N 21 46.6 -00.1	80 21.8 +02.7	N 22 23.1 +00.0	175 03.3 +02.5	S 08 41.7 +00.0	08						
09	54 05.0 +01.5	N 21 46.5 -00.1	95 24.5 +02.7	N 22 23.1 +00.0	190 05.8 +02.5	S 08 41.7 +00.1	09						
10	69 06.5 +01.5	N 21 46.4 -00.1	110 27.2 +02.6	N 22 23.1 +00.0	205 08.3 +02.6	S 08 41.8 +00.0	10						
11	84 08.0 +01.5	N 21 46.3 -00.2	125 29.8 +02.7	N 22 23.1 +00.0	220 10.9 +02.5	S 08 41.8 +00.0	11						
12	99 09.5 +01.4	N 21 46.1 -00.1	140 32.5 +02.6	N 22 23.1 +00.0	235 13.4 +02.5	S 08 41.8 +00.0	12						
13	114 10.9 +01.5	N 21 46.0 -00.1	155 35.1 +02.7	N 22 23.1 -00.1	250 15.9 +02.5	S 08 41.8 +00.0	13						
14	129 12.4 +01.5	N 21 45.9 -00.1	170 37.8 +02.7	N 22 23.0 +00.0	265 18.4 +02.6	S 08 41.8 +00.1	14						
15	144 13.9 +01.5	N 21 45.8 -00.1	185 40.5 +02.6	N 22 23.0 +00.0	280 21.0 +02.5	S 08 41.9 +00.0	15						
16	159 15.4 +01.5	N 21 45.7 -00.1	200 43.1 +02.7	N 22 23.0 +00.0	295 23.5 +02.5	S 08 41.9 +00.0	16						
17	174 16.9 +01.4	N 21 45.6 -00.1	215 45.8 +02.6	N 22 23.0 +00.0	310 26.0 +02.5	S 08 41.9 +00.0	17						
18	189 18.3 +01.5	N 21 45.5 -00.1	230 48.4 +02.7	N 22 23.0 +00.0	325 28.5 +02.6	S 08 41.9 +00.0	18						
19	204 19.8 +01.5	N 21 45.4 -00.1	245 51.1 +02.7	N 22 23.0 +00.0	340 31.1 +02.5	S 08 41.9 +00.0	19						
20	219 21.3 +01.5	N 21 45.3 -00.1	260 53.8 +02.6	N 22 23.0 +00.0	355 33.6 +02.5	S 08 41.9 +00.1	20						
21	234 22.8 +01.5	N 21 45.2 -00.1	275 56.4 +02.7	N 22 23.0 -00.1	10 36.1 +02.6	S 08 42.0 +00.0	21						
22	249 24.3 +01.5	N 21 45.1 -00.2	290 59.1 +02.7	N 22 22.9 +00.0	25 38.7 +02.5	S 08 42.0 +00.0	22						
23	264 25.8 +01.4	N 21 44.9 -00.1	306 01.8 +02.6	N 22 22.9 +00.0	40 41.2 +02.5	S 08 42.0 +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	00'1 00'1 00'1 00'1 00'1 00'1		SD	00'4 00'4 00'4 00'4 00'4 00'4		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	00'0 00'0 00'0 00'0 00'0 00'0		HP	00'0 00'0 00'0 00'0 00'0 00'0						
SHA	239° 239° 239° 239° 239° 239°		SHA	280° 280° 280° 280° 280° 280°		SHA	015° 015° 015° 015° 015° 015°						
Greenwich Culmination Time: 05:24			Greenwich Culmination Time: 02:39			Greenwich Culmination Time: 20:17							

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184	06.5+00.0	S 14 30.9+00.8		144	58.4-00.8	S 24 34.7+00.4		190	35.8-25.6	S 14 47.9+12.5		00
01	199	06.5+00.0	S 14 31.7+00.8		159	57.6-00.8	S 24 35.1+00.4		205	10.2-25.7	S 15 00.4+12.4		01
02	214	06.5+00.0	S 14 32.5+00.8		174	56.8-00.8	S 24 35.5+00.4		219	44.5-25.7	S 15 12.8+12.4		02
03	229	06.5+00.1	S 14 33.3+00.8		189	56.0-00.8	S 24 35.9+00.4		234	18.8-25.8	S 15 25.2+12.3		03
04	244	06.6+00.0	S 14 34.1+00.8		204	55.2-00.9	S 24 36.3+00.4		248	53.0-25.9	S 15 37.5+12.3		04
05	259	06.6+00.0	S 14 34.9+00.8		219	54.3-00.8	S 24 36.7+00.3		263	27.1-25.9	S 15 49.8+12.2		05
06	274	06.6+00.0	S 14 35.7+00.8		234	53.5-00.8	S 24 37.0+00.4		278	01.2-26.0	S 16 02.0+12.1		06
07	289	06.6+00.0	S 14 36.5+00.7		249	52.7-00.8	S 24 37.4+00.4		292	35.2-26.1	S 16 14.1+12.1		07
08	304	06.6+00.0	S 14 37.2+00.8		264	51.9-00.8	S 24 37.8+00.4		307	09.1-26.1	S 16 26.2+12.1		08
09	319	06.6+00.0	S 14 38.0+00.8		279	51.1-00.8	S 24 38.2+00.4		321	43.0-26.2	S 16 38.3+11.9		09
10	334	06.6+00.0	S 14 38.8+00.8		294	50.3-00.8	S 24 38.6+00.4		336	16.8-26.3	S 16 50.2+11.9		10
11	349	06.6+00.0	S 14 39.6+00.8		309	49.5-00.8	S 24 39.0+00.4		350	50.5-26.3	S 17 02.1+11.9		11
12	4	06.6+00.1	S 14 40.4+00.8		324	48.7-00.9	S 24 39.4+00.3		5	24.2-26.4	S 17 14.0+11.7		12
13	19	06.7+00.0	S 14 41.2+00.8		339	47.8-00.8	S 24 39.7+00.4		19	57.8-26.5	S 17 25.7+11.7		13
14	34	06.7+00.0	S 14 42.0+00.8		354	47.0-00.8	S 24 40.1+00.4		34	31.3-26.6	S 17 37.4+11.7		14
15	49	06.7+00.0	S 14 42.8+00.8		9	46.2-00.8	S 24 40.5+00.4		49	04.7-26.6	S 17 49.1+11.5		15
16	64	06.7+00.0	S 14 43.6+00.8		24	45.4-00.8	S 24 40.9+00.3		63	38.1-26.7	S 18 00.6+11.6		16
17	79	06.7+00.0	S 14 44.4+00.8		39	44.6-00.8	S 24 41.2+00.4		78	11.4-26.8	S 18 12.2+11.4		17
18	94	06.7+00.0	S 14 45.2+00.8		54	43.8-00.9	S 24 41.6+00.4		92	44.6-26.8	S 18 23.6+11.3		18
19	109	06.7+00.0	S 14 46.0+00.8		69	42.9-00.8	S 24 42.0+00.4		107	17.8-27.0	S 18 34.9+11.3		19
20	124	06.7+00.0	S 14 46.8+00.7		84	42.1-00.8	S 24 42.4+00.3		121	50.8-27.0	S 18 46.2+11.3		20
21	139	06.7+00.0	S 14 47.5+00.8		99	41.3-00.8	S 24 42.7+00.4		136	23.8-27.1	S 18 57.5+11.1		21
22	154	06.7+00.0	S 14 48.3+00.8		114	40.5-00.8	S 24 43.1+00.4		150	56.7-27.1	S 19 08.6+11.1		22
23	169	06.7+00.1	S 14 49.1+00.8		129	39.7-00.8	S 24 43.5+00.3		165	29.6-27.3	S 19 19.7+11.0		23
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 16'1 16'1 16'1 16'1 16'1 16'1				SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 14'8 14'8 14'8 14'8 14'8 14'8				
	HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 54'2 54'2 54'2 54'3 54'3 54'4				
	SHA 143° 143° 143° 143° 143° 142°				SHA 104° 104° 104° 103° 103° 103°				SHA 149° 147° 145° 143° 141° 139°				
	Greenwich Culmination Time: 11:43				Greenwich Culmination Time: 14:20				Greenwich Culmination Time: 11:37				

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	279	27.2+01.5	N 21 44.8-00.1		321	04.4+02.7	N 22 22.9+00.0		55	43.7+02.5	S 08 42.0+00.0		00
01	294	28.7+01.5	N 21 44.7-00.1		336	07.1+02.6	N 22 22.9+00.0		70	46.2+02.6	S 08 42.0+00.1		01
02	309	30.2+01.5	N 21 44.6-00.1		351	09.7+02.7	N 22 22.9+00.0		85	48.8+02.5	S 08 42.1+00.0		02
03	324	31.7+01.5	N 21 44.5-00.1		6	12.4+02.7	N 22 22.9+00.0		100	51.3+02.5	S 08 42.1+00.0		03
04	339	33.2+01.5	N 21 44.4-00.1		21	15.1+02.6	N 22 22.9+00.0		115	53.8+02.5	S 08 42.1+00.0		04
05	354	34.7+01.5	N 21 44.3-00.1		36	17.7+02.7	N 22 22.9-00.1		130	56.3+02.6	S 08 42.1+00.0		05
06	9	36.2+01.5	N 21 44.2-00.1		51	20.4+02.7	N 22 22.8+00.0		145	58.9+02.5	S 08 42.1+00.1		06
07	24	37.7+01.5	N 21 44.1-00.1		66	23.1+02.6	N 22 22.8+00.0		161	01.4+02.5	S 08 42.2+00.0		07
08	39	39.2+01.5	N 21 44.0-00.1		81	25.7+02.7	N 22 22.8+00.0		176	03.9+02.5	S 08 42.2+00.0		08
09	54	40.7+01.4	N 21 43.9-00.1		96	28.4+02.7	N 22 22.8+00.0		191	06.4+02.5	S 08 42.2+00.0		09
10	69	42.1+01.5	N 21 43.8-00.1		111	31.1+02.6	N 22 22.8+00.0		206	08.9+02.6	S 08 42.2+00.0		10
11	84	43.6+01.5	N 21 43.7-00.2		126	33.7+02.7	N 22 22.8+00.0		221	11.5+02.5	S 08 42.2+00.0		11
12	99	45.1+01.5	N 21 43.5-00.1		141	36.4+02.7	N 22 22.8+00.0		236	14.0+02.5	S 08 42.2+00.1		12
13	114	46.6+01.5	N 21 43.4-00.1		156	39.1+02.6	N 22 22.8-00.1		251	16.5+02.5	S 08 42.3+00.0		13
14	129	48.1+01.5	N 21 43.3-00.1		171	41.7+02.7	N 22 22.7+00.0		266	19.0+02.6	S 08 42.3+00.0		14
15	144	49.6+01.5	N 21 43.2-00.1		186	44.4+02.7	N 22 22.7+00.0		281	21.6+02.5	S 08 42.3+00.0		15
16	159	51.1+01.5	N 21 43.1-00.1		201	47.1+02.7	N 22 22.7+00.0		296	24.1+02.5	S 08 42.3+00.0		16
17	174	52.6+01.5	N 21 43.0-00.1		216	49.8+02.6	N 22 22.7+00.0		311	26.6+02.5	S 08 42.3+00.0		17
18	189	54.1+01.5	N 21 42.9-00.1		231	52.4+02.7	N 22 22.7+00.0		326	29.1+02.6	S 08 42.3+00.1		18
19	204	55.6+01.5	N 21 42.8-00.1		246	55.1+02.7	N 22 22.7+00.0		341	31.7+02.5	S 08 42.4+00.0		19
20	219	57.1+01.5	N 21 42.7-00.1		261	57.8+02.6	N 22 22.7+00.0		356	34.2+02.5	S 08 42.4+00.0		20
21	234	58.6+01.5	N 21 42.6-00.1		277	00.4+02.7	N 22 22.7-00.1		11	36.7+02.5	S 08 42.4+00.0		21
22	250	00.1+01.5	N 21 42.5-00.1		292	03.1+02.7	N 22 22.6+00.0		26	39.2+02.5	S 08 42.4+00.0		22
23	265	01.6+01.5	N 21 42.4-00.1		307	05.8+02.6	N 22 22.6+00.0		41	41.7+02.6	S 08 42.4+00.0		23
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 00'4 00'4 00'4 00'4 00'4 00'4				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 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 239° 239° 239° 238° 238° 238°				SHA 280° 280° 280° 280° 280° 280°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 05:21				Greenwich Culmination Time: 02:35				Greenwich Culmination Time: 20:13				



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 06.8 +00.0	S	14 49.9 +00.8	144 38.9 -00.9	S	24 43.8 +00.4	180 02.3 -27.3	S	19 30.7 +10.9	00			
01	199 06.8 +00.0	S	14 50.7 +00.8	159 38.0 -00.8	S	24 44.2 +00.4	194 35.0 -27.4	S	19 41.6 +10.8	01			
02	214 06.8 +00.0	S	14 51.5 +00.8	174 37.2 -00.8	S	24 44.6 +00.3	209 07.6 -27.5	S	19 52.4 +10.8	02			
03	229 06.8 +00.0	S	14 52.3 +00.8	189 36.4 -00.8	S	24 44.9 +00.4	223 40.1 -27.5	S	20 03.2 +10.7	03			
04	244 06.8 +00.0	S	14 53.1 +00.8	204 35.6 -00.8	S	24 45.3 +00.3	238 12.6 -27.7	S	20 13.9 +10.6	04			
05	259 06.8 +00.0	S	14 53.9 +00.7	219 34.8 -00.8	S	24 45.6 +00.4	252 44.9 -27.7	S	20 24.5 +10.5	05			
06	274 06.8 +00.0	S	14 54.6 +00.8	234 34.0 -00.9	S	24 46.0 +00.4	267 17.2 -27.8	S	20 35.0 +10.4	06			
07	289 06.8 +00.0	S	14 55.4 +00.8	249 33.1 -00.8	S	24 46.4 +00.3	281 49.4 -27.9	S	20 45.4 +10.3	07			
08	304 06.8 +00.0	S	14 56.2 +00.8	264 32.3 -00.8	S	24 46.7 +00.4	296 21.5 -27.9	S	20 55.7 +10.3	08			
09	319 06.8 +00.0	S	14 57.0 +00.8	279 31.5 -00.8	S	24 47.1 +00.3	310 53.6 -28.1	S	21 06.0 +10.2	09			
10	334 06.8 +00.0	S	14 57.8 +00.8	294 30.7 -00.8	S	24 47.4 +00.4	325 25.5 -28.1	S	21 16.2 +10.1	10			
11	349 06.8 +00.0	S	14 58.6 +00.7	309 29.9 -00.9	S	24 47.8 +00.3	339 57.4 -28.2	S	21 26.3 +10.0	11			
12	4 06.8 +00.0	S	14 59.3 +00.8	324 29.0 -00.8	S	24 48.1 +00.4	354 29.2 -28.3	S	21 36.3 +09.9	12			
13	19 06.8 +00.0	S	15 00.1 +00.8	339 28.2 -00.8	S	24 48.5 +00.3	9 00.9 -28.4	S	21 46.2 +09.8	13			
14	34 06.8 +00.0	S	15 00.9 +00.8	354 27.4 -00.8	S	24 48.8 +00.4	23 32.5 -28.5	S	21 56.0 +09.7	14			
15	49 06.8 +00.0	S	15 01.7 +00.8	9 26.6 -00.8	S	24 49.2 +00.3	38 04.0 -28.5	S	22 05.7 +09.6	15			
16	64 06.8 +00.0	S	15 02.5 +00.8	24 25.8 -00.9	S	24 49.5 +00.4	52 35.5 -28.6	S	22 15.3 +09.6	16			
17	79 06.8 +00.0	S	15 03.3 +00.7	39 24.9 -00.8	S	24 49.9 +00.3	67 06.9 -28.8	S	22 24.9 +09.4	17			
18	94 06.8 +00.0	S	15 04.0 +00.8	54 24.1 -00.8	S	24 50.2 +00.4	81 38.1 -28.8	S	22 34.3 +09.4	18			
19	109 06.8 +00.0	S	15 04.8 +00.8	69 23.3 -00.8	S	24 50.6 +00.3	96 09.3 -28.9	S	22 43.7 +09.2	19			
20	124 06.8 +00.0	S	15 05.6 +00.8	84 22.5 -00.8	S	24 50.9 +00.3	110 40.4 -28.9	S	22 52.9 +09.2	20			
21	139 06.8 +00.0	S	15 06.4 +00.8	99 21.7 -00.9	S	24 51.2 +00.4	125 11.5 -29.1	S	23 02.1 +09.0	21			
22	154 06.8 +00.0	S	15 07.2 +00.7	114 20.8 -00.8	S	24 51.6 +00.3	139 42.4 -29.1	S	23 11.1 +09.0	22			
23	169 06.8 +00.0	S	15 07.9 +00.8	129 20.0 -00.8	S	24 51.9 +00.4	154 13.3 -29.3	S	23 20.1 +08.8	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'1 16'1 16'1 16'1 16'1 16'1			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 14'8 14'8 14'8 14'9 14'9 14'9						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 54'4 54'5 54'5 54'6 54'6 54'7						
	SHA 142° 142° 142° 142° 142° 141°			SHA 103° 103° 102° 102° 102° 102°			SHA 137° 135° 133° 131° 129° 127°						
	Greenwich Culmination Time: 11:43			Greenwich Culmination Time: 14:22			Greenwich Culmination Time: 12:22						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	280 03.1 +01.6	N	21 42.3 -00.1	322 08.4 +02.7	N	22 22.6 +00.0	56 44.3 +02.5	S	08 42.4 +00.1	00			
01	295 04.7 +01.5	N	21 42.2 -00.1	337 11.1 +02.7	N	22 22.6 +00.0	71 46.8 +02.5	S	08 42.5 +00.0	01			
02	310 06.2 +01.5	N	21 42.1 -00.1	352 13.8 +02.7	N	22 22.6 +00.0	86 49.3 +02.5	S	08 42.5 +00.0	02			
03	325 07.7 +01.5	N	21 42.0 -00.2	7 16.5 +02.6	N	22 22.6 +00.0	101 51.8 +02.5	S	08 42.5 +00.0	03			
04	340 09.2 +01.5	N	21 41.8 -00.1	22 19.1 +02.7	N	22 22.6 +00.0	116 54.3 +02.6	S	08 42.5 +00.0	04			
05	355 10.7 +01.5	N	21 41.7 -00.1	37 21.8 +02.7	N	22 22.6 -00.1	131 56.9 +02.5	S	08 42.5 +00.0	05			
06	10 12.2 +01.5	N	21 41.6 -00.1	52 24.5 +02.7	N	22 22.5 +00.0	146 59.4 +02.5	S	08 42.5 +00.1	06			
07	25 13.7 +01.5	N	21 41.5 -00.1	67 27.2 +02.6	N	22 22.5 +00.0	162 01.9 +02.5	S	08 42.6 +00.0	07			
08	40 15.2 +01.5	N	21 41.4 -00.1	82 29.8 +02.7	N	22 22.5 +00.0	177 04.4 +02.5	S	08 42.6 +00.0	08			
09	55 16.7 +01.5	N	21 41.3 -00.1	97 32.5 +02.7	N	22 22.5 +00.0	192 06.9 +02.6	S	08 42.6 +00.0	09			
10	70 18.2 +01.6	N	21 41.2 -00.1	112 35.2 +02.7	N	22 22.5 +00.0	207 09.5 +02.5	S	08 42.6 +00.0	10			
11	85 19.8 +01.5	N	21 41.1 -00.1	127 37.9 +02.6	N	22 22.5 +00.0	222 12.0 +02.5	S	08 42.6 +00.0	11			
12	100 21.3 +01.5	N	21 41.0 -00.1	142 40.5 +02.7	N	22 22.5 -00.1	237 14.5 +02.5	S	08 42.6 +00.1	12			
13	115 22.8 +01.5	N	21 40.9 -00.1	157 43.2 +02.7	N	22 22.4 +00.0	252 17.0 +02.5	S	08 42.7 +00.0	13			
14	130 24.3 +01.5	N	21 40.8 -00.1	172 45.9 +02.7	N	22 22.4 +00.0	267 19.5 +02.6	S	08 42.7 +00.0	14			
15	145 25.8 +01.5	N	21 40.7 -00.1	187 48.6 +02.6	N	22 22.4 +00.0	282 22.1 +02.5	S	08 42.7 +00.0	15			
16	160 27.3 +01.5	N	21 40.6 -00.1	202 51.2 +02.7	N	22 22.4 +00.0	297 24.6 +02.5	S	08 42.7 +00.0	16			
17	175 28.8 +01.6	N	21 40.5 -00.1	217 53.9 +02.7	N	22 22.4 +00.0	312 27.1 +02.5	S	08 42.7 +00.0	17			
18	190 30.4 +01.5	N	21 40.4 -00.1	232 56.6 +02.7	N	22 22.4 +00.0	327 29.6 +02.5	S	08 42.7 +00.1	18			
19	205 31.9 +01.5	N	21 40.3 -00.1	247 59.3 +02.7	N	22 22.4 +00.0	342 32.1 +02.6	S	08 42.8 +00.0	19			
20	220 33.4 +01.5	N	21 40.2 -00.1	263 02.0 +02.6	N	22 22.4 -00.1	357 34.7 +02.5	S	08 42.8 +00.0	20			
21	235 34.9 +01.6	N	21 40.1 -00.1	278 04.6 +02.7	N	22 22.3 +00.0	12 37.2 +02.5	S	08 42.8 +00.0	21			
22	250 36.5 +01.5	N	21 40.0 -00.1	293 07.3 +02.7	N	22 22.3 +00.0	27 39.7 +02.5	S	08 42.8 +00.0	22			
23	265 38.0 +01.5	N	21 39.9 -00.1	308 10.0 +02.7	N	22 22.3 +00.0	42 42.2 +02.5	S	08 42.8 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			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 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 238° 238° 238° 238° 238° 238°			SHA 280° 280° 280° 280° 280° 280°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 05:19			Greenwich Culmination Time: 02:30			Greenwich Culmination Time: 20:09						

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	06.8 +00.0	S 15 08.7 +00.8		144	19.2 -00.8	S 24 52.3 +00.3		168	44.0 -29.3	S 23 28.9 +08.7		00
01	199	06.8 +00.0	S 15 09.5 +00.8		159	18.4 -00.9	S 24 52.6 +00.3		183	14.7 -29.4	S 23 37.6 +08.7		01
02	214	06.8 +00.0	S 15 10.3 +00.7		174	17.5 -00.8	S 24 52.9 +00.4		197	45.3 -29.5	S 23 46.3 +08.5		02
03	229	06.8 +00.0	S 15 11.0 +00.8		189	16.7 -00.8	S 24 53.3 +00.3		212	15.8 -29.5	S 23 54.8 +08.4		03
04	244	06.8 +00.0	S 15 11.8 +00.8		204	15.9 -00.8	S 24 53.6 +00.3		226	46.3 -29.7	S 24 03.2 +08.4		04
05	259	06.8 +00.0	S 15 12.6 +00.8		219	15.1 -00.8	S 24 53.9 +00.4		241	16.6 -29.7	S 24 11.6 +08.2		05
06	274	06.8 +00.0	S 15 13.4 +00.8		234	14.3 -00.9	S 24 54.3 +00.3		255	46.9 -29.8	S 24 19.8 +08.1		06
07	289	06.8 +00.0	S 15 14.2 +00.7		249	13.4 -00.8	S 24 54.6 +00.3		270	17.1 -29.9	S 24 27.9 +07.9		07
08	304	06.8 +00.0	S 15 14.9 +00.8		264	12.6 -00.8	S 24 54.9 +00.3		284	47.2 -30.0	S 24 35.8 +07.9		08
09	319	06.8 +00.0	S 15 15.7 +00.8		279	11.8 -00.8	S 24 55.2 +00.4		299	17.2 -30.1	S 24 43.7 +07.8		09
10	334	06.8 +00.0	S 15 16.5 +00.7		294	11.0 -00.9	S 24 55.6 +00.3		313	47.1 -30.2	S 24 51.5 +07.6		10
11	349	06.8 +00.0	S 15 17.2 +00.8		309	10.1 -00.8	S 24 55.9 +00.3		328	16.9 -30.2	S 24 59.1 +07.6		11
12	4	06.8 -00.1	S 15 18.0 +00.8		324	09.3 -00.8	S 24 56.2 +00.3		342	46.7 -30.3	S 25 06.7 +07.4		12
13	19	06.7 +00.0	S 15 18.8 +00.8		339	08.5 -00.8	S 24 56.5 +00.4		357	16.4 -30.5	S 25 14.1 +07.3		13
14	34	06.7 +00.0	S 15 19.6 +00.7		354	07.7 -00.9	S 24 56.9 +00.3		11	45.9 -30.4	S 25 21.4 +07.2		14
15	49	06.7 +00.0	S 15 20.3 +00.8		9	06.8 -00.8	S 24 57.2 +00.3		26	15.5 -30.6	S 25 28.6 +07.0		15
16	64	06.7 +00.0	S 15 21.1 +00.8		24	06.0 -00.8	S 24 57.5 +00.3		40	44.9 -30.7	S 25 35.6 +07.0		16
17	79	06.7 +00.0	S 15 21.9 +00.8		39	05.2 -00.8	S 24 57.8 +00.3		55	14.2 -30.7	S 25 42.6 +06.8		17
18	94	06.7 +00.0	S 15 22.7 +00.7		54	04.4 -00.9	S 24 58.1 +00.3		69	43.5 -30.8	S 25 49.4 +06.7		18
19	109	06.7 +00.0	S 15 23.4 +00.8		69	03.5 -00.8	S 24 58.4 +00.3		84	12.7 -30.9	S 25 56.1 +06.5		19
20	124	06.7 +00.0	S 15 24.2 +00.8		84	02.7 -00.8	S 24 58.7 +00.4		98	41.8 -31.0	S 26 02.6 +06.5		20
21	139	06.7 +00.0	S 15 25.0 +00.7		99	01.9 -00.9	S 24 59.1 +00.3		113	10.8 -31.0	S 26 09.1 +06.3		21
22	154	06.7 +00.0	S 15 25.7 +00.8		114	01.0 -00.8	S 24 59.4 +00.3		127	39.8 -31.2	S 26 15.4 +06.2		22
23	169	06.7 +00.0	S 15 26.5 +00.8		129	00.2 -00.8	S 24 59.7 +00.3		142	08.6 -31.2	S 26 21.6 +06.1		23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 16°1 16°1 16°1 16°1 16°1 16°1				SD 00°1 00°1 00°1 00°1 00°1 00°1				SD 14°9 14°9 14°9 15°0 15°0 15°0				
	HP 00°1 00°1 00°1 00°1 00°1 00°1				HP 00°1 00°1 00°1 00°1 00°1 00°1				HP 54°7 54°8 54°8 54°9 55°0 55°0				
	SHA 141° 141° 141° 141° 141° 140°				SHA 101° 101° 101° 101° 101° 100°				SHA 125° 123° 121° 118° 116° 114°				
	Greenwich Culmination Time: 11:43				Greenwich Culmination Time: 14:23				Greenwich Culmination Time: 13:11				

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	280	39.5 +01.5	N 21 39.8 -00.1		323	12.7 +02.6	N 22 22.3 +00.0		57	44.7 +02.5	S 08 42.8 +00.0		00
01	295	41.0 +01.6	N 21 39.7 -00.1		338	15.3 +02.7	N 22 22.3 +00.0		72	47.2 +02.6	S 08 42.8 +00.1		01
02	310	42.6 +01.5	N 21 39.6 -00.2		353	18.0 +02.7	N 22 22.3 +00.0		87	49.8 +02.5	S 08 42.9 +00.0		02
03	325	44.1 +01.5	N 21 39.4 -00.1		8	20.7 +02.7	N 22 22.3 -00.1		102	52.3 +02.5	S 08 42.9 +00.0		03
04	340	45.6 +01.5	N 21 39.3 -00.1		23	23.4 +02.7	N 22 22.2 +00.0		117	54.8 +02.5	S 08 42.9 +00.0		04
05	355	47.1 +01.6	N 21 39.2 -00.1		38	26.1 +02.7	N 22 22.2 +00.0		132	57.3 +02.5	S 08 42.9 +00.0		05
06	10	48.7 +01.5	N 21 39.1 -00.1		53	28.8 +02.6	N 22 22.2 +00.0		147	59.8 +02.5	S 08 42.9 +00.0		06
07	25	50.2 +01.5	N 21 39.0 -00.1		68	31.4 +02.7	N 22 22.2 +00.0		163	02.3 +02.6	S 08 42.9 +00.1		07
08	40	51.7 +01.6	N 21 38.9 -00.1		83	34.1 +02.7	N 22 22.2 +00.0		178	04.9 +02.5	S 08 43.0 +00.0		08
09	55	53.3 +01.5	N 21 38.8 -00.1		98	36.8 +02.7	N 22 22.2 +00.0		193	07.4 +02.5	S 08 43.0 +00.0		09
10	70	54.8 +01.5	N 21 38.7 -00.1		113	39.5 +02.7	N 22 22.2 +00.0		208	09.9 +02.5	S 08 43.0 +00.0		10
11	85	56.3 +01.6	N 21 38.6 -00.1		128	42.2 +02.6	N 22 22.2 -00.1		223	12.4 +02.5	S 08 43.0 +00.0		11
12	100	57.9 +01.5	N 21 38.5 -00.1		143	44.8 +02.7	N 22 22.1 +00.0		238	14.9 +02.5	S 08 43.0 +00.0		12
13	115	59.4 +01.5	N 21 38.4 -00.1		158	47.5 +02.7	N 22 22.1 +00.0		253	17.4 +02.6	S 08 43.0 +00.0		13
14	131	00.9 +01.6	N 21 38.3 -00.1		173	50.2 +02.7	N 22 22.1 +00.0		268	20.0 +02.5	S 08 43.0 +00.1		14
15	146	02.5 +01.5	N 21 38.2 -00.1		188	52.9 +02.7	N 22 22.1 +00.0		283	22.5 +02.5	S 08 43.1 +00.0		15
16	161	04.0 +01.5	N 21 38.1 -00.1		203	55.6 +02.7	N 22 22.1 +00.0		298	25.0 +02.5	S 08 43.1 +00.0		16
17	176	05.5 +01.6	N 21 38.0 -00.1		218	58.3 +02.7	N 22 22.1 +00.0		313	27.5 +02.5	S 08 43.1 +00.0		17
18	191	07.1 +01.5	N 21 37.9 -00.1		234	01.0 +02.6	N 22 22.1 -00.1		328	30.0 +02.5	S 08 43.1 +00.0		18
19	206	08.6 +01.6	N 21 37.8 -00.1		249	03.6 +02.7	N 22 22.0 +00.0		343	32.5 +02.5	S 08 43.1 +00.0		19
20	221	10.2 +01.5	N 21 37.7 -00.1		264	06.3 +02.7	N 22 22.0 +00.0		358	35.0 +02.6	S 08 43.1 +00.0		20
21	236	11.7 +01.5	N 21 37.6 -00.1		279	09.0 +02.7	N 22 22.0 +00.0		13	37.6 +02.5	S 08 43.1 +00.1		21
22	251	13.2 +01.6	N 21 37.5 -00.1		294	11.7 +02.7	N 22 22.0 +00.0		28	40.1 +02.5	S 08 43.2 +00.0		22
23	266	14.8 +01.5	N 21 37.4 -00.1		309	14.4 +02.7	N 22 22.0 +00.0		43	42.6 +02.5	S 08 43.2 +00.0		23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 00°1 00°1 00°1 00°1 00°1 00°1				SD 00°4 00°4 00°4 00°4 00°4 00°4				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°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 238° 238° 238° 238° 238° 238°				SHA 280° 280° 281° 281° 281° 281°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 05:16				Greenwich Culmination Time: 02:26				Greenwich Culmination Time: 20:05				

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 -00.1	S	15 27.3 +00.7	143 59.4 -00.8	S	24 60.0 +00.3	156 37.4 -31.3	S	26 27.7 +05.9				
01	199 06.6 +00.0	S	15 28.0 +00.8	158 58.6 -00.9	S	25 00.3 +00.3	171 06.1 -31.3	S	26 33.6 +05.8				
02	214 06.6 +00.0	S	15 28.8 +00.8	173 57.7 -00.8	S	25 00.6 +00.3	185 34.8 -31.5	S	26 39.4 +05.7				
03	229 06.6 +00.0	S	15 29.6 +00.7	188 56.9 -00.8	S	25 00.9 +00.3	200 03.3 -31.5	S	26 45.1 +05.5				
04	244 06.6 +00.0	S	15 30.3 +00.8	203 56.1 -00.8	S	25 01.2 +00.3	214 31.8 -31.5	S	26 50.6 +05.4				
05	259 06.6 +00.0	S	15 31.1 +00.8	218 55.3 -00.9	S	25 01.5 +00.3	229 00.3 -31.7	S	26 56.0 +05.3				
06	274 06.6 +00.0	S	15 31.9 +00.7	233 54.4 -00.8	S	25 01.8 +00.3	243 28.6 -31.7	S	27 01.3 +05.2				
07	289 06.6 +00.0	S	15 32.6 +00.8	248 53.6 -00.8	S	25 02.1 +00.3	257 56.9 -31.8	S	27 06.5 +05.0				
08	304 06.6 -00.1	S	15 33.4 +00.8	263 52.8 -00.9	S	25 02.4 +00.3	272 25.1 -31.9	S	27 11.5 +04.8				
09	319 06.5 +00.0	S	15 34.2 +00.7	278 51.9 -00.8	S	25 02.7 +00.3	286 53.2 -31.9	S	27 16.3 +04.8				
10	334 06.5 +00.0	S	15 34.9 +00.8	293 51.1 -00.8	S	25 03.0 +00.3	301 21.3 -32.0	S	27 21.1 +04.6				
11	349 06.5 +00.0	S	15 35.7 +00.7	308 50.3 -00.8	S	25 03.3 +00.3	315 49.3 -32.1	S	27 25.7 +04.4				
12	4 06.5 +00.0	S	15 36.4 +00.8	323 49.5 -00.9	S	25 03.6 +00.3	330 17.2 -32.2	S	27 30.1 +04.3				
13	19 06.5 +00.0	S	15 37.2 +00.8	338 48.6 -00.8	S	25 03.9 +00.3	344 45.0 -32.2	S	27 34.4 +04.2				
14	34 06.5 +00.0	S	15 38.0 +00.7	353 47.8 -00.8	S	25 04.2 +00.3	359 12.8 -32.2	S	27 38.6 +04.0				
15	49 06.5 -00.1	S	15 38.7 +00.8	8 47.0 -00.9	S	25 04.5 +00.2	13 40.6 -32.4	S	27 42.6 +03.9				
16	64 06.4 +00.0	S	15 39.5 +00.8	23 46.1 -00.8	S	25 04.7 +00.3	28 08.2 -32.4	S	27 46.5 +03.8				
17	79 06.4 +00.0	S	15 40.3 +00.7	38 45.3 -00.8	S	25 05.0 +00.3	42 35.8 -32.4	S	27 50.3 +03.6				
18	94 06.4 +00.0	S	15 41.0 +00.8	53 44.5 -00.9	S	25 05.3 +00.3	57 03.4 -32.5	S	27 53.9 +03.4				
19	109 06.4 +00.0	S	15 41.8 +00.7	68 43.6 -00.8	S	25 05.6 +00.3	71 30.9 -32.6	S	27 57.3 +03.3				
20	124 06.4 +00.0	S	15 42.5 +00.8	83 42.8 -00.8	S	25 05.9 +00.3	85 58.3 -32.6	S	28 00.6 +03.2				
21	139 06.4 -00.1	S	15 43.3 +00.7	98 42.0 -00.8	S	25 06.2 +00.2	100 25.7 -32.7	S	28 03.8 +03.0				
22	154 06.3 +00.0	S	15 44.0 +00.8	113 41.2 -00.9	S	25 06.4 +00.3	114 53.0 -32.7	S	28 06.8 +02.9				
23	169 06.3 +00.0	S	15 44.8 +00.8	128 40.3 -00.8	S	25 06.7 +00.3	129 20.3 -32.8	S	28 09.7 +02.7				
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22				UT 02 06 10 14 18 22					
	SD 16°1 16°1 16°1 16°1 16°1 16°1			SD 00°1 00°1 00°1 00°1 00°1 00°1				SD 15°0 15°0 15°0 15°1 15°1 15°1					
	HP 00°1 00°1 00°1 00°1 00°1 00°1			HP 00°1 00°1 00°1 00°1 00°1 00°1				HP 55°1 55°2 55°2 55°3 55°4 55°4					
	SHA 140° 140° 140° 140° 140° 139°			SHA 100° 100° 100° 099° 099° 099°				SHA 112° 109° 107° 105° 103° 100°					
	Greenwich Culmination Time: 11:43			Greenwich Culmination Time: 14:24				Greenwich Culmination Time: 14:03					

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	281 16.3 +01.6	N	21 37.3 -00.1	324 17.1 +02.7	N	22 22.0 +00.0	58 45.1 +02.5	S	08 43.2 +00.0				
01	296 17.9 +01.5	N	21 37.2 -00.1	339 19.8 +02.7	N	22 22.0 -00.1	73 47.6 +02.5	S	08 43.2 +00.0				
02	311 19.4 +01.6	N	21 37.1 -00.1	354 22.5 +02.6	N	22 21.9 +00.0	88 50.1 +02.5	S	08 43.2 +00.0				
03	326 21.0 +01.5	N	21 37.0 -00.1	9 25.1 +02.7	N	22 21.9 +00.0	103 52.6 +02.6	S	08 43.2 +00.0				
04	341 22.5 +01.6	N	21 36.9 -00.1	24 27.8 +02.7	N	22 21.9 +00.0	118 55.2 +02.5	S	08 43.2 +00.0				
05	356 24.1 +01.5	N	21 36.8 -00.1	39 30.5 +02.7	N	22 21.9 +00.0	133 57.7 +02.5	S	08 43.2 +00.1				
06	11 25.6 +01.6	N	21 36.7 -00.1	54 33.2 +02.7	N	22 21.9 +00.0	149 00.2 +02.5	S	08 43.3 +00.0				
07	26 27.2 +01.5	N	21 36.6 -00.1	69 35.9 +02.7	N	22 21.9 +00.0	164 02.7 +02.5	S	08 43.3 +00.0				
08	41 28.7 +01.6	N	21 36.5 -00.1	84 38.6 +02.7	N	22 21.9 -00.1	179 05.2 +02.5	S	08 43.3 +00.0				
09	56 30.3 +01.5	N	21 36.4 -00.1	99 41.3 +02.7	N	22 21.8 +00.0	194 07.7 +02.5	S	08 43.3 +00.0				
10	71 31.8 +01.6	N	21 36.3 -00.1	114 44.0 +02.7	N	22 21.8 +00.0	209 10.2 +02.5	S	08 43.3 +00.0				
11	86 33.4 +01.5	N	21 36.2 -00.1	129 46.7 +02.7	N	22 21.8 +00.0	224 12.7 +02.6	S	08 43.3 +00.0				
12	101 34.9 +01.6	N	21 36.1 -00.1	144 49.4 +02.6	N	22 21.8 +00.0	239 15.3 +02.5	S	08 43.3 +00.0				
13	116 36.5 +01.5	N	21 36.0 -00.1	159 52.0 +02.7	N	22 21.8 +00.0	254 17.8 +02.5	S	08 43.3 +00.1				
14	131 38.0 +01.6	N	21 35.9 -00.1	174 54.7 +02.7	N	22 21.8 +00.0	269 20.3 +02.5	S	08 43.4 +00.0				
15	146 39.6 +01.5	N	21 35.8 -00.1	189 57.4 +02.7	N	22 21.8 -00.1	284 22.8 +02.5	S	08 43.4 +00.0				
16	161 41.1 +01.6	N	21 35.7 -00.1	205 00.1 +02.7	N	22 21.7 +00.0	299 25.3 +02.5	S	08 43.4 +00.0				
17	176 42.7 +01.6	N	21 35.6 -00.1	220 02.8 +02.7	N	22 21.7 +00.0	314 27.8 +02.5	S	08 43.4 +00.0				
18	191 44.3 +01.5	N	21 35.5 -00.1	235 05.5 +02.7	N	22 21.7 +00.0	329 30.3 +02.5	S	08 43.4 +00.0				
19	206 45.8 +01.6	N	21 35.4 -00.1	250 08.2 +02.7	N	22 21.7 +00.0	344 32.8 +02.5	S	08 43.4 +00.0				
20	221 47.4 +01.5	N	21 35.3 -00.1	265 10.9 +02.7	N	22 21.7 +00.0	359 35.3 +02.6	S	08 43.4 +00.0				
21	236 48.9 +01.6	N	21 35.2 -00.1	280 13.6 +02.7	N	22 21.7 +00.0	14 37.9 +02.5	S	08 43.4 +00.1				
22	251 50.5 +01.6	N	21 35.1 -00.1	295 16.3 +02.7	N	22 21.7 -00.1	29 40.4 +02.5	S	08 43.5 +00.0				
23	266 52.1 +01.5	N	21 35.0 -00.1	310 19.0 +02.7	N	22 21.6 +00.0	44 42.9 +02.5	S	08 43.5 +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°1 00°1 00°1 00°1 00°1 00°1			SD 00°4 00°4 00°4 00°4 00°4 00°4				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°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 238° 237° 237° 237° 237° 237°			SHA 281° 281° 281° 281° 281° 281°				SHA 015° 015° 015° 015° 015° 015°					
	Greenwich Culmination Time: 05:14			Greenwich Culmination Time: 02:22				Greenwich Culmination Time: 20:01					

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 06.3 +00.0	S 15 45.6 +00.7	143 39.5 -00.8	S 25 07.0 +00.3	143 47.5 -32.9	S 28 12.4 +02.6	00						
01	199 06.3 +00.0	S 15 46.3 +00.8	158 38.7 -00.9	S 25 07.3 +00.3	158 14.6 -32.8	S 28 15.0 +02.4	01						
02	214 06.3 -00.1	S 15 47.1 +00.7	173 37.8 -00.8	S 25 07.6 +00.2	172 41.8 -33.0	S 28 17.4 +02.3	02						
03	229 06.2 +00.0	S 15 47.8 +00.8	188 37.0 -00.8	S 25 07.8 +00.3	187 08.8 -33.0	S 28 19.7 +02.1	03						
04	244 06.2 +00.0	S 15 48.6 +00.7	203 36.2 -00.9	S 25 08.1 +00.3	201 35.8 -33.0	S 28 21.8 +02.0	04						
05	259 06.2 +00.0	S 15 49.3 +00.8	218 35.3 -00.8	S 25 08.4 +00.2	216 02.8 -33.1	S 28 23.8 +01.8	05						
06	274 06.2 +00.0	S 15 50.1 +00.8	233 34.5 -00.8	S 25 08.6 +00.3	230 29.7 -33.1	S 28 25.6 +01.6	06						
07	289 06.2 -00.1	S 15 50.9 +00.7	248 33.7 -00.9	S 25 08.9 +00.3	244 56.6 -33.1	S 28 27.2 +01.6	07						
08	304 06.1 +00.0	S 15 51.6 +00.8	263 32.8 -00.8	S 25 09.2 +00.3	259 23.5 -33.2	S 28 28.8 +01.3	08						
09	319 06.1 +00.0	S 15 52.4 +00.7	278 32.0 -00.8	S 25 09.5 +00.2	273 50.3 -33.3	S 28 30.1 +01.2	09						
10	334 06.1 +00.0	S 15 53.1 +00.8	293 31.2 -00.9	S 25 09.7 +00.3	288 17.0 -33.2	S 28 31.3 +01.1	10						
11	349 06.1 -00.1	S 15 53.9 +00.7	308 30.3 -00.8	S 25 10.0 +00.2	302 43.8 -33.4	S 28 32.4 +00.8	11						
12	4 06.0 +00.0	S 15 54.6 +00.8	323 29.5 -00.8	S 25 10.2 +00.3	317 10.4 -33.3	S 28 33.2 +00.8	12						
13	19 06.0 +00.0	S 15 55.4 +00.7	338 28.7 -00.9	S 25 10.5 +00.3	331 37.1 -33.4	S 28 34.0 +00.6	13						
14	34 06.0 +00.0	S 15 56.1 +00.8	353 27.8 -00.8	S 25 10.8 +00.2	346 03.7 -33.4	S 28 34.6 +00.4	14						
15	49 06.0 +00.0	S 15 56.9 +00.7	8 27.0 -00.8	S 25 11.0 +00.3	0 30.3 -33.4	S 28 35.0 +00.2	15						
16	64 06.0 -00.1	S 15 57.6 +00.8	23 26.2 -00.9	S 25 11.3 +00.2	14 56.9 -33.5	S 28 35.2 +00.1	16						
17	79 05.9 +00.0	S 15 58.4 +00.7	38 25.3 -00.8	S 25 11.5 +00.3	29 23.4 -33.4	S 28 35.3 +00.0	17						
18	94 05.9 +00.0	S 15 59.1 +00.8	53 24.5 -00.8	S 25 11.8 +00.3	43 50.0 -33.6	S 28 35.3 -00.2	18						
19	109 05.9 -00.1	S 15 59.9 +00.7	68 23.7 -00.9	S 25 12.1 +00.2	58 16.4 -33.5	S 28 35.1 -00.4	19						
20	124 05.8 +00.0	S 16 00.6 +00.8	83 22.8 -00.8	S 25 12.3 +00.3	72 42.9 -33.5	S 28 34.7 -00.5	20						
21	139 05.8 +00.0	S 16 01.4 +00.7	98 22.0 -00.8	S 25 12.6 +00.2	87 09.4 -33.6	S 28 34.2 -00.7	21						
22	154 05.8 +00.0	S 16 02.1 +00.8	113 21.2 -00.9	S 25 12.8 +00.3	101 35.8 -33.6	S 28 33.5 -00.9	22						
23	169 05.8 -00.1	S 16 02.9 +00.7	128 20.3 -00.8	S 25 13.1 +00.2	116 02.2 -33.6	S 28 32.6 -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 00'1 00'1 00'1 00'1 00'1 00'1		SD 15'1 15'2 15'2 15'2 15'2 15'2								
	HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 00'1 00'1 00'1 00'1 00'1 00'1		HP 55'5 55'6 55'7 55'8 55'9 56'0								
	SHA 139° 139° 139° 139° 139° 138°		SHA 099° 099° 098° 098° 098° 098°		SHA 098° 096° 093° 091° 088° 086°								
	Greenwich Culmination Time: 11:43		Greenwich Culmination Time: 14:26		Greenwich Culmination Time: 14:57								

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	281 53.6 +01.6	N 21 34.9 -00.1	325 21.7 +02.7	N 22 21.6 +00.0	59 45.4 +02.5	S 08 43.5 +00.0	00						
01	296 55.2 +01.6	N 21 34.8 +00.0	340 24.4 +02.7	N 22 21.6 +00.0	74 47.9 +02.5	S 08 43.5 +00.0	01						
02	311 56.8 +01.5	N 21 34.8 -00.1	355 27.1 +02.7	N 22 21.6 +00.0	89 50.4 +02.5	S 08 43.5 +00.0	02						
03	326 58.3 +01.6	N 21 34.7 -00.1	10 29.8 +02.7	N 22 21.6 +00.0	104 52.9 +02.5	S 08 43.5 +00.0	03						
04	341 59.9 +01.6	N 21 34.6 -00.1	25 32.5 +02.6	N 22 21.6 +00.0	119 55.4 +02.5	S 08 43.5 +00.0	04						
05	357 01.5 +01.5	N 21 34.5 -00.1	40 35.1 +02.7	N 22 21.6 -00.1	134 57.9 +02.5	S 08 43.5 +00.1	05						
06	12 03.0 +01.6	N 21 34.4 -00.1	55 37.8 +02.7	N 22 21.5 +00.0	150 00.4 +02.5	S 08 43.6 +00.0	06						
07	27 04.6 +01.6	N 21 34.3 -00.1	70 40.5 +02.7	N 22 21.5 +00.0	165 02.9 +02.6	S 08 43.6 +00.0	07						
08	42 06.2 +01.5	N 21 34.2 -00.1	85 43.2 +02.7	N 22 21.5 +00.0	180 05.5 +02.5	S 08 43.6 +00.0	08						
09	57 07.7 +01.6	N 21 34.1 -00.1	100 45.9 +02.7	N 22 21.5 +00.0	195 08.0 +02.5	S 08 43.6 +00.0	09						
10	72 09.3 +01.6	N 21 34.0 -00.1	115 48.6 +02.7	N 22 21.5 +00.0	210 10.5 +02.5	S 08 43.6 +00.0	10						
11	87 10.9 +01.6	N 21 33.9 -00.1	130 51.3 +02.7	N 22 21.5 +00.0	225 13.0 +02.5	S 08 43.6 +00.0	11						
12	102 12.5 +01.5	N 21 33.8 -00.1	145 54.0 +02.7	N 22 21.5 -00.1	240 15.5 +02.5	S 08 43.6 +00.0	12						
13	117 14.0 +01.6	N 21 33.7 -00.1	160 56.7 +02.7	N 22 21.4 +00.0	255 18.0 +02.5	S 08 43.6 +00.0	13						
14	132 15.6 +01.6	N 21 33.6 -00.1	175 59.4 +02.7	N 22 21.4 +00.0	270 20.5 +02.5	S 08 43.6 +00.1	14						
15	147 17.2 +01.6	N 21 33.5 -00.1	191 02.1 +02.7	N 22 21.4 +00.0	285 23.0 +02.5	S 08 43.7 +00.0	15						
16	162 18.8 +01.5	N 21 33.4 -00.1	206 04.8 +02.7	N 22 21.4 +00.0	300 25.5 +02.5	S 08 43.7 +00.0	16						
17	177 20.3 +01.6	N 21 33.3 -00.1	221 07.5 +02.7	N 22 21.4 +00.0	315 28.0 +02.5	S 08 43.7 +00.0	17						
18	192 21.9 +01.6	N 21 33.2 -00.1	236 10.2 +02.7	N 22 21.4 +00.0	330 30.5 +02.5	S 08 43.7 +00.0	18						
19	207 23.5 +01.6	N 21 33.1 -00.1	251 12.9 +02.7	N 22 21.4 -00.1	345 33.0 +02.5	S 08 43.7 +00.0	19						
20	222 25.1 +01.6	N 21 33.0 -00.1	266 15.6 +02.7	N 22 21.3 +00.0	0 35.5 +02.6	S 08 43.7 +00.0	20						
21	237 26.7 +01.6	N 21 32.9 -00.1	281 18.3 +02.7	N 22 21.3 +00.0	15 38.1 +02.5	S 08 43.7 +00.0	21						
22	252 28.3 +01.5	N 21 32.8 -00.1	296 21.0 +02.7	N 22 21.3 +00.0	30 40.6 +02.5	S 08 43.7 +00.0	22						
23	267 29.8 +01.6	N 21 32.7 +00.0	311 23.7 +02.7	N 22 21.3 +00.0	45 43.1 +02.5	S 08 43.7 +00.0	23						
	UT 02 06 10 14 18 22		UT 02 06 10 14 18 22		UT 02 06 10 14 18 22								
	SD 00'1 00'1 00'1 00'1 00'1 00'1		SD 00'4 00'4 00'4 00'4 00'4 00'4		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 00'0 00'0 00'0 00'0 00'0 00'0		HP 00'0 00'0 00'0 00'0 00'0 00'0								
	SHA 237° 237° 237° 237° 237° 237°		SHA 281° 281° 281° 281° 281° 281°		SHA 015° 015° 015° 015° 015° 015°								
	Greenwich Culmination Time: 05:11		Greenwich Culmination Time: 02:18		Greenwich Culmination Time: 19:57								

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184	05.7 +00.0	S 16 03.6	+00.7	143	19.5 -00.8	S 25 13.3	+00.3	130	28.6 -33.6	S 28 31.6	-01.1	00
01	199	05.7 +00.0	S 16 04.3	+00.8	158	18.7 -00.9	S 25 13.6	+00.2	144	55.0 -33.6	S 28 30.5	-01.4	01
02	214	05.7 +00.0	S 16 05.1	+00.7	173	17.8 -00.8	S 25 13.8	+00.2	159	21.4 -33.7	S 28 29.1	-01.5	02
03	229	05.7 -00.1	S 16 05.8	+00.8	188	17.0 -00.8	S 25 14.0	+00.3	173	47.7 -33.6	S 28 27.6	-01.6	03
04	244	05.6 +00.0	S 16 06.6	+00.7	203	16.2 -00.9	S 25 14.3	+00.2	188	14.1 -33.7	S 28 26.0	-01.8	04
05	259	05.6 +00.0	S 16 07.3	+00.8	218	15.3 -00.8	S 25 14.5	+00.3	202	40.4 -33.6	S 28 24.2	-02.0	05
06	274	05.6 -00.1	S 16 08.1	+00.7	233	14.5 -00.9	S 25 14.8	+00.2	217	06.8 -33.7	S 28 22.2	-02.1	06
07	289	05.5 +00.0	S 16 08.8	+00.8	248	13.6 -00.8	S 25 15.0	+00.3	231	33.1 -33.7	S 28 20.1	-02.3	07
08	304	05.5 +00.0	S 16 09.6	+00.7	263	12.8 -00.8	S 25 15.3	+00.2	245	59.4 -33.7	S 28 17.8	-02.4	08
09	319	05.5 -00.1	S 16 10.3	+00.7	278	12.0 -00.9	S 25 15.5	+00.2	260	25.7 -33.6	S 28 15.4	-02.7	09
10	334	05.4 +00.0	S 16 11.0	+00.8	293	11.1 -00.8	S 25 15.7	+00.3	274	52.1 -33.7	S 28 12.7	-02.7	10
11	349	05.4 +00.0	S 16 11.8	+00.7	308	10.3 -00.8	S 25 16.0	+00.2	289	18.4 -33.7	S 28 10.0	-03.0	11
12	4	05.4 +00.0	S 16 12.5	+00.8	323	09.5 -00.9	S 25 16.2	+00.2	303	44.7 -33.6	S 28 07.0	-03.1	12
13	19	05.4 -00.1	S 16 13.3	+00.7	338	08.6 -00.8	S 25 16.4	+00.3	318	11.1 -33.7	S 28 03.9	-03.2	13
14	34	05.3 +00.0	S 16 14.0	+00.7	353	07.8 -00.8	S 25 16.7	+00.2	332	37.4 -33.6	S 28 00.7	-03.4	14
15	49	05.3 +00.0	S 16 14.7	+00.8	8	07.0 -00.9	S 25 16.9	+00.2	347	03.8 -33.6	S 27 57.3	-03.6	15
16	64	05.3 -00.1	S 16 15.5	+00.7	23	06.1 -00.8	S 25 17.1	+00.2	1	30.2 -33.7	S 27 53.7	-03.7	16
17	79	05.2 +00.0	S 16 16.2	+00.8	38	05.3 -00.9	S 25 17.3	+00.3	15	56.5 -33.6	S 27 50.0	-03.9	17
18	94	05.2 +00.0	S 16 17.0	+00.7	53	04.4 -00.8	S 25 17.6	+00.2	30	22.9 -33.6	S 27 46.1	-04.1	18
19	109	05.2 -00.1	S 16 17.7	+00.7	68	03.6 -00.8	S 25 17.8	+00.2	44	49.3 -33.6	S 27 42.0	-04.2	19
20	124	05.1 +00.0	S 16 18.4	+00.8	83	02.8 -00.9	S 25 18.0	+00.2	59	15.7 -33.5	S 27 37.8	-04.3	20
21	139	05.1 -00.1	S 16 19.2	+00.7	98	01.9 -00.8	S 25 18.2	+00.3	73	42.2 -33.6	S 27 33.5	-04.6	21
22	154	05.0 +00.0	S 16 19.9	+00.7	113	01.1 -00.8	S 25 18.5	+00.2	88	08.6 -33.5	S 27 28.9	-04.7	22
23	169	05.0 +00.0	S 16 20.6	+00.8	128	00.3 -00.9	S 25 18.7	+00.2	102	35.1 -33.5	S 27 24.2	-04.8	23
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 16'1 16'1 16'1 16'1 16'1 16'1				SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 15'3 15'3 15'3 15'3 15'4 15'4				
	HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 56'0 56'1 56'2 56'3 56'4 56'5				
	SHA 138° 138° 138° 138° 138° 137°				SHA 098° 097° 097° 097° 097° 096°				SHA 084° 081° 079° 076° 074° 072°				
	Greenwich Culmination Time: 11:43				Greenwich Culmination Time: 14:27				Greenwich Culmination Time: 15:53				

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	282	31.4 +01.6	N 21 32.7	-00.1	326	26.4 +02.7	N 22 21.3	+00.0	60	45.6 +02.5	S 08 43.7	+00.1	00
01	297	33.0 +01.6	N 21 32.6	-00.1	341	29.1 +02.8	N 22 21.3	+00.0	75	48.1 +02.5	S 08 43.8	+00.0	01
02	312	34.6 +01.6	N 21 32.5	-00.1	356	31.9 +02.7	N 22 21.3	-00.1	90	50.6 +02.5	S 08 43.8	+00.0	02
03	327	36.2 +01.6	N 21 32.4	-00.1	11	34.6 +02.7	N 22 21.2	+00.0	105	53.1 +02.5	S 08 43.8	+00.0	03
04	342	37.8 +01.6	N 21 32.3	-00.1	26	37.3 +02.7	N 22 21.2	+00.0	120	55.6 +02.5	S 08 43.8	+00.0	04
05	357	39.4 +01.5	N 21 32.2	-00.1	41	40.0 +02.7	N 22 21.2	+00.0	135	58.1 +02.5	S 08 43.8	+00.0	05
06	12	40.9 +01.6	N 21 32.1	-00.1	56	42.7 +02.7	N 22 21.2	+00.0	151	00.6 +02.5	S 08 43.8	+00.0	06
07	27	42.5 +01.6	N 21 32.0	-00.1	71	45.4 +02.7	N 22 21.2	+00.0	166	03.1 +02.5	S 08 43.8	+00.0	07
08	42	44.1 +01.6	N 21 31.9	-00.1	86	48.1 +02.7	N 22 21.2	-00.1	181	05.6 +02.5	S 08 43.8	+00.0	08
09	57	45.7 +01.6	N 21 31.8	-00.1	101	50.8 +02.7	N 22 21.1	+00.0	196	08.1 +02.5	S 08 43.8	+00.0	09
10	72	47.3 +01.6	N 21 31.7	-00.1	116	53.5 +02.7	N 22 21.1	+00.0	211	10.6 +02.5	S 08 43.8	+00.1	10
11	87	48.9 +01.6	N 21 31.6	-00.1	131	56.2 +02.7	N 22 21.1	+00.0	226	13.1 +02.5	S 08 43.9	+00.0	11
12	102	50.5 +01.6	N 21 31.5	-00.1	146	58.9 +02.7	N 22 21.1	+00.0	241	15.6 +02.5	S 08 43.9	+00.0	12
13	117	52.1 +01.6	N 21 31.4	+00.0	162	01.6 +02.7	N 22 21.1	+00.0	256	18.1 +02.5	S 08 43.9	+00.0	13
14	132	53.7 +01.6	N 21 31.4	-00.1	177	04.3 +02.7	N 22 21.1	+00.0	271	20.6 +02.5	S 08 43.9	+00.0	14
15	147	55.3 +01.6	N 21 31.3	-00.1	192	07.0 +02.7	N 22 21.1	-00.1	286	23.1 +02.5	S 08 43.9	+00.0	15
16	162	56.9 +01.6	N 21 31.2	-00.1	207	09.7 +02.7	N 22 21.0	+00.0	301	25.6 +02.5	S 08 43.9	+00.0	16
17	177	58.5 +01.6	N 21 31.1	-00.1	222	12.4 +02.7	N 22 21.0	+00.0	316	28.1 +02.5	S 08 43.9	+00.0	17
18	193	00.1 +01.6	N 21 31.0	-00.1	237	15.1 +02.8	N 22 21.0	+00.0	331	30.6 +02.5	S 08 43.9	+00.0	18
19	208	01.7 +01.6	N 21 30.9	-00.1	252	17.9 +02.7	N 22 21.0	+00.0	346	33.1 +02.5	S 08 43.9	+00.0	19
20	223	03.3 +01.6	N 21 30.8	-00.1	267	20.6 +02.7	N 22 21.0	+00.0	1	35.6 +02.6	S 08 43.9	+00.0	20
21	238	04.9 +01.6	N 21 30.7	-00.1	282	23.3 +02.7	N 22 21.0	-00.1	16	38.2 +02.5	S 08 43.9	+00.1	21
22	253	06.5 +01.6	N 21 30.6	-00.1	297	26.0 +02.7	N 22 20.9	+00.0	31	40.7 +02.5	S 08 44.0	+00.0	22
23	268	08.1 +01.6	N 21 30.5	-00.1	312	28.7 +02.7	N 22 20.9	+00.0	46	43.2 +02.5	S 08 44.0	+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 00'1 00'1 00'1 00'1 00'1 00'1				SD 00'4 00'4 00'4 00'4 00'4 00'4				SD 00'2 00'2 00'2 00'2 00'2 00'2				
	HP 00'1 00'1 00'1 00'1 00'1 00'2				HP 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 237° 237° 237° 237° 237° 237°				SHA 281° 281° 281° 281° 281° 281°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 05:09				Greenwich Culmination Time: 02:13				Greenwich Culmination Time: 19:53				

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UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184	05.0 -00.1	S 16 21.4	+00.7	142	59.4 -00.8	S 25 18.9	+00.2	117	01.6 -33.5	S 27 19.4	-05.0	00
01	199	04.9 +00.0	S 16 22.1	+00.7	157	58.6 -00.9	S 25 19.1	+00.2	131	28.1 -33.4	S 27 14.4	-05.2	01
02	214	04.9 +00.0	S 16 22.8	+00.8	172	57.7 -00.8	S 25 19.3	+00.2	145	54.7 -33.5	S 27 09.2	-05.3	02
03	229	04.9 -00.1	S 16 23.6	+00.7	187	56.9 -00.8	S 25 19.5	+00.3	160	21.2 -33.4	S 27 03.9	-05.5	03
04	244	04.8 +00.0	S 16 24.3	+00.7	202	56.1 -00.9	S 25 19.8	+00.2	174	47.8 -33.3	S 26 58.4	-05.6	04
05	259	04.8 +00.0	S 16 25.0	+00.8	217	55.2 -00.8	S 25 20.0	+00.2	189	14.5 -33.4	S 26 52.8	-05.8	05
06	274	04.8 -00.1	S 16 25.8	+00.7	232	54.4 -00.8	S 25 20.2	+00.2	203	41.1 -33.3	S 26 47.0	-05.9	06
07	289	04.7 +00.0	S 16 26.5	+00.7	247	53.6 -00.9	S 25 20.4	+00.2	218	07.8 -33.3	S 26 41.1	-06.1	07
08	304	04.7 -00.1	S 16 27.2	+00.8	262	52.7 -00.8	S 25 20.6	+00.2	232	34.5 -33.2	S 26 35.0	-06.3	08
09	319	04.6 +00.0	S 16 28.0	+00.7	277	51.9 -00.9	S 25 20.8	+00.2	247	01.3 -33.3	S 26 28.7	-06.4	09
10	334	04.6 +00.0	S 16 28.7	+00.7	292	51.0 -00.8	S 25 21.0	+00.2	261	28.0 -33.1	S 26 22.3	-06.5	10
11	349	04.6 -00.1	S 16 29.4	+00.7	307	50.2 -00.8	S 25 21.2	+00.2	275	54.9 -33.2	S 26 15.8	-06.7	11
12	4	04.5 +00.0	S 16 30.1	+00.8	322	49.4 -00.9	S 25 21.4	+00.2	290	21.7 -33.1	S 26 09.1	-06.9	12
13	19	04.5 -00.1	S 16 30.9	+00.7	337	48.5 -00.8	S 25 21.6	+00.2	304	48.6 -33.1	S 26 02.2	-07.0	13
14	34	04.4 +00.0	S 16 31.6	+00.7	352	47.7 -00.9	S 25 21.8	+00.2	319	15.5 -33.0	S 25 55.2	-07.2	14
15	49	04.4 +00.0	S 16 32.3	+00.8	7	46.8 -00.8	S 25 22.0	+00.2	333	42.5 -33.0	S 25 48.0	-07.3	15
16	64	04.4 -00.1	S 16 33.1	+00.7	22	46.0 -00.8	S 25 22.2	+00.2	348	09.5 -33.0	S 25 40.7	-07.4	16
17	79	04.3 +00.0	S 16 33.8	+00.7	37	45.2 -00.9	S 25 22.4	+00.2	2	36.5 -32.9	S 25 33.3	-07.6	17
18	94	04.3 -00.1	S 16 34.5	+00.7	52	44.3 -00.8	S 25 22.6	+00.2	17	03.6 -32.9	S 25 25.7	-07.8	18
19	109	04.2 +00.0	S 16 35.2	+00.8	67	43.5 -00.8	S 25 22.8	+00.2	31	30.7 -32.8	S 25 17.9	-07.9	19
20	124	04.2 -00.1	S 16 36.0	+00.7	82	42.7 -00.9	S 25 23.0	+00.2	45	57.9 -32.8	S 25 10.0	-08.1	20
21	139	04.1 +00.0	S 16 36.7	+00.7	97	41.8 -00.8	S 25 23.2	+00.2	60	25.1 -32.7	S 25 01.9	-08.2	21
22	154	04.1 -00.1	S 16 37.4	+00.7	112	41.0 -00.9	S 25 23.4	+00.2	74	52.4 -32.7	S 24 53.7	-08.3	22
23	169	04.0 +00.0	S 16 38.1	+00.8	127	40.1 -00.8	S 25 23.6	+00.2	89	19.7 -32.7	S 24 45.4	-08.5	23
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 16'1 16'1 16'1 16'1 16'1 16'1				SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 15'4 15'5 15'5 15'5 15'6 15'6				
	HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 56'6 56'7 56'9 57'0 57'1 57'2				
	SHA 137° 137° 137° 137° 137° 136°				SHA 096° 096° 096° 096° 095° 095°				SHA 069° 067° 064° 062° 060° 057°				
	Greenwich Culmination Time: 11:43				Greenwich Culmination Time: 14:28				Greenwich Culmination Time: 16:49				

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	283	09.7 +01.6	N 21 30.4	+00.0	327	31.4 +02.7	N 22 20.9	+00.0	61	45.7 +02.5	S 08 44.0	+00.0	00
01	298	11.3 +01.6	N 21 30.4	-00.1	342	34.1 +02.7	N 22 20.9	+00.0	76	48.2 +02.5	S 08 44.0	+00.0	01
02	313	12.9 +01.6	N 21 30.3	-00.1	357	36.8 +02.7	N 22 20.9	+00.0	91	50.7 +02.5	S 08 44.0	+00.0	02
03	328	14.5 +01.6	N 21 30.2	-00.1	12	39.5 +02.7	N 22 20.9	+00.0	106	53.2 +02.5	S 08 44.0	+00.0	03
04	343	16.1 +01.6	N 21 30.1	-00.1	27	42.2 +02.8	N 22 20.9	-00.1	121	55.7 +02.5	S 08 44.0	+00.0	04
05	358	17.7 +01.6	N 21 30.0	-00.1	42	45.0 +02.7	N 22 20.8	+00.0	136	58.2 +02.5	S 08 44.0	+00.0	05
06	13	19.3 +01.7	N 21 29.9	-00.1	57	47.7 +02.7	N 22 20.8	+00.0	152	00.7 +02.5	S 08 44.0	+00.0	06
07	28	21.0 +01.6	N 21 29.8	-00.1	72	50.4 +02.7	N 22 20.8	+00.0	167	03.2 +02.5	S 08 44.0	+00.0	07
08	43	22.6 +01.6	N 21 29.7	-00.1	87	53.1 +02.7	N 22 20.8	+00.0	182	05.7 +02.5	S 08 44.0	+00.0	08
09	58	24.2 +01.6	N 21 29.6	+00.0	102	55.8 +02.7	N 22 20.8	+00.0	197	08.2 +02.5	S 08 44.0	+00.0	09
10	73	25.8 +01.6	N 21 29.6	-00.1	117	58.5 +02.7	N 22 20.8	-00.1	212	10.7 +02.5	S 08 44.0	+00.1	10
11	88	27.4 +01.6	N 21 29.5	-00.1	133	01.2 +02.7	N 22 20.7	+00.0	227	13.2 +02.5	S 08 44.1	+00.0	11
12	103	29.0 +01.6	N 21 29.4	-00.1	148	03.9 +02.8	N 22 20.7	+00.0	242	15.7 +02.5	S 08 44.1	+00.0	12
13	118	30.6 +01.7	N 21 29.3	-00.1	163	06.7 +02.7	N 22 20.7	+00.0	257	18.2 +02.5	S 08 44.1	+00.0	13
14	133	32.3 +01.6	N 21 29.2	-00.1	178	09.4 +02.7	N 22 20.7	+00.0	272	20.7 +02.5	S 08 44.1	+00.0	14
15	148	33.9 +01.6	N 21 29.1	-00.1	193	12.1 +02.7	N 22 20.7	+00.0	287	23.2 +02.5	S 08 44.1	+00.0	15
16	163	35.5 +01.6	N 21 29.0	-00.1	208	14.8 +02.7	N 22 20.7	+00.0	302	25.7 +02.5	S 08 44.1	+00.0	16
17	178	37.1 +01.6	N 21 28.9	-00.1	223	17.5 +02.7	N 22 20.7	-00.1	317	28.2 +02.5	S 08 44.1	+00.0	17
18	193	38.7 +01.7	N 21 28.8	+00.0	238	20.2 +02.7	N 22 20.6	+00.0	332	30.7 +02.5	S 08 44.1	+00.0	18
19	208	40.4 +01.6	N 21 28.8	-00.1	253	22.9 +02.8	N 22 20.6	+00.0	347	33.2 +02.5	S 08 44.1	+00.0	19
20	223	42.0 +01.6	N 21 28.7	-00.1	268	25.7 +02.7	N 22 20.6	+00.0	2	35.7 +02.5	S 08 44.1	+00.0	20
21	238	43.6 +01.6	N 21 28.6	-00.1	283	28.4 +02.7	N 22 20.6	+00.0	17	38.2 +02.5	S 08 44.1	+00.0	21
22	253	45.2 +01.7	N 21 28.5	-00.1	298	31.1 +02.7	N 22 20.6	+00.0	32	40.7 +02.5	S 08 44.1	+00.0	22
23	268	46.9 +01.6	N 21 28.4	-00.1	313	33.8 +02.7	N 22 20.6	-00.1	47	43.2 +02.5	S 08 44.1	+00.1	23
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 00'4 00'4 00'4 00'4 00'4 00'4				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				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 236° 236° 236° 236° 236° 236°				SHA 281° 281° 281° 281° 281° 281°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 05:06				Greenwich Culmination Time: 02:09				Greenwich Culmination Time: 19:49				

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> <span style="float: right;">A: 24%</span>				UT
	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	
00	184	04.0 +00.0	S 16 38.9 +00.7		142	39.3 -00.8	S 25 23.8 +00.2		103	47.0 -32.6	S 24 36.9 -08.6		00
01	199	04.0 -00.1	S 16 39.6 +00.7		157	38.5 -00.9	S 25 24.0 +00.1		118	14.4 -32.5	S 24 28.3 -08.8		01
02	214	03.9 +00.0	S 16 40.3 +00.7		172	37.6 -00.8	S 25 24.1 +00.2		132	41.9 -32.6	S 24 19.5 -08.9		02
03	229	03.9 -00.1	S 16 41.0 +00.7		187	36.8 -00.9	S 25 24.3 +00.2		147	09.3 -32.4	S 24 10.6 -09.1		03
04	244	03.8 +00.0	S 16 41.7 +00.8		202	35.9 -00.8	S 25 24.5 +00.2		161	36.9 -32.4	S 24 01.5 -09.2		04
05	259	03.8 -00.1	S 16 42.5 +00.7		217	35.1 -00.8	S 25 24.7 +00.2		176	04.5 -32.4	S 23 52.3 -09.4		05
06	274	03.7 +00.0	S 16 43.2 +00.7		232	34.3 -00.9	S 25 24.9 +00.1		190	32.1 -32.3	S 23 42.9 -09.4		06
07	289	03.7 -00.1	S 16 43.9 +00.7		247	33.4 -00.8	S 25 25.0 +00.2		204	59.8 -32.3	S 23 33.5 -09.7		07
08	304	03.6 +00.0	S 16 44.6 +00.7		262	32.6 -00.9	S 25 25.2 +00.2		219	27.5 -32.2	S 23 23.8 -09.7		08
09	319	03.6 -00.1	S 16 45.3 +00.8		277	31.7 -00.8	S 25 25.4 +00.2		233	55.3 -32.2	S 23 14.1 -09.9		09
10	334	03.5 +00.0	S 16 46.1 +00.7		292	30.9 -00.8	S 25 25.6 +00.2		248	23.1 -32.1	S 23 04.2 -10.0		10
11	349	03.5 -00.1	S 16 46.8 +00.7		307	30.1 -00.9	S 25 25.8 +00.1		262	51.0 -32.0	S 22 54.2 -10.2		11
12	4	03.4 +00.0	S 16 47.5 +00.7		322	29.2 -00.8	S 25 25.9 +00.2		277	19.0 -32.1	S 22 44.0 -10.3		12
13	19	03.4 -00.1	S 16 48.2 +00.7		337	28.4 -00.9	S 25 26.1 +00.2		291	46.9 -31.9	S 22 33.7 -10.4		13
14	34	03.3 +00.0	S 16 48.9 +00.7		352	27.5 -00.8	S 25 26.3 +00.1		306	15.0 -31.9	S 22 23.3 -10.6		14
15	49	03.3 -00.1	S 16 49.6 +00.8		7	26.7 -00.8	S 25 26.4 +00.2		320	43.1 -31.9	S 22 12.7 -10.7		15
16	64	03.2 +00.0	S 16 50.4 +00.7		22	25.9 -00.9	S 25 26.6 +00.2		335	11.2 -31.8	S 22 02.0 -10.8		16
17	79	03.2 -00.1	S 16 51.1 +00.7		37	25.0 -00.8	S 25 26.8 +00.1		349	39.4 -31.8	S 21 51.2 -11.0		17
18	94	03.1 +00.0	S 16 51.8 +00.7		52	24.2 -00.9	S 25 26.9 +00.2		4	07.6 -31.7	S 21 40.2 -11.1		18
19	109	03.1 -00.1	S 16 52.5 +00.7		67	23.3 -00.8	S 25 27.1 +00.2		18	35.9 -31.6	S 21 29.1 -11.2		19
20	124	03.0 +00.0	S 16 53.2 +00.7		82	22.5 -00.9	S 25 27.3 +00.1		33	04.3 -31.6	S 21 17.9 -11.3		20
21	139	03.0 -00.1	S 16 53.9 +00.7		97	21.6 -00.8	S 25 27.4 +00.2		47	32.7 -31.6	S 21 06.6 -11.5		21
22	154	02.9 +00.0	S 16 54.6 +00.8		112	20.8 -00.8	S 25 27.6 +00.1		62	01.1 -31.5	S 20 55.1 -11.5		22
23	169	02.9 -00.1	S 16 55.4 +00.7		127	20.0 -00.9	S 25 27.7 +00.2		76	29.6 -31.4	S 20 43.6 -11.8		23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 16°1 16°1 16°1 16°1 16°1 16°1				SD 00°1 00°1 00°1 00°1 00°1 00°1				SD 15°6 15°6 15°7 15°7 15°7 15°8				
	HP 00°1 00°1 00°1 00°1 00°1 00°1				HP 00°1 00°1 00°1 00°1 00°1 00°1				HP 57°3 57°4 57°5 57°7 57°8 57°9				
	SHA 136° 136° 136° 136° 136° 135°				SHA 095° 095° 094° 094° 094° 094°				SHA 055° 053° 050° 048° 046° 043°				
	Greenwich Culmination Time: 11:43				Greenwich Culmination Time: 14:30				Greenwich Culmination Time: 17:42				

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	
00	283	48.5 +01.6	N 21 28.3 -00.1		328	36.5 +02.7	N 22 20.5 +00.0		62	45.7 +02.4	S 08 44.2 +00.0		00
01	298	50.1 +01.6	N 21 28.2 +00.0		343	39.2 +02.8	N 22 20.5 +00.0		77	48.1 +02.5	S 08 44.2 +00.0		01
02	313	51.7 +01.7	N 21 28.2 -00.1		358	42.0 +02.7	N 22 20.5 +00.0		92	50.6 +02.5	S 08 44.2 +00.0		02
03	328	53.4 +01.6	N 21 28.1 -00.1		13	44.7 +02.7	N 22 20.5 +00.0		107	53.1 +02.5	S 08 44.2 +00.0		03
04	343	55.0 +01.6	N 21 28.0 -00.1		28	47.4 +02.7	N 22 20.5 +00.0		122	55.6 +02.5	S 08 44.2 +00.0		04
05	358	56.6 +01.7	N 21 27.9 -00.1		43	50.1 +02.7	N 22 20.5 -00.1		137	58.1 +02.5	S 08 44.2 +00.0		05
06	13	58.3 +01.6	N 21 27.8 -00.1		58	52.8 +02.7	N 22 20.4 +00.0		153	00.6 +02.5	S 08 44.2 +00.0		06
07	28	59.9 +01.6	N 21 27.7 -00.1		73	55.5 +02.8	N 22 20.4 +00.0		168	03.1 +02.5	S 08 44.2 +00.0		07
08	44	01.5 +01.7	N 21 27.6 +00.0		88	58.3 +02.7	N 22 20.4 +00.0		183	05.6 +02.5	S 08 44.2 +00.0		08
09	59	03.2 +01.6	N 21 27.6 -00.1		104	01.0 +02.7	N 22 20.4 +00.0		198	08.1 +02.5	S 08 44.2 +00.0		09
10	74	04.8 +01.6	N 21 27.5 -00.1		119	03.7 +02.7	N 22 20.4 +00.0		213	10.6 +02.5	S 08 44.2 +00.0		10
11	89	06.4 +01.7	N 21 27.4 -00.1		134	06.4 +02.7	N 22 20.4 -00.1		228	13.1 +02.5	S 08 44.2 +00.0		11
12	104	08.1 +01.6	N 21 27.3 -00.1		149	09.1 +02.8	N 22 20.3 +00.0		243	15.6 +02.5	S 08 44.2 +00.0		12
13	119	09.7 +01.6	N 21 27.2 -00.1		164	11.9 +02.7	N 22 20.3 +00.0		258	18.1 +02.5	S 08 44.2 +00.0		13
14	134	11.3 +01.7	N 21 27.1 -00.1		179	14.6 +02.7	N 22 20.3 +00.0		273	20.6 +02.5	S 08 44.2 +00.0		14
15	149	13.0 +01.6	N 21 27.0 +00.0		194	17.3 +02.7	N 22 20.3 +00.0		288	23.1 +02.5	S 08 44.2 +00.0		15
16	164	14.6 +01.7	N 21 27.0 -00.1		209	20.0 +02.8	N 22 20.3 +00.0		303	25.6 +02.5	S 08 44.2 +00.1		16
17	179	16.3 +01.6	N 21 26.9 -00.1		224	22.8 +02.7	N 22 20.3 +00.0		318	28.1 +02.5	S 08 44.3 +00.0		17
18	194	17.9 +01.6	N 21 26.8 -00.1		239	25.5 +02.7	N 22 20.3 -00.1		333	30.6 +02.5	S 08 44.3 +00.0		18
19	209	19.5 +01.7	N 21 26.7 -00.1		254	28.2 +02.7	N 22 20.2 +00.0		348	33.1 +02.5	S 08 44.3 +00.0		19
20	224	21.2 +01.6	N 21 26.6 -00.1		269	30.9 +02.7	N 22 20.2 +00.0		3	35.6 +02.5	S 08 44.3 +00.0		20
21	239	22.8 +01.7	N 21 26.5 +00.0		284	33.6 +02.8	N 22 20.2 +00.0		18	38.1 +02.5	S 08 44.3 +00.0		21
22	254	24.5 +01.6	N 21 26.5 -00.1		299	36.4 +02.7	N 22 20.2 +00.0		33	40.6 +02.5	S 08 44.3 +00.0		22
23	269	26.1 +01.7	N 21 26.4 -00.1		314	39.1 +02.7	N 22 20.2 +00.0		48	43.1 +02.4	S 08 44.3 +00.0		23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 00°1 00°1 00°1 00°1 00°1 00°1				SD 00°4 00°4 00°4 00°4 00°4 00°4				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				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 236° 236° 236° 236° 236° 236°				SHA 281° 281° 281° 281° 281° 281°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 05:04				Greenwich Culmination Time: 02:05				Greenwich Culmination Time: 19:45				

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> <span style="float: right;">A: 27%</span>				UT
	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	
00	184 02.8 +00.0	S 16 56.1 +00.7	142 19.1 -00.8	S 25 27.9 +00.2	90 58.2 -31.4	S 20 31.8 -11.8							
01	199 02.8 -00.1	S 16 56.8 +00.7	157 18.3 -00.9	S 25 28.1 +00.1	105 26.8 -31.3	S 20 20.0 -11.9							
02	214 02.7 +00.0	S 16 57.5 +00.7	172 17.4 -00.8	S 25 28.2 +00.2	119 55.5 -31.3	S 20 08.1 -12.1							
03	229 02.7 -00.1	S 16 58.2 +00.7	187 16.6 -00.8	S 25 28.4 +00.1	134 24.2 -31.3	S 19 56.0 -12.2							
04	244 02.6 +00.0	S 16 58.9 +00.7	202 15.8 -00.9	S 25 28.5 +00.2	148 52.9 -31.2	S 19 43.8 -12.3							
05	259 02.6 -00.1	S 16 59.6 +00.7	217 14.9 -00.8	S 25 28.7 +00.1	163 21.7 -31.1	S 19 31.5 -12.4							
06	274 02.5 -00.1	S 17 00.3 +00.7	232 14.1 -00.9	S 25 28.8 +00.2	177 50.6 -31.1	S 19 19.1 -12.6							
07	289 02.4 +00.0	S 17 01.0 +00.7	247 13.2 -00.8	S 25 29.0 +00.1	192 19.5 -31.0	S 19 06.5 -12.6							
08	304 02.4 -00.1	S 17 01.7 +00.7	262 12.4 -00.8	S 25 29.1 +00.2	206 48.5 -31.0	S 18 53.9 -12.8							
09	319 02.3 +00.0	S 17 02.4 +00.7	277 11.6 -00.9	S 25 29.3 +00.1	221 17.5 -31.0	S 18 41.1 -12.9							
10	334 02.3 -00.1	S 17 03.1 +00.8	292 10.7 -00.8	S 25 29.4 +00.2	235 46.5 -30.9	S 18 28.2 -13.0							
11	349 02.2 +00.0	S 17 03.9 +00.7	307 09.9 -00.9	S 25 29.6 +00.1	250 15.6 -30.8	S 18 15.2 -13.1							
12	4 02.2 -00.1	S 17 04.6 +00.7	322 09.0 -00.8	S 25 29.7 +00.1	264 44.8 -30.8	S 18 02.1 -13.2							
13	19 02.1 -00.1	S 17 05.3 +00.7	337 08.2 -00.8	S 25 29.8 +00.2	279 14.0 -30.8	S 17 48.9 -13.3							
14	34 02.0 +00.0	S 17 06.0 +00.7	352 07.4 -00.9	S 25 30.0 +00.1	293 43.2 -30.7	S 17 35.6 -13.4							
15	49 02.0 -00.1	S 17 06.7 +00.7	7 06.5 -00.8	S 25 30.1 +00.2	308 12.5 -30.7	S 17 22.2 -13.5							
16	64 01.9 +00.0	S 17 07.4 +00.7	22 05.7 -00.9	S 25 30.3 +00.1	322 41.8 -30.6	S 17 08.7 -13.7							
17	79 01.9 -00.1	S 17 08.1 +00.7	37 04.8 -00.8	S 25 30.4 +00.1	337 11.2 -30.5	S 16 55.0 -13.7							
18	94 01.8 -00.1	S 17 08.8 +00.7	52 04.0 -00.9	S 25 30.5 +00.2	351 40.7 -30.6	S 16 41.3 -13.9							
19	109 01.7 +00.0	S 17 09.5 +00.7	67 03.1 -00.8	S 25 30.7 +00.1	6 10.1 -30.5	S 16 27.4 -13.9							
20	124 01.7 -00.1	S 17 10.2 +00.7	82 02.3 -00.8	S 25 30.8 +00.1	20 39.6 -30.4	S 16 13.5 -14.0							
21	139 01.6 +00.0	S 17 10.9 +00.7	97 01.5 -00.9	S 25 30.9 +00.2	35 09.2 -30.4	S 15 59.5 -14.2							
22	154 01.6 -00.1	S 17 11.6 +00.7	112 00.6 -00.8	S 25 31.1 +00.1	49 38.8 -30.4	S 15 45.3 -14.2							
23	169 01.5 -00.1	S 17 12.3 +00.7	126 59.8 -00.9	S 25 31.2 +00.1	64 08.4 -30.3	S 15 31.1 -14.4							
	UT 02 06 10 14 18 22 SD 16'1 16'1 16'1 16'1 16'1 16'2 HP 00'1 00'1 00'1 00'1 00'1 00'1 SHA 135° 135° 135° 135° 135° 134° Greenwich Culmination Time: 11:43	UT 02 06 10 14 18 22 SD 00'1 00'1 00'1 00'1 00'1 00'1 HP 00'1 00'1 00'1 00'1 00'1 00'1 SHA 094° 093° 093° 093° 093° 092° Greenwich Culmination Time: 14:31	UT 02 06 10 14 18 22 SD 15'8 15'8 15'9 15'9 15'9 16'0 HP 58'0 58'1 58'3 58'4 58'5 58'6 SHA 041° 039° 037° 034° 032° 030° Greenwich Culmination Time: 18:34										
UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	
00	284 27.8 +01.6	N 21 26.3 -00.1	329 41.8 +02.7	N 22 20.2 -00.1	63 45.5 +02.5	S 08 44.3 +00.0							
01	299 29.4 +01.7	N 21 26.2 -00.1	344 44.5 +02.8	N 22 20.1 +00.0	78 48.0 +02.5	S 08 44.3 +00.0							
02	314 31.1 +01.6	N 21 26.1 +00.0	359 47.3 +02.7	N 22 20.1 +00.0	93 50.5 +02.5	S 08 44.3 +00.0							
03	329 32.7 +01.7	N 21 26.1 -00.1	14 50.0 +02.7	N 22 20.1 +00.0	108 53.0 +02.5	S 08 44.3 +00.0							
04	344 34.4 +01.6	N 21 26.0 -00.1	29 52.7 +02.7	N 22 20.1 +00.0	123 55.5 +02.5	S 08 44.3 +00.0							
05	359 36.0 +01.7	N 21 25.9 -00.1	44 55.4 +02.8	N 22 20.1 +00.0	138 58.0 +02.5	S 08 44.3 +00.0							
06	14 37.7 +01.6	N 21 25.8 -00.1	59 58.2 +02.7	N 22 20.1 -00.1	154 00.5 +02.5	S 08 44.3 +00.0							
07	29 39.3 +01.7	N 21 25.7 -00.1	75 00.9 +02.7	N 22 20.0 +00.0	169 03.0 +02.5	S 08 44.3 +00.0							
08	44 41.0 +01.6	N 21 25.6 +00.0	90 03.6 +02.7	N 22 20.0 +00.0	184 05.5 +02.5	S 08 44.3 +00.0							
09	59 42.6 +01.7	N 21 25.6 -00.1	105 06.3 +02.8	N 22 20.0 +00.0	199 08.0 +02.5	S 08 44.3 +00.0							
10	74 44.3 +01.7	N 21 25.5 -00.1	120 09.1 +02.7	N 22 20.0 +00.0	214 10.5 +02.5	S 08 44.3 +00.0							
11	89 46.0 +01.6	N 21 25.4 -00.1	135 11.8 +02.7	N 22 20.0 +00.0	229 13.0 +02.5	S 08 44.3 +00.0							
12	104 47.6 +01.7	N 21 25.3 -00.1	150 14.5 +02.8	N 22 20.0 -00.1	244 15.5 +02.5	S 08 44.3 +00.0							
13	119 49.3 +01.6	N 21 25.2 +00.0	165 17.3 +02.7	N 22 19.9 +00.0	259 18.0 +02.4	S 08 44.3 +00.1							
14	134 50.9 +01.7	N 21 25.2 -00.1	180 20.0 +02.7	N 22 19.9 +00.0	274 20.4 +02.5	S 08 44.4 +00.0							
15	149 52.6 +01.7	N 21 25.1 -00.1	195 22.7 +02.7	N 22 19.9 +00.0	289 22.9 +02.5	S 08 44.4 +00.0							
16	164 54.3 +01.6	N 21 25.0 -00.1	210 25.4 +02.8	N 22 19.9 +00.0	304 25.4 +02.5	S 08 44.4 +00.0							
17	179 55.9 +01.7	N 21 24.9 -00.1	225 28.2 +02.7	N 22 19.9 +00.0	319 27.9 +02.5	S 08 44.4 +00.0							
18	194 57.6 +01.6	N 21 24.8 +00.0	240 30.9 +02.7	N 22 19.9 -00.1	334 30.4 +02.5	S 08 44.4 +00.0							
19	209 59.2 +01.7	N 21 24.8 -00.1	255 33.6 +02.8	N 22 19.8 +00.0	349 32.9 +02.5	S 08 44.4 +00.0							
20	225 00.9 +01.7	N 21 24.7 -00.1	270 36.4 +02.7	N 22 19.8 +00.0	4 35.4 +02.5	S 08 44.4 +00.0							
21	240 02.6 +01.6	N 21 24.6 -00.1	285 39.1 +02.7	N 22 19.8 +00.0	19 37.9 +02.5	S 08 44.4 +00.0							
22	255 04.2 +01.7	N 21 24.5 +00.0	300 41.8 +02.7	N 22 19.8 +00.0	34 40.4 +02.5	S 08 44.4 +00.0							
23	270 05.9 +01.7	N 21 24.5 -00.1	315 44.5 +02.8	N 22 19.8 -00.1	49 42.9 +02.4	S 08 44.4 +00.0							
	UT 02 06 10 14 18 22 SD 00'1 00'1 00'1 00'1 00'1 00'1 HP 00'2 00'2 00'2 00'2 00'2 00'2 SHA 236° 236° 236° 236° 236° 236° Greenwich Culmination Time: 05:01	UT 02 06 10 14 18 22 SD 00'4 00'4 00'4 00'4 00'4 00'4 HP 00'0 00'0 00'0 00'0 00'0 00'0 SHA 281° 281° 281° 281° 281° 281° Greenwich Culmination Time: 02:00	UT 02 06 10 14 18 22 SD 00'2 00'2 00'2 00'2 00'2 00'2 HP 00'0 00'0 00'0 00'0 00'0 00'0 SHA 015° 015° 015° 015° 015° 015° Greenwich Culmination Time: 19:41										



UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	184	01.4 +00.0	S 17 13.0	+00.7	141	58.9 -00.8	S 25 31.3	+00.1	78	38.1 -30.3	S 15 16.7	-14.4	00
01	199	01.4 -00.1	S 17 13.7	+00.7	156	58.1 -00.8	S 25 31.4	+00.2	93	07.8 -30.2	S 15 02.3	-14.5	01
02	214	01.3 +00.0	S 17 14.4	+00.7	171	57.3 -00.9	S 25 31.6	+00.1	107	37.6 -30.2	S 14 47.8	-14.6	02
03	229	01.3 -00.1	S 17 15.1	+00.7	186	56.4 -00.8	S 25 31.7	+00.1	122	07.4 -30.2	S 14 33.2	-14.7	03
04	244	01.2 -00.1	S 17 15.8	+00.7	201	55.6 -00.9	S 25 31.8	+00.1	136	37.2 -30.1	S 14 18.5	-14.8	04
05	259	01.1 +00.0	S 17 16.5	+00.7	216	54.7 -00.8	S 25 31.9	+00.2	151	07.1 -30.1	S 14 03.7	-14.9	05
06	274	01.1 -00.1	S 17 17.2	+00.7	231	53.9 -00.8	S 25 32.1	+00.1	165	37.0 -30.1	S 13 48.8	-15.0	06
07	289	01.0 -00.1	S 17 17.9	+00.7	246	53.1 -00.9	S 25 32.2	+00.1	180	06.9 -30.0	S 13 33.8	-15.0	07
08	304	00.9 +00.0	S 17 18.6	+00.7	261	52.2 -00.8	S 25 32.3	+00.1	194	36.9 -30.0	S 13 18.8	-15.2	08
09	319	00.9 -00.1	S 17 19.3	+00.6	276	51.4 -00.9	S 25 32.4	+00.1	209	06.9 -30.0	S 13 03.6	-15.2	09
10	334	00.8 -00.1	S 17 19.9	+00.7	291	50.5 -00.8	S 25 32.5	+00.1	223	36.9 -29.9	S 12 48.4	-15.3	10
11	349	00.7 +00.0	S 17 20.6	+00.7	306	49.7 -00.9	S 25 32.6	+00.2	238	07.0 -29.9	S 12 33.1	-15.4	11
12	4	00.7 -00.1	S 17 21.3	+00.7	321	48.8 -00.8	S 25 32.8	+00.1	252	37.1 -29.9	S 12 17.7	-15.5	12
13	19	00.6 -00.1	S 17 22.0	+00.7	336	48.0 -00.8	S 25 32.9	+00.1	267	07.2 -29.9	S 12 02.2	-15.5	13
14	34	00.5 +00.0	S 17 22.7	+00.7	351	47.2 -00.9	S 25 33.0	+00.1	281	37.3 -29.8	S 11 46.7	-15.6	14
15	49	00.5 -00.1	S 17 23.4	+00.7	6	46.3 -00.8	S 25 33.1	+00.1	296	07.5 -29.8	S 11 31.1	-15.8	15
16	64	00.4 -00.1	S 17 24.1	+00.7	21	45.5 -00.9	S 25 33.2	+00.1	310	37.7 -29.7	S 11 15.3	-15.7	16
17	79	00.3 +00.0	S 17 24.8	+00.7	36	44.6 -00.8	S 25 33.3	+00.1	325	08.0 -29.8	S 10 59.6	-15.9	17
18	94	00.3 -00.1	S 17 25.5	+00.7	51	43.8 -00.8	S 25 33.4	+00.1	339	38.2 -29.7	S 10 43.7	-15.9	18
19	109	00.2 -00.1	S 17 26.2	+00.7	66	43.0 -00.9	S 25 33.5	+00.1	354	08.5 -29.7	S 10 27.8	-16.0	19
20	124	00.1 +00.0	S 17 26.9	+00.6	81	42.1 -00.8	S 25 33.6	+00.1	8	38.8 -29.7	S 10 11.8	-16.0	20
21	139	00.1 -00.1	S 17 27.5	+00.7	96	41.3 -00.9	S 25 33.7	+00.1	23	09.1 -29.7	S 09 55.8	-16.2	21
22	153	00.0 -00.1	S 17 28.2	+00.7	111	40.4 -00.8	S 25 33.8	+00.1	37	39.4 -29.6	S 09 39.6	-16.2	22
23	168	59.9 +00.0	S 17 28.9	+00.7	126	39.6 -00.8	S 25 33.9	+00.1	52	09.8 -29.7	S 09 23.4	-16.2	23
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 16'2 16'2 16'2 16'2 16'2 16'2				SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 16'0 16'0 16'1 16'1 16'1 16'2				
	HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 58'8 58'9 59'0 59'1 59'3 59'4				
	SHA 134° 134° 134° 134° 134° 133°				SHA 092° 092° 092° 092° 091° 091°				SHA 028° 026° 024° 021° 019° 017°				
	Greenwich Culmination Time: 11:43				Greenwich Culmination Time: 14:32				Greenwich Culmination Time: 19:24				

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	285	07.6 +01.7	N 21 24.4	-00.1	330	47.3 +02.7	N 22 19.7	+00.0	64	45.3 +02.5	S 08 44.4	+00.0	00
01	300	09.3 +01.6	N 21 24.3	-00.1	345	50.0 +02.7	N 22 19.7	+00.0	79	47.8 +02.5	S 08 44.4	+00.0	01
02	315	10.9 +01.7	N 21 24.2	-00.1	0	52.7 +02.8	N 22 19.7	+00.0	94	50.3 +02.5	S 08 44.4	+00.0	02
03	330	12.6 +01.7	N 21 24.1	+00.0	15	55.5 +02.7	N 22 19.7	+00.0	109	52.8 +02.5	S 08 44.4	+00.0	03
04	345	14.3 +01.6	N 21 24.1	-00.1	30	58.2 +02.7	N 22 19.7	+00.0	124	55.3 +02.5	S 08 44.4	+00.0	04
05	0	15.9 +01.7	N 21 24.0	-00.1	46	00.9 +02.8	N 22 19.7	-00.1	139	57.8 +02.5	S 08 44.4	+00.0	05
06	15	17.6 +01.7	N 21 23.9	-00.1	61	03.7 +02.7	N 22 19.6	+00.0	155	00.3 +02.5	S 08 44.4	+00.0	06
07	30	19.3 +01.7	N 21 23.8	+00.0	76	06.4 +02.7	N 22 19.6	+00.0	170	02.8 +02.5	S 08 44.4	+00.0	07
08	45	21.0 +01.6	N 21 23.8	-00.1	91	09.1 +02.8	N 22 19.6	+00.0	185	05.3 +02.4	S 08 44.4	+00.0	08
09	60	22.6 +01.7	N 21 23.7	-00.1	106	11.9 +02.7	N 22 19.6	+00.0	200	07.7 +02.5	S 08 44.4	+00.0	09
10	75	24.3 +01.7	N 21 23.6	-00.1	121	14.6 +02.7	N 22 19.6	+00.0	215	10.2 +02.5	S 08 44.4	+00.0	10
11	90	26.0 +01.7	N 21 23.5	-00.1	136	17.3 +02.8	N 22 19.6	-00.1	230	12.7 +02.5	S 08 44.4	+00.0	11
12	105	27.7 +01.7	N 21 23.4	+00.0	151	20.1 +02.7	N 22 19.5	+00.0	245	15.2 +02.5	S 08 44.4	+00.0	12
13	120	29.4 +01.6	N 21 23.4	-00.1	166	22.8 +02.7	N 22 19.5	+00.0	260	17.7 +02.5	S 08 44.4	+00.0	13
14	135	31.0 +01.7	N 21 23.3	-00.1	181	25.5 +02.8	N 22 19.5	+00.0	275	20.2 +02.5	S 08 44.4	+00.0	14
15	150	32.7 +01.7	N 21 23.2	-00.1	196	28.3 +02.7	N 22 19.5	+00.0	290	22.7 +02.5	S 08 44.4	+00.0	15
16	165	34.4 +01.7	N 21 23.1	+00.0	211	31.0 +02.7	N 22 19.5	+00.0	305	25.2 +02.4	S 08 44.4	+00.0	16
17	180	36.1 +01.7	N 21 23.1	-00.1	226	33.7 +02.8	N 22 19.5	-00.1	320	27.6 +02.5	S 08 44.4	+00.0	17
18	195	37.8 +01.7	N 21 23.0	-00.1	241	36.5 +02.7	N 22 19.4	+00.0	335	30.1 +02.5	S 08 44.4	+00.0	18
19	210	39.5 +01.7	N 21 22.9	-00.1	256	39.2 +02.8	N 22 19.4	+00.0	350	32.6 +02.5	S 08 44.4	+00.0	19
20	225	41.2 +01.6	N 21 22.8	+00.0	271	42.0 +02.7	N 22 19.4	+00.0	5	35.1 +02.5	S 08 44.4	+00.0	20
21	240	42.8 +01.7	N 21 22.8	-00.1	286	44.7 +02.7	N 22 19.4	+00.0	20	37.6 +02.5	S 08 44.4	+00.0	21
22	255	44.5 +01.7	N 21 22.7	-00.1	301	47.4 +02.8	N 22 19.4	+00.0	35	40.1 +02.5	S 08 44.4	+00.0	22
23	270	46.2 +01.7	N 21 22.6	-00.1	316	50.2 +02.7	N 22 19.4	-00.1	50	42.6 +02.4	S 08 44.4	+00.0	23
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 00'4 00'4 00'4 00'4 00'4 00'4				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				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 235° 235° 235° 235° 235° 235°				SHA 281° 281° 281° 281° 281° 281°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 04:58				Greenwich Culmination Time: 01:56				Greenwich Culmination Time: 19:37				

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 59.9 -00.1	S	17 29.6 +00.7	141 38.8 -00.9	S	25 34.0 +00.1	66 40.1 -29.6	S	09 07.2 -16.4	00			
01	198 59.8 -00.1	S	17 30.3 +00.7	156 37.9 -00.8	S	25 34.1 +00.1	81 10.5 -29.6	S	08 50.8 -16.3	01			
02	213 59.7 -00.1	S	17 31.0 +00.7	171 37.1 -00.9	S	25 34.2 +00.1	95 40.9 -29.6	S	08 34.5 -16.5	02			
03	228 59.6 +00.0	S	17 31.7 +00.6	186 36.2 -00.8	S	25 34.3 +00.1	110 11.3 -29.5	S	08 18.0 -16.5	03			
04	243 59.6 -00.1	S	17 32.3 +00.7	201 35.4 -00.8	S	25 34.4 +00.1	124 41.8 -29.6	S	08 01.5 -16.5	04			
05	258 59.5 -00.1	S	17 33.0 +00.7	216 34.6 -00.9	S	25 34.5 +00.1	139 12.2 -29.6	S	07 45.0 -16.7	05			
06	273 59.4 -00.1	S	17 33.7 +00.7	231 33.7 -00.8	S	25 34.6 +00.0	153 42.6 -29.5	S	07 28.3 -16.6	06			
07	288 59.3 +00.0	S	17 34.4 +00.7	246 32.9 -00.9	S	25 34.6 +00.1	168 13.1 -29.5	S	07 11.7 -16.8	07			
08	303 59.3 -00.1	S	17 35.1 +00.7	261 32.0 -00.8	S	25 34.7 +00.1	182 43.6 -29.6	S	06 54.9 -16.7	08			
09	318 59.2 -00.1	S	17 35.8 +00.6	276 31.2 -00.9	S	25 34.8 +00.1	197 14.0 -29.5	S	06 38.2 -16.9	09			
10	333 59.1 +00.0	S	17 36.4 +00.7	291 30.3 -00.8	S	25 34.9 +00.1	211 44.5 -29.5	S	06 21.3 -16.9	10			
11	348 59.1 -00.1	S	17 37.1 +00.7	306 29.5 -00.8	S	25 35.0 +00.1	226 15.0 -29.5	S	06 04.4 -16.9	11			
12	3 59.0 -00.1	S	17 37.8 +00.7	321 28.7 -00.9	S	25 35.1 +00.1	240 45.5 -29.6	S	05 47.5 -17.0	12			
13	18 58.9 -00.1	S	17 38.5 +00.7	336 27.8 -00.8	S	25 35.2 +00.0	255 15.9 -29.5	S	05 30.5 -17.0	13			
14	33 58.8 +00.0	S	17 39.2 +00.6	351 27.0 -00.9	S	25 35.2 +00.1	269 46.4 -29.5	S	05 13.5 -17.0	14			
15	48 58.8 -00.1	S	17 39.8 +00.7	6 26.1 -00.8	S	25 35.3 +00.1	284 16.9 -29.5	S	04 56.5 -17.1	15			
16	63 58.7 -00.1	S	17 40.5 +00.7	21 25.3 -00.8	S	25 35.4 +00.1	298 47.4 -29.6	S	04 39.4 -17.2	16			
17	78 58.6 -00.1	S	17 41.2 +00.7	36 24.5 -00.9	S	25 35.5 +00.0	313 17.8 -29.5	S	04 22.2 -17.2	17			
18	93 58.5 -00.1	S	17 41.9 +00.6	51 23.6 -00.8	S	25 35.5 +00.1	327 48.3 -29.5	S	04 05.0 -17.2	18			
19	108 58.4 +00.0	S	17 42.5 +00.7	66 22.8 -00.9	S	25 35.6 +00.1	342 18.8 -29.6	S	03 47.8 -17.2	19			
20	123 58.4 -00.1	S	17 43.2 +00.7	81 21.9 -00.8	S	25 35.7 +00.1	356 49.2 -29.6	S	03 30.6 -17.3	20			
21	138 58.3 -00.1	S	17 43.9 +00.7	96 21.1 -00.8	S	25 35.8 +00.0	11 19.6 -29.5	S	03 13.3 -17.3	21			
22	153 58.2 -00.1	S	17 44.6 +00.6	111 20.3 -00.9	S	25 35.8 +00.1	25 50.1 -29.6	S	02 56.0 -17.4	22			
23	168 58.1 +00.0	S	17 45.2 +00.7	126 19.4 -00.8	S	25 35.9 +00.1	40 20.5 -29.6	S	02 38.6 -17.4	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'2 16'2 16'3 16'3 16'3 16'4						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 59'5 59'6 59'7 59'8 59'9 60'0						
	SHA 133° 133° 133° 133° 133° 132°			SHA 091° 091° 090° 090° 090° 090°			SHA 015° 013° 011° 009° 006° 004°						
	Greenwich Culmination Time: 11:44			Greenwich Culmination Time: 14:34			Greenwich Culmination Time: 20:13						
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	285 47.9 +01.7	N	21 22.5 +00.0	331 52.9 +02.7	N	22 19.3 +00.0	65 45.0 +02.5	S	08 44.4 +00.1	00			
01	300 49.6 +01.7	N	21 22.5 -00.1	346 55.6 +02.8	N	22 19.3 +00.0	80 47.5 +02.5	S	08 44.5 +00.0	01			
02	315 51.3 +01.7	N	21 22.4 -00.1	1 58.4 +02.7	N	22 19.3 +00.0	95 50.0 +02.5	S	08 44.5 +00.0	02			
03	330 53.0 +01.7	N	21 22.3 +00.0	17 01.1 +02.8	N	22 19.3 +00.0	110 52.5 +02.5	S	08 44.5 +00.0	03			
04	345 54.7 +01.7	N	21 22.3 -00.1	32 03.9 +02.7	N	22 19.3 -00.1	125 55.0 +02.5	S	08 44.5 +00.0	04			
05	0 56.4 +01.7	N	21 22.2 -00.1	47 06.6 +02.7	N	22 19.2 +00.0	140 57.5 +02.5	S	08 44.5 +00.0	05			
06	15 58.1 +01.7	N	21 22.1 -00.1	62 09.3 +02.8	N	22 19.2 +00.0	155 60.0 +02.4	S	08 44.5 +00.0	06			
07	30 59.8 +01.7	N	21 22.0 +00.0	77 12.1 +02.7	N	22 19.2 +00.0	171 02.4 +02.5	S	08 44.5 +00.0	07			
08	46 01.5 +01.7	N	21 22.0 -00.1	92 14.8 +02.7	N	22 19.2 +00.0	186 04.9 +02.5	S	08 44.5 +00.0	08			
09	61 03.2 +01.7	N	21 21.9 -00.1	107 17.5 +02.8	N	22 19.2 +00.0	201 07.4 +02.5	S	08 44.5 +00.0	09			
10	76 04.9 +01.7	N	21 21.8 -00.1	122 20.3 +02.7	N	22 19.2 -00.1	216 09.9 +02.5	S	08 44.5 +00.0	10			
11	91 06.6 +01.7	N	21 21.7 +00.0	137 23.0 +02.8	N	22 19.1 +00.0	231 12.4 +02.5	S	08 44.5 +00.0	11			
12	106 08.3 +01.7	N	21 21.7 -00.1	152 25.8 +02.7	N	22 19.1 +00.0	246 14.9 +02.4	S	08 44.5 +00.0	12			
13	121 10.0 +01.7	N	21 21.6 -00.1	167 28.5 +02.7	N	22 19.1 +00.0	261 17.3 +02.5	S	08 44.5 +00.0	13			
14	136 11.7 +01.7	N	21 21.5 +00.0	182 31.2 +02.8	N	22 19.1 +00.0	276 19.8 +02.5	S	08 44.5 +00.0	14			
15	151 13.4 +01.7	N	21 21.5 -00.1	197 34.0 +02.7	N	22 19.1 -00.1	291 22.3 +02.5	S	08 44.5 +00.0	15			
16	166 15.1 +01.7	N	21 21.4 -00.1	212 36.7 +02.8	N	22 19.0 +00.0	306 24.8 +02.5	S	08 44.5 +00.0	16			
17	181 16.8 +01.7	N	21 21.3 +00.0	227 39.5 +02.7	N	22 19.0 +00.0	321 27.3 +02.5	S	08 44.5 +00.0	17			
18	196 18.5 +01.7	N	21 21.3 -00.1	242 42.2 +02.8	N	22 19.0 +00.0	336 29.8 +02.4	S	08 44.5 +00.0	18			
19	211 20.2 +01.7	N	21 21.2 -00.1	257 45.0 +02.7	N	22 19.0 +00.0	351 32.2 +02.5	S	08 44.5 +00.0	19			
20	226 21.9 +01.8	N	21 21.1 -00.1	272 47.7 +02.7	N	22 19.0 +00.0	6 34.7 +02.5	S	08 44.5 +00.0	20			
21	241 23.7 +01.7	N	21 21.0 +00.0	287 50.4 +02.8	N	22 19.0 -00.1	21 37.2 +02.5	S	08 44.5 +00.0	21			
22	256 25.4 +01.7	N	21 21.0 -00.1	302 53.2 +02.7	N	22 18.9 +00.0	36 39.7 +02.5	S	08 44.5 +00.0	22			
23	271 27.1 +01.7	N	21 20.9 -00.1	317 55.9 +02.8	N	22 18.9 +00.0	51 42.2 +02.5	S	08 44.5 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			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			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 235° 235° 235° 235° 235° 235°			SHA 281° 281° 281° 281° 281° 281°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 04:56			Greenwich Culmination Time: 01:52			Greenwich Culmination Time: 19:33						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> <span style="float:right">A: 37%</span>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 58.1 -00.1	S	17 45.9 +00.7	141 18.6 -00.9	S	25 36.0 +00.0	54 50.9 -29.6	S	02 21.2 -17.4	00			
01	198 58.0 -00.1	S	17 46.6 +00.7	156 17.7 -00.8	S	25 36.0 +00.1	69 21.3 -29.6	S	02 03.8 -17.4	01			
02	213 57.9 -00.1	S	17 47.3 +00.6	171 16.9 -00.8	S	25 36.1 +00.0	83 51.7 -29.7	S	01 46.4 -17.5	02			
03	228 57.8 -00.1	S	17 47.9 +00.7	186 16.1 -00.9	S	25 36.1 +00.1	98 22.0 -29.7	S	01 28.9 -17.4	03			
04	243 57.7 +00.0	S	17 48.6 +00.7	201 15.2 -00.8	S	25 36.2 +00.1	112 52.3 -29.6	S	01 11.5 -17.5	04			
05	258 57.7 -00.1	S	17 49.3 +00.7	216 14.4 -00.9	S	25 36.3 +00.0	127 22.7 -29.7	S	00 54.0 -17.6	05			
06	273 57.6 -00.1	S	17 50.0 +00.6	231 13.5 -00.8	S	25 36.3 +00.1	141 53.0 -29.8	S	00 36.4 -17.5	06			
07	288 57.5 -00.1	S	17 50.6 +00.7	246 12.7 -00.8	S	25 36.4 +00.0	156 23.2 -29.7	S	00 18.9 -17.5	07			
08	303 57.4 -00.1	S	17 51.3 +00.7	261 11.9 -00.9	S	25 36.4 +00.1	170 53.5 -29.8	S	00 01.4 -17.6	08			
09	318 57.3 -00.1	S	17 52.0 +00.6	276 11.0 -00.8	S	25 36.5 +00.1	185 23.7 -29.8	N	00 16.2 +17.6	09			
10	333 57.2 +00.0	S	17 52.6 +00.7	291 10.2 -00.8	S	25 36.6 +00.0	199 53.9 -29.8	N	00 33.8 +17.6	10			
11	348 57.2 -00.1	S	17 53.3 +00.7	306 09.4 -00.9	S	25 36.6 +00.1	214 24.1 -29.9	N	00 51.4 +17.6	11			
12	3 57.1 -00.1	S	17 54.0 +00.6	321 08.5 -00.8	S	25 36.7 +00.0	228 54.2 -29.9	N	01 09.0 +17.6	12			
13	18 57.0 -00.1	S	17 54.6 +00.7	336 07.7 -00.9	S	25 36.7 +00.1	243 24.3 -29.9	N	01 26.6 +17.6	13			
14	33 56.9 -00.1	S	17 55.3 +00.7	351 06.8 -00.8	S	25 36.8 +00.0	257 54.4 -30.0	N	01 44.2 +17.6	14			
15	48 56.8 -00.1	S	17 56.0 +00.6	6 06.0 -00.8	S	25 36.8 +00.0	272 24.4 -30.0	N	02 01.8 +17.6	15			
16	63 56.7 +00.0	S	17 56.6 +00.7	21 05.2 -00.9	S	25 36.8 +00.1	286 54.4 -30.0	N	02 19.4 +17.6	16			
17	78 56.7 -00.1	S	17 57.3 +00.7	36 04.3 -00.8	S	25 36.9 +00.0	301 24.4 -30.1	N	02 37.0 +17.6	17			
18	93 56.6 -00.1	S	17 58.0 +00.6	51 03.5 -00.9	S	25 36.9 +00.1	315 54.3 -30.1	N	02 54.6 +17.6	18			
19	108 56.5 -00.1	S	17 58.6 +00.7	66 02.6 -00.8	S	25 37.0 +00.0	330 24.2 -30.2	N	03 12.2 +17.6	19			
20	123 56.4 -00.1	S	17 59.3 +00.6	81 01.8 -00.8	S	25 37.0 +00.1	344 54.0 -30.1	N	03 29.8 +17.6	20			
21	138 56.3 -00.1	S	17 59.9 +00.7	96 01.0 -00.9	S	25 37.1 +00.0	359 23.9 -30.3	N	03 47.4 +17.6	21			
22	153 56.2 -00.1	S	18 00.6 +00.7	111 00.1 -00.8	S	25 37.1 +00.0	13 53.6 -30.3	N	04 05.0 +17.6	22			
23	168 56.1 -00.1	S	18 01.3 +00.6	125 59.3 -00.8	S	25 37.1 +00.1	28 23.3 -30.3	N	04 22.6 +17.6	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'4 16'4 16'4 16'5 16'5 16'5						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 60'1 60'2 60'3 60'4 60'5 60'5						
	SHA 132° 132° 132° 132° 132° 131°			SHA 090° 089° 089° 089° 089° 088°			SHA 002° 000° 358° 356° 354° 351°						
	Greenwich Culmination Time: 11:44			Greenwich Culmination Time: 14:35			Greenwich Culmination Time: 21:02						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	286 28.8 +01.7	N	21 20.8 +00.0	332 58.7 +02.7	N	22 18.9 +00.0	66 44.7 +02.4	S	08 44.5 +00.0	00			
01	301 30.5 +01.7	N	21 20.8 -00.1	348 01.4 +02.8	N	22 18.9 +00.0	81 47.1 +02.5	S	08 44.5 +00.0	01			
02	316 32.2 +01.7	N	21 20.7 -00.1	3 04.2 +02.7	N	22 18.9 +00.0	96 49.6 +02.5	S	08 44.5 +00.0	02			
03	331 33.9 +01.8	N	21 20.6 +00.0	18 06.9 +02.8	N	22 18.9 -00.1	111 52.1 +02.5	S	08 44.5 +00.0	03			
04	346 35.7 +01.7	N	21 20.6 -00.1	33 09.7 +02.7	N	22 18.8 +00.0	126 54.6 +02.5	S	08 44.5 +00.0	04			
05	1 37.4 +01.7	N	21 20.5 -00.1	48 12.4 +02.7	N	22 18.8 +00.0	141 57.1 +02.4	S	08 44.5 +00.0	05			
06	16 39.1 +01.7	N	21 20.4 +00.0	63 15.1 +02.8	N	22 18.8 +00.0	156 59.5 +02.5	S	08 44.5 +00.0	06			
07	31 40.8 +01.7	N	21 20.4 -00.1	78 17.9 +02.7	N	22 18.8 +00.0	172 02.0 +02.5	S	08 44.5 +00.0	07			
08	46 42.5 +01.8	N	21 20.3 -00.1	93 20.6 +02.8	N	22 18.8 -00.1	187 04.5 +02.5	S	08 44.5 +00.0	08			
09	61 44.3 +01.7	N	21 20.2 -00.1	108 23.4 +02.7	N	22 18.7 +00.0	202 07.0 +02.5	S	08 44.5 +00.0	09			
10	76 46.0 +01.7	N	21 20.1 +00.0	123 26.1 +02.8	N	22 18.7 +00.0	217 09.5 +02.4	S	08 44.5 +00.0	10			
11	91 47.7 +01.7	N	21 20.1 -00.1	138 28.9 +02.7	N	22 18.7 +00.0	232 11.9 +02.5	S	08 44.5 +00.0	11			
12	106 49.4 +01.8	N	21 20.0 -00.1	153 31.6 +02.8	N	22 18.7 +00.0	247 14.4 +02.5	S	08 44.5 +00.0	12			
13	121 51.2 +01.7	N	21 19.9 +00.0	168 34.4 +02.7	N	22 18.7 -00.1	262 16.9 +02.5	S	08 44.5 +00.0	13			
14	136 52.9 +01.7	N	21 19.9 -00.1	183 37.1 +02.8	N	22 18.6 +00.0	277 19.4 +02.5	S	08 44.5 +00.0	14			
15	151 54.6 +01.7	N	21 19.8 -00.1	198 39.9 +02.7	N	22 18.6 +00.0	292 21.9 +02.4	S	08 44.5 +00.0	15			
16	166 56.3 +01.8	N	21 19.7 +00.0	213 42.6 +02.8	N	22 18.6 +00.0	307 24.3 +02.5	S	08 44.5 +00.0	16			
17	181 58.1 +01.7	N	21 19.7 -00.1	228 45.4 +02.7	N	22 18.6 +00.0	322 26.8 +02.5	S	08 44.5 +00.0	17			
18	196 59.8 +01.7	N	21 19.6 +00.0	243 48.1 +02.8	N	22 18.6 +00.0	337 29.3 +02.5	S	08 44.5 -00.1	18			
19	212 01.5 +01.8	N	21 19.6 -00.1	258 50.9 +02.7	N	22 18.6 -00.1	352 31.8 +02.4	S	08 44.4 +00.0	19			
20	227 03.3 +01.7	N	21 19.5 -00.1	273 53.6 +02.8	N	22 18.5 +00.0	7 34.2 +02.5	S	08 44.4 +00.0	20			
21	242 05.0 +01.7	N	21 19.4 +00.0	288 56.4 +02.7	N	22 18.5 +00.0	22 36.7 +02.5	S	08 44.4 +00.0	21			
22	257 06.7 +01.8	N	21 19.4 -00.1	303 59.1 +02.8	N	22 18.5 +00.0	37 39.2 +02.5	S	08 44.4 +00.0	22			
23	272 08.5 +01.7	N	21 19.3 -00.1	319 01.9 +02.7	N	22 18.5 +00.0	52 41.7 +02.5	S	08 44.4 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'2 00'2 00'2 00'2 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 235° 235° 235° 235° 235° 235°			SHA 281° 281° 281° 281° 281° 281°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 04:53			Greenwich Culmination Time: 01:47			Greenwich Culmination Time: 19:29						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> <span style="float: right;">A: 40%</span>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 56.0 +00.0	S	18 01.9 +00.7	140 58.5 -00.9	S	25 37.2 +00.0	42 53.0 -30.4	N	04 40.2 +17.5	00			
01	198 56.0 -00.1	S	18 02.6 +00.7	155 57.6 -00.8	S	25 37.2 +00.0	57 22.6 -30.4	N	04 57.7 +17.5	01			
02	213 55.9 -00.1	S	18 03.3 +00.6	170 56.8 -00.9	S	25 37.2 +00.1	71 52.2 -30.5	N	05 15.2 +17.5	02			
03	228 55.8 -00.1	S	18 03.9 +00.7	185 55.9 -00.8	S	25 37.3 +00.0	86 21.7 -30.5	N	05 32.7 +17.5	03			
04	243 55.7 -00.1	S	18 04.6 +00.6	200 55.1 -00.8	S	25 37.3 +00.0	100 51.2 -30.6	N	05 50.2 +17.5	04			
05	258 55.6 -00.1	S	18 05.2 +00.7	215 54.3 -00.9	S	25 37.3 +00.1	115 20.6 -30.6	N	06 07.7 +17.4	05			
06	273 55.5 -00.1	S	18 05.9 +00.6	230 53.4 -00.8	S	25 37.4 +00.0	129 50.0 -30.7	N	06 25.1 +17.4	06			
07	288 55.4 -00.1	S	18 06.5 +00.7	245 52.6 -00.8	S	25 37.4 +00.0	144 19.3 -30.7	N	06 42.5 +17.4	07			
08	303 55.3 -00.1	S	18 07.2 +00.7	260 51.8 -00.9	S	25 37.4 +00.0	158 48.6 -30.8	N	06 59.9 +17.4	08			
09	318 55.2 -00.1	S	18 07.9 +00.6	275 50.9 -00.8	S	25 37.4 +00.1	173 17.8 -30.9	N	07 17.3 +17.3	09			
10	333 55.1 +00.0	S	18 08.5 +00.7	290 50.1 -00.9	S	25 37.5 +00.0	187 46.9 -30.9	N	07 34.6 +17.3	10			
11	348 55.1 -00.1	S	18 09.2 +00.6	305 49.2 -00.8	S	25 37.5 +00.0	202 16.0 -31.0	N	07 51.9 +17.3	11			
12	3 55.0 -00.1	S	18 09.8 +00.7	320 48.4 -00.8	S	25 37.5 +00.0	216 45.0 -31.0	N	08 09.2 +17.2	12			
13	18 54.9 -00.1	S	18 10.5 +00.6	335 47.6 -00.9	S	25 37.5 +00.0	231 14.0 -31.1	N	08 26.4 +17.1	13			
14	33 54.8 -00.1	S	18 11.1 +00.7	350 46.7 -00.8	S	25 37.5 +00.1	245 42.9 -31.2	N	08 43.5 +17.2	14			
15	48 54.7 -00.1	S	18 11.8 +00.6	5 45.9 -00.8	S	25 37.6 +00.0	260 11.7 -31.3	N	09 00.7 +17.1	15			
16	63 54.6 -00.1	S	18 12.4 +00.7	20 45.1 -00.9	S	25 37.6 +00.0	274 40.4 -31.3	N	09 17.8 +17.0	16			
17	78 54.5 -00.1	S	18 13.1 +00.6	35 44.2 -00.8	S	25 37.6 +00.0	289 09.1 -31.3	N	09 34.8 +17.0	17			
18	93 54.4 -00.1	S	18 13.7 +00.7	50 43.4 -00.8	S	25 37.6 +00.0	303 37.8 -31.5	N	09 51.8 +16.9	18			
19	108 54.3 -00.1	S	18 14.4 +00.6	65 42.6 -00.9	S	25 37.6 +00.0	318 06.3 -31.5	N	10 08.7 +16.9	19			
20	123 54.2 -00.1	S	18 15.0 +00.7	80 41.7 -00.8	S	25 37.6 +00.0	332 34.8 -31.6	N	10 25.6 +16.8	20			
21	138 54.1 -00.1	S	18 15.7 +00.6	95 40.9 -00.9	S	25 37.6 +00.0	347 03.2 -31.7	N	10 42.4 +16.8	21			
22	153 54.0 -00.1	S	18 16.3 +00.7	110 40.0 -00.8	S	25 37.6 +00.1	1 31.5 -31.7	N	10 59.2 +16.7	22			
23	168 53.9 -00.1	S	18 17.0 +00.6	125 39.2 -00.8	S	25 37.7 +00.0	15 59.8 -31.8	N	11 15.9 +16.7	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'5 16'5 16'5 16'6 16'6 16'6						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 60'6 60'7 60'7 60'8 60'8 60'8						
	SHA 131° 131° 131° 131° 131° 130°			SHA 088° 088° 088° 088° 087° 087°			SHA 349° 347° 345° 343° 340° 338°						
	Greenwich Culmination Time: 11:44			Greenwich Culmination Time: 14:36			Greenwich Culmination Time: 21:53						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	287 10.2 +01.7	N	21 19.2 +00.0	334 04.6 +02.8	N	22 18.5 -00.1	67 44.2 +02.4	S	08 44.4 +00.0	00			
01	302 11.9 +01.8	N	21 19.2 -00.1	349 07.4 +02.7	N	22 18.4 +00.0	82 46.6 +02.5	S	08 44.4 +00.0	01			
02	317 13.7 +01.7	N	21 19.1 -00.1	4 10.1 +02.8	N	22 18.4 +00.0	97 49.1 +02.5	S	08 44.4 +00.0	02			
03	332 15.4 +01.8	N	21 19.0 +00.0	19 12.9 +02.7	N	22 18.4 +00.0	112 51.6 +02.5	S	08 44.4 +00.0	03			
04	347 17.2 +01.7	N	21 19.0 -00.1	34 15.6 +02.8	N	22 18.4 +00.0	127 54.1 +02.4	S	08 44.4 +00.0	04			
05	2 18.9 +01.7	N	21 18.9 -00.1	49 18.4 +02.7	N	22 18.4 +00.0	142 56.5 +02.5	S	08 44.4 +00.0	05			
06	17 20.6 +01.8	N	21 18.8 +00.0	64 21.1 +02.8	N	22 18.4 -00.1	157 59.0 +02.5	S	08 44.4 +00.0	06			
07	32 22.4 +01.7	N	21 18.8 -00.1	79 23.9 +02.7	N	22 18.3 +00.0	173 01.5 +02.5	S	08 44.4 +00.0	07			
08	47 24.1 +01.8	N	21 18.7 +00.0	94 26.6 +02.8	N	22 18.3 +00.0	188 04.0 +02.5	S	08 44.4 +00.0	08			
09	62 25.9 +01.7	N	21 18.7 -00.1	109 29.4 +02.7	N	22 18.3 +00.0	203 06.5 +02.4	S	08 44.4 +00.0	09			
10	77 27.6 +01.8	N	21 18.6 -00.1	124 32.1 +02.8	N	22 18.3 +00.0	218 08.9 +02.5	S	08 44.4 +00.0	10			
11	92 29.4 +01.7	N	21 18.5 +00.0	139 34.9 +02.7	N	22 18.3 -00.1	233 11.4 +02.5	S	08 44.4 +00.0	11			
12	107 31.1 +01.8	N	21 18.5 -00.1	154 37.6 +02.8	N	22 18.2 +00.0	248 13.9 +02.5	S	08 44.4 +00.0	12			
13	122 32.9 +01.7	N	21 18.4 -00.1	169 40.4 +02.7	N	22 18.2 +00.0	263 16.4 +02.4	S	08 44.4 +00.0	13			
14	137 34.6 +01.8	N	21 18.3 +00.0	184 43.1 +02.8	N	22 18.2 +00.0	278 18.8 +02.5	S	08 44.4 +00.0	14			
15	152 36.4 +01.7	N	21 18.3 -00.1	199 45.9 +02.7	N	22 18.2 +00.0	293 21.3 +02.5	S	08 44.4 +00.0	15			
16	167 38.1 +01.8	N	21 18.2 +00.0	214 48.6 +02.8	N	22 18.2 -00.1	308 23.8 +02.5	S	08 44.4 +00.0	16			
17	182 39.9 +01.7	N	21 18.2 -00.1	229 51.4 +02.7	N	22 18.1 +00.0	323 26.3 +02.4	S	08 44.4 +00.0	17			
18	197 41.6 +01.8	N	21 18.1 -00.1	244 54.1 +02.8	N	22 18.1 +00.0	338 28.7 +02.5	S	08 44.4 +00.0	18			
19	212 43.4 +01.7	N	21 18.0 +00.0	259 56.9 +02.8	N	22 18.1 +00.0	353 31.2 +02.5	S	08 44.4 +00.0	19			
20	227 45.1 +01.8	N	21 18.0 -00.1	274 59.7 +02.7	N	22 18.1 +00.0	8 33.7 +02.4	S	08 44.4 +00.0	20			
21	242 46.9 +01.8	N	21 17.9 +00.0	290 02.4 +02.8	N	22 18.1 -00.1	23 36.1 +02.5	S	08 44.4 +00.0	21			
22	257 48.7 +01.7	N	21 17.9 -00.1	305 05.2 +02.7	N	22 18.0 +00.0	38 38.6 +02.5	S	08 44.4 +00.0	22			
23	272 50.4 +01.8	N	21 17.8 -00.1	320 07.9 +02.8	N	22 18.0 +00.0	53 41.1 +02.5	S	08 44.4 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 235° 234° 234° 234° 234° 234°			SHA 281° 282° 282° 282° 282° 282°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 04:50			Greenwich Culmination Time: 01:43			Greenwich Culmination Time: 19:25						

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 53.8 -00.1	S	18 17.6 +00.7	140 38.4 -00.9	S	25 37.7 +00.0	30 28.0 -31.9	N	11 32.6 +16.6				
01	198 53.7 -00.1	S	18 18.3 +00.6	155 37.5 -00.8	S	25 37.7 +00.0	44 56.1 -32.0	N	11 49.2 +16.5				
02	213 53.6 -00.1	S	18 18.9 +00.7	170 36.7 -00.8	S	25 37.7 +00.0	59 24.1 -32.0	N	12 05.7 +16.5				
03	228 53.5 -00.1	S	18 19.6 +00.6	185 35.9 -00.9	S	25 37.7 +00.0	73 52.1 -32.1	N	12 22.2 +16.3				
04	243 53.4 -00.1	S	18 20.2 +00.7	200 35.0 -00.8	S	25 37.7 +00.0	88 20.0 -32.2	N	12 38.5 +16.4				
05	258 53.3 -00.1	S	18 20.9 +00.6	215 34.2 -00.8	S	25 37.7 +00.0	102 47.8 -32.3	N	12 54.9 +16.2				
06	273 53.2 -00.1	S	18 21.5 +00.6	230 33.4 -00.9	S	25 37.7 +00.0	117 15.5 -32.4	N	13 11.1 +16.2				
07	288 53.1 -00.1	S	18 22.1 +00.7	245 32.5 -00.8	S	25 37.7 +00.0	131 43.1 -32.4	N	13 27.3 +16.1				
08	303 53.0 -00.1	S	18 22.8 +00.6	260 31.7 -00.8	S	25 37.7 +00.0	146 10.7 -32.5	N	13 43.4 +16.0				
09	318 52.9 -00.1	S	18 23.4 +00.7	275 30.9 -00.9	S	25 37.7 -00.1	160 38.2 -32.7	N	13 59.4 +15.9				
10	333 52.8 -00.1	S	18 24.1 +00.6	290 30.0 -00.8	S	25 37.6 +00.0	175 05.5 -32.7	N	14 15.3 +15.8				
11	348 52.7 -00.1	S	18 24.7 +00.7	305 29.2 -00.8	S	25 37.6 +00.0	189 32.8 -32.7	N	14 31.1 +15.8				
12	3 52.6 -00.1	S	18 25.4 +00.6	320 28.4 -00.9	S	25 37.6 +00.0	204 00.1 -32.9	N	14 46.9 +15.6				
13	18 52.5 -00.1	S	18 26.0 +00.6	335 27.5 -00.8	S	25 37.6 +00.0	218 27.2 -33.0	N	15 02.5 +15.6				
14	33 52.4 -00.1	S	18 26.6 +00.7	350 26.7 -00.8	S	25 37.6 +00.0	232 54.2 -33.0	N	15 18.1 +15.5				
15	48 52.3 -00.1	S	18 27.3 +00.6	5 25.9 -00.9	S	25 37.6 +00.0	247 21.2 -33.2	N	15 33.6 +15.4				
16	63 52.2 -00.1	S	18 27.9 +00.7	20 25.0 -00.8	S	25 37.6 +00.0	261 48.0 -33.2	N	15 49.0 +15.3				
17	78 52.1 -00.1	S	18 28.6 +00.6	35 24.2 -00.8	S	25 37.6 -00.1	276 14.8 -33.3	N	16 04.3 +15.1				
18	93 52.0 -00.1	S	18 29.2 +00.6	50 23.4 -00.9	S	25 37.5 +00.0	290 41.5 -33.4	N	16 19.4 +15.1				
19	108 51.9 -00.1	S	18 29.8 +00.7	65 22.5 -00.8	S	25 37.5 +00.0	305 08.1 -33.5	N	16 34.5 +15.0				
20	123 51.8 -00.1	S	18 30.5 +00.6	80 21.7 -00.8	S	25 37.5 +00.0	319 34.6 -33.6	N	16 49.5 +14.9				
21	138 51.7 -00.1	S	18 31.1 +00.6	95 20.9 -00.9	S	25 37.5 +00.0	334 01.0 -33.6	N	17 04.4 +14.7				
22	153 51.6 -00.1	S	18 31.7 +00.7	110 20.0 -00.8	S	25 37.5 -00.1	348 27.4 -33.8	N	17 19.1 +14.7				
23	168 51.5 -00.1	S	18 32.4 +00.6	125 19.2 -00.8	S	25 37.4 +00.0	2 53.6 -33.9	N	17 33.8 +14.5				
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'6 16'6 16'6 16'6 16'6 16'6						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 60'8 60'9 60'9 60'9 60'8 60'8						
	SHA 130° 130° 130° 130° 130° 129°			SHA 087° 087° 087° 086° 086° 086°			SHA 336° 333° 331° 329° 326° 324°						
	Greenwich Culmination Time: 11:44			Greenwich Culmination Time: 14:38			Greenwich Culmination Time: 22:47						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	287 52.2 +01.7	N	21 17.7 +00.0	335 10.7 +02.7	N	22 18.0 +00.0	68 43.6 +02.4	S	08 44.4 +00.0				
01	302 53.9 +01.8	N	21 17.7 -00.1	350 13.4 +02.8	N	22 18.0 +00.0	83 46.0 +02.5	S	08 44.4 +00.0				
02	317 55.7 +01.8	N	21 17.6 +00.0	5 16.2 +02.8	N	22 18.0 -00.1	98 48.5 +02.5	S	08 44.4 +00.0				
03	332 57.5 +01.7	N	21 17.6 -00.1	20 19.0 +02.7	N	22 17.9 +00.0	113 51.0 +02.5	S	08 44.4 +00.0				
04	347 59.2 +01.8	N	21 17.5 -00.1	35 21.7 +02.8	N	22 17.9 +00.0	128 53.5 +02.4	S	08 44.4 +00.0				
05	3 01.0 +01.7	N	21 17.4 +00.0	50 24.5 +02.7	N	22 17.9 +00.0	143 55.9 +02.5	S	08 44.4 +00.0				
06	18 02.7 +01.8	N	21 17.4 -00.1	65 27.2 +02.8	N	22 17.9 +00.0	158 58.4 +02.5	S	08 44.4 -00.1				
07	33 04.5 +01.8	N	21 17.3 +00.0	80 30.0 +02.7	N	22 17.9 +00.0	174 00.9 +02.5	S	08 44.3 +00.0				
08	48 06.3 +01.8	N	21 17.3 -00.1	95 32.7 +02.8	N	22 17.9 -00.1	189 03.4 +02.4	S	08 44.3 +00.0				
09	63 08.1 +01.7	N	21 17.2 +00.0	110 35.5 +02.8	N	22 17.8 +00.0	204 05.8 +02.5	S	08 44.3 +00.0				
10	78 09.8 +01.8	N	21 17.2 -00.1	125 38.3 +02.7	N	22 17.8 +00.0	219 08.3 +02.5	S	08 44.3 +00.0				
11	93 11.6 +01.8	N	21 17.1 -00.1	140 41.0 +02.8	N	22 17.8 +00.0	234 10.8 +02.4	S	08 44.3 +00.0				
12	108 13.4 +01.7	N	21 17.0 +00.0	155 43.8 +02.7	N	22 17.8 +00.0	249 13.2 +02.5	S	08 44.3 +00.0				
13	123 15.1 +01.8	N	21 17.0 -00.1	170 46.5 +02.8	N	22 17.8 -00.1	264 15.7 +02.5	S	08 44.3 +00.0				
14	138 16.9 +01.8	N	21 16.9 +00.0	185 49.3 +02.8	N	22 17.7 +00.0	279 18.2 +02.5	S	08 44.3 +00.0				
15	153 18.7 +01.8	N	21 16.9 -00.1	200 52.1 +02.7	N	22 17.7 +00.0	294 20.7 +02.4	S	08 44.3 +00.0				
16	168 20.5 +01.7	N	21 16.8 +00.0	215 54.8 +02.8	N	22 17.7 +00.0	309 23.1 +02.5	S	08 44.3 +00.0				
17	183 22.2 +01.8	N	21 16.8 -00.1	230 57.6 +02.7	N	22 17.7 +00.0	324 25.6 +02.5	S	08 44.3 +00.0				
18	198 24.0 +01.8	N	21 16.7 +00.0	246 00.3 +02.8	N	22 17.7 -00.1	339 28.1 +02.4	S	08 44.3 +00.0				
19	213 25.8 +01.8	N	21 16.7 -00.1	261 03.1 +02.8	N	22 17.6 +00.0	354 30.5 +02.5	S	08 44.3 +00.0				
20	228 27.6 +01.8	N	21 16.6 -00.1	276 05.9 +02.7	N	22 17.6 +00.0	9 33.0 +02.5	S	08 44.3 +00.0				
21	243 29.4 +01.7	N	21 16.5 +00.0	291 08.6 +02.8	N	22 17.6 +00.0	24 35.5 +02.4	S	08 44.3 +00.0				
22	258 31.1 +01.8	N	21 16.5 -00.1	306 11.4 +02.7	N	22 17.6 +00.0	39 37.9 +02.5	S	08 44.3 +00.0				
23	273 32.9 +01.8	N	21 16.4 +00.0	321 14.1 +02.8	N	22 17.6 -00.1	54 40.4 +02.5	S	08 44.3 +00.0				
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 234° 234° 234° 234° 234° 234°			SHA 282° 282° 282° 282° 282° 282°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 04:47			Greenwich Culmination Time: 01:38			Greenwich Culmination Time: 19:21						

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 51.4 -00.1	S	18 33.0 +00.6	140 18.4 -00.9	S	25 37.4 +00.0	17 19.7 -33.9	N	17 48.3 +14.5	00			
01	198 51.3 -00.1	S	18 33.6 +00.7	155 17.5 -00.8	S	25 37.4 +00.0	31 45.8 -34.1	N	18 02.8 +14.3	01			
02	213 51.2 -00.1	S	18 34.3 +00.6	170 16.7 -00.8	S	25 37.4 -00.1	46 11.7 -34.1	N	18 17.1 +14.1	02			
03	228 51.1 -00.1	S	18 34.9 +00.6	185 15.9 -00.9	S	25 37.3 +00.0	60 37.6 -34.2	N	18 31.2 +14.1	03			
04	243 51.0 -00.1	S	18 35.5 +00.7	200 15.0 -00.8	S	25 37.3 +00.0	75 03.4 -34.3	N	18 45.3 +14.0	04			
05	258 50.9 -00.1	S	18 36.2 +00.6	215 14.2 -00.8	S	25 37.3 -00.1	89 29.1 -34.4	N	18 59.3 +13.8	05			
06	273 50.8 -00.1	S	18 36.8 +00.6	230 13.4 -00.9	S	25 37.2 +00.0	103 54.7 -34.6	N	19 13.1 +13.7	06			
07	288 50.7 -00.1	S	18 37.4 +00.7	245 12.5 -00.8	S	25 37.2 +00.0	118 20.1 -34.5	N	19 26.8 +13.5	07			
08	303 50.6 -00.2	S	18 38.1 +00.6	260 11.7 -00.8	S	25 37.2 -00.1	132 45.6 -34.7	N	19 40.3 +13.5	08			
09	318 50.4 -00.1	S	18 38.7 +00.6	275 10.9 -00.8	S	25 37.1 +00.0	147 10.9 -34.8	N	19 53.8 +13.2	09			
10	333 50.3 -00.1	S	18 39.3 +00.6	290 10.1 -00.9	S	25 37.1 +00.0	161 36.1 -34.9	N	20 07.0 +13.2	10			
11	348 50.2 -00.1	S	18 39.9 +00.7	305 09.2 -00.8	S	25 37.1 -00.1	176 01.2 -34.9	N	20 20.2 +13.0	11			
12	3 50.1 -00.1	S	18 40.6 +00.6	320 08.4 -00.8	S	25 37.0 +00.0	190 26.3 -35.1	N	20 33.2 +12.9	12			
13	18 50.0 -00.1	S	18 41.2 +00.6	335 07.6 -00.9	S	25 37.0 -00.1	204 51.2 -35.1	N	20 46.1 +12.8	13			
14	33 49.9 -00.1	S	18 41.8 +00.6	350 06.7 -00.8	S	25 36.9 +00.0	219 16.1 -35.3	N	20 58.9 +12.5	14			
15	48 49.8 -00.1	S	18 42.4 +00.7	5 05.9 -00.8	S	25 36.9 -00.1	233 40.8 -35.3	N	21 11.4 +12.5	15			
16	63 49.7 -00.1	S	18 43.1 +00.6	20 05.1 -00.9	S	25 36.8 +00.0	248 05.5 -35.4	N	21 23.9 +12.3	16			
17	78 49.6 -00.1	S	18 43.7 +00.6	35 04.2 -00.8	S	25 36.8 -00.1	262 30.1 -35.5	N	21 36.2 +12.2	17			
18	93 49.5 -00.2	S	18 44.3 +00.6	50 03.4 -00.8	S	25 36.7 +00.0	276 54.6 -35.6	N	21 48.4 +12.0	18			
19	108 49.3 -00.1	S	18 44.9 +00.7	65 02.6 -00.8	S	25 36.7 -00.1	291 19.0 -35.7	N	22 00.4 +11.8	19			
20	123 49.2 -00.1	S	18 45.6 +00.6	80 01.8 -00.9	S	25 36.6 +00.0	305 43.3 -35.7	N	22 12.2 +11.7	20			
21	138 49.1 -00.1	S	18 46.2 +00.6	95 00.9 -00.8	S	25 36.6 -00.1	320 07.6 -35.9	N	22 23.9 +11.5	21			
22	153 49.0 -00.1	S	18 46.8 +00.6	110 00.1 -00.8	S	25 36.5 +00.0	334 31.7 -35.9	N	22 35.4 +11.4	22			
23	168 48.9 -00.1	S	18 47.4 +00.6	124 59.3 -00.9	S	25 36.5 -00.1	348 55.8 -36.0	N	22 46.8 +11.2	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'6 16'6 16'5 16'5 16'5 16'5						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 60'8 60'8 60'7 60'7 60'6 60'6						
	SHA 129° 129° 129° 129° 129° 128°			SHA 086° 085° 085° 085° 085° 085°			SHA 322° 319° 317° 314° 312° 309°						
	Greenwich Culmination Time: 11:44			Greenwich Culmination Time: 14:39			Greenwich Culmination Time: 23:46						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	288 34.7 +01.8	N	21 16.4 -00.1	336 16.9 +02.8	N	22 17.5 +00.0	69 42.9 +02.5	S	08 44.3 +00.0	00			
01	303 36.5 +01.8	N	21 16.3 +00.0	351 19.7 +02.7	N	22 17.5 +00.0	84 45.4 +02.4	S	08 44.3 +00.0	01			
02	318 38.3 +01.8	N	21 16.3 -00.1	6 22.4 +02.8	N	22 17.5 +00.0	99 47.8 +02.5	S	08 44.3 +00.0	02			
03	333 40.1 +01.7	N	21 16.2 +00.0	21 25.2 +02.7	N	22 17.5 +00.0	114 50.3 +02.5	S	08 44.3 -00.1	03			
04	348 41.8 +01.8	N	21 16.2 -00.1	36 27.9 +02.8	N	22 17.5 -00.1	129 52.8 +02.4	S	08 44.2 +00.0	04			
05	3 43.6 +01.8	N	21 16.1 +00.0	51 30.7 +02.8	N	22 17.4 +00.0	144 55.2 +02.5	S	08 44.2 +00.0	05			
06	18 45.4 +01.8	N	21 16.1 -00.1	66 33.5 +02.7	N	22 17.4 +00.0	159 57.7 +02.5	S	08 44.2 +00.0	06			
07	33 47.2 +01.8	N	21 16.0 -00.1	81 36.2 +02.8	N	22 17.4 +00.0	175 00.2 +02.4	S	08 44.2 +00.0	07			
08	48 49.0 +01.8	N	21 15.9 +00.0	96 39.0 +02.8	N	22 17.4 +00.0	190 02.6 +02.5	S	08 44.2 +00.0	08			
09	63 50.8 +01.8	N	21 15.9 -00.1	111 41.8 +02.7	N	22 17.4 -00.1	205 05.1 +02.5	S	08 44.2 +00.0	09			
10	78 52.6 +01.8	N	21 15.8 +00.0	126 44.5 +02.8	N	22 17.3 +00.0	220 07.6 +02.4	S	08 44.2 +00.0	10			
11	93 54.4 +01.8	N	21 15.8 -00.1	141 47.3 +02.8	N	22 17.3 +00.0	235 10.0 +02.5	S	08 44.2 +00.0	11			
12	108 56.2 +01.8	N	21 15.7 +00.0	156 50.1 +02.7	N	22 17.3 +00.0	250 12.5 +02.5	S	08 44.2 +00.0	12			
13	123 58.0 +01.8	N	21 15.7 -00.1	171 52.8 +02.8	N	22 17.3 +00.0	265 15.0 +02.4	S	08 44.2 +00.0	13			
14	138 59.8 +01.8	N	21 15.6 +00.0	186 55.6 +02.8	N	22 17.3 -00.1	280 17.4 +02.5	S	08 44.2 +00.0	14			
15	154 01.6 +01.8	N	21 15.6 -00.1	201 58.4 +02.7	N	22 17.2 +00.0	295 19.9 +02.5	S	08 44.2 +00.0	15			
16	169 03.4 +01.8	N	21 15.5 +00.0	217 01.1 +02.8	N	22 17.2 +00.0	310 22.4 +02.4	S	08 44.2 +00.0	16			
17	184 05.2 +01.8	N	21 15.5 -00.1	232 03.9 +02.8	N	22 17.2 +00.0	325 24.8 +02.5	S	08 44.2 +00.0	17			
18	199 07.0 +01.8	N	21 15.4 +00.0	247 06.7 +02.7	N	22 17.2 +00.0	340 27.3 +02.5	S	08 44.2 +00.0	18			
19	214 08.8 +01.8	N	21 15.4 -00.1	262 09.4 +02.8	N	22 17.2 -00.1	355 29.8 +02.4	S	08 44.2 -00.1	19			
20	229 10.6 +01.8	N	21 15.3 +00.0	277 12.2 +02.8	N	22 17.1 +00.0	10 32.2 +02.5	S	08 44.1 +00.0	20			
21	244 12.4 +01.8	N	21 15.3 -00.1	292 15.0 +02.7	N	22 17.1 +00.0	25 34.7 +02.5	S	08 44.1 +00.0	21			
22	259 14.2 +01.8	N	21 15.2 +00.0	307 17.7 +02.8	N	22 17.1 +00.0	40 37.2 +02.4	S	08 44.1 +00.0	22			
23	274 16.0 +01.8	N	21 15.2 -00.1	322 20.5 +02.8	N	22 17.1 +00.0	55 39.6 +02.5	S	08 44.1 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 234° 234° 234° 234° 234° 234°			SHA 282° 282° 282° 282° 282° 282°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 04:45			Greenwich Culmination Time: 01:34			Greenwich Culmination Time: 19:17						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 48.8 -00.1	S	18 48.0 +00.7	139 58.4 -00.8	S	25 36.4 +00.0	3 19.8 -36.1	N	22 58.0 +11.1	00			
01	198 48.7 -00.2	S	18 48.7 +00.6	154 57.6 -00.8	S	25 36.4 -00.1	17 43.7 -36.2	N	23 09.1 +10.9	01			
02	213 48.5 -00.1	S	18 49.3 +00.6	169 56.8 -00.8	S	25 36.3 +00.0	32 07.5 -36.3	N	23 20.0 +10.7	02			
03	228 48.4 -00.1	S	18 49.9 +00.6	184 56.0 -00.9	S	25 36.3 -00.1	46 31.2 -36.3	N	23 30.7 +10.6	03			
04	243 48.3 -00.1	S	18 50.5 +00.6	199 55.1 -00.8	S	25 36.2 -00.1	60 54.9 -36.4	N	23 41.3 +10.3	04			
05	258 48.2 -00.1	S	18 51.1 +00.7	214 54.3 -00.8	S	25 36.1 +00.0	75 18.5 -36.5	N	23 51.6 +10.3	05			
06	273 48.1 -00.1	S	18 51.8 +00.6	229 53.5 -00.8	S	25 36.1 -00.1	89 42.0 -36.6	N	24 01.9 +10.0	06			
07	288 48.0 -00.2	S	18 52.4 +00.6	244 52.7 -00.9	S	25 36.0 -00.1	104 05.4 -36.6	N	24 11.9 +09.9	07			
08	303 47.8 -00.1	S	18 53.0 +00.6	259 51.8 -00.8	S	25 35.9 +00.0	118 28.8 -36.7	N	24 21.8 +09.7	08			
09	318 47.7 -00.1	S	18 53.6 +00.6	274 51.0 -00.8	S	25 35.9 -00.1	132 52.1 -36.8	N	24 31.5 +09.5	09			
10	333 47.6 -00.1	S	18 54.2 +00.6	289 50.2 -00.8	S	25 35.8 -00.1	147 15.3 -36.9	N	24 41.0 +09.4	10			
11	348 47.5 -00.1	S	18 54.8 +00.6	304 49.4 -00.9	S	25 35.7 +00.0	161 38.4 -36.9	N	24 50.4 +09.1	11			
12	3 47.4 -00.1	S	18 55.4 +00.7	319 48.5 -00.8	S	25 35.7 -00.1	176 01.5 -37.0	N	24 59.5 +09.0	12			
13	18 47.3 -00.2	S	18 56.1 +00.6	334 47.7 -00.8	S	25 35.6 -00.1	190 24.5 -37.0	N	25 08.5 +08.8	13			
14	33 47.1 -00.1	S	18 56.7 +00.6	349 46.9 -00.8	S	25 35.5 -00.1	204 47.5 -37.1	N	25 17.3 +08.6	14			
15	48 47.0 -00.1	S	18 57.3 +00.6	4 46.1 -00.9	S	25 35.4 +00.0	219 10.4 -37.2	N	25 25.9 +08.5	15			
16	63 46.9 -00.1	S	18 57.9 +00.6	19 45.2 -00.8	S	25 35.4 -00.1	233 33.2 -37.2	N	25 34.4 +08.2	16			
17	78 46.8 -00.1	S	18 58.5 +00.6	34 44.4 -00.8	S	25 35.3 -00.1	247 56.0 -37.3	N	25 42.6 +08.1	17			
18	93 46.7 -00.2	S	18 59.1 +00.6	49 43.6 -00.8	S	25 35.2 -00.1	262 18.7 -37.3	N	25 50.7 +07.8	18			
19	108 46.5 -00.1	S	18 59.7 +00.6	64 42.8 -00.9	S	25 35.1 +00.0	276 41.4 -37.4	N	25 58.5 +07.7	19			
20	123 46.4 -00.1	S	19 00.3 +00.6	79 41.9 -00.8	S	25 35.1 -00.1	291 04.0 -37.5	N	26 06.2 +07.5	20			
21	138 46.3 -00.1	S	19 00.9 +00.6	94 41.1 -00.8	S	25 35.0 -00.1	305 26.5 -37.4	N	26 13.7 +07.3	21			
22	153 46.2 -00.1	S	19 01.5 +00.7	109 40.3 -00.8	S	25 34.9 -00.1	319 49.1 -37.6	N	26 21.0 +07.1	22			
23	168 46.1 -00.2	S	19 02.2 +00.6	124 39.5 -00.9	S	25 34.8 -00.1	334 11.5 -37.5	N	26 28.1 +06.9	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'5 16'5 16'4 16'4 16'4 16'4						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 60'5 60'4 60'3 60'2 60'1 60'0						
	SHA 128° 128° 128° 128° 127° 127°			SHA 084° 084° 084° 084° 083° 083°			SHA 306° 304° 301° 299° 296° 293°						
	Greenwich Culmination Time: 11:44			Greenwich Culmination Time: 14:40			Greenwich Culmination Time: -1:00						

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	289 17.8 +01.8	N	21 15.1 +00.0	337 23.3 +02.7	N	22 17.1 -00.1	70 42.1 +02.5	S	08 44.1 +00.0	00			
01	304 19.6 +01.8	N	21 15.1 -00.1	352 26.0 +02.8	N	22 17.0 +00.0	85 44.6 +02.4	S	08 44.1 +00.0	01			
02	319 21.4 +01.8	N	21 15.0 +00.0	7 28.8 +02.8	N	22 17.0 +00.0	100 47.0 +02.5	S	08 44.1 +00.0	02			
03	334 23.2 +01.8	N	21 15.0 -00.1	22 31.6 +02.7	N	22 17.0 +00.0	115 49.5 +02.5	S	08 44.1 +00.0	03			
04	349 25.0 +01.9	N	21 14.9 +00.0	37 34.3 +02.8	N	22 17.0 +00.0	130 52.0 +02.4	S	08 44.1 +00.0	04			
05	4 26.9 +01.8	N	21 14.9 +00.0	52 37.1 +02.8	N	22 17.0 -00.1	145 54.4 +02.5	S	08 44.1 +00.0	05			
06	19 28.7 +01.8	N	21 14.9 -00.1	67 39.9 +02.7	N	22 16.9 +00.0	160 56.9 +02.4	S	08 44.1 +00.0	06			
07	34 30.5 +01.8	N	21 14.8 +00.0	82 42.6 +02.8	N	22 16.9 +00.0	175 59.3 +02.5	S	08 44.1 +00.0	07			
08	49 32.3 +01.8	N	21 14.8 -00.1	97 45.4 +02.8	N	22 16.9 +00.0	191 01.8 +02.5	S	08 44.1 +00.0	08			
09	64 34.1 +01.8	N	21 14.7 +00.0	112 48.2 +02.7	N	22 16.9 +00.0	206 04.3 +02.4	S	08 44.1 -00.1	09			
10	79 35.9 +01.8	N	21 14.7 -00.1	127 50.9 +02.8	N	22 16.9 -00.1	221 06.7 +02.5	S	08 44.0 +00.0	10			
11	94 37.7 +01.9	N	21 14.6 +00.0	142 53.7 +02.8	N	22 16.8 +00.0	236 09.2 +02.5	S	08 44.0 +00.0	11			
12	109 39.6 +01.8	N	21 14.6 -00.1	157 56.5 +02.8	N	22 16.8 +00.0	251 11.7 +02.4	S	08 44.0 +00.0	12			
13	124 41.4 +01.8	N	21 14.5 +00.0	172 59.3 +02.7	N	22 16.8 +00.0	266 14.1 +02.5	S	08 44.0 +00.0	13			
14	139 43.2 +01.8	N	21 14.5 -00.1	188 02.0 +02.8	N	22 16.8 +00.0	281 16.6 +02.5	S	08 44.0 +00.0	14			
15	154 45.0 +01.9	N	21 14.4 +00.0	203 04.8 +02.8	N	22 16.8 -00.1	296 19.1 +02.4	S	08 44.0 +00.0	15			
16	169 46.9 +01.8	N	21 14.4 -00.1	218 07.6 +02.7	N	22 16.7 +00.0	311 21.5 +02.5	S	08 44.0 +00.0	16			
17	184 48.7 +01.8	N	21 14.3 +00.0	233 10.3 +02.8	N	22 16.7 +00.0	326 24.0 +02.4	S	08 44.0 +00.0	17			
18	199 50.5 +01.8	N	21 14.3 +00.0	248 13.1 +02.8	N	22 16.7 +00.0	341 26.4 +02.5	S	08 44.0 +00.0	18			
19	214 52.3 +01.9	N	21 14.3 -00.1	263 15.9 +02.8	N	22 16.7 -00.1	356 28.9 +02.5	S	08 44.0 +00.0	19			
20	229 54.2 +01.8	N	21 14.2 +00.0	278 18.7 +02.7	N	22 16.6 +00.0	11 31.4 +02.4	S	08 44.0 +00.0	20			
21	244 56.0 +01.8	N	21 14.2 -00.1	293 21.4 +02.8	N	22 16.6 +00.0	26 33.8 +02.5	S	08 44.0 -00.1	21			
22	259 57.8 +01.9	N	21 14.1 +00.0	308 24.2 +02.8	N	22 16.6 +00.0	41 36.3 +02.5	S	08 43.9 +00.0	22			
23	274 59.7 +01.8	N	21 14.1 -00.1	323 27.0 +02.7	N	22 16.6 +00.0	56 38.8 +02.4	S	08 43.9 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 234° 234° 234° 234° 234° 234°			SHA 282° 282° 282° 282° 282° 282°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 04:42			Greenwich Culmination Time: 01:30			Greenwich Culmination Time: 19:14						

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	45.9 -00.1	S 19 02.8	+00.6	139	38.6 -00.8	S 25 34.7	-00.1	348	34.0 -37.7	N 26 35.0	+06.8	00
01	198	45.8 -00.1	S 19 03.4	+00.6	154	37.8 -00.8	S 25 34.6	-00.1	2 56.3 -37.6	N 26 41.8	+06.5		01
02	213	45.7 -00.1	S 19 04.0	+00.6	169	37.0 -00.8	S 25 34.5	+00.0	17 18.7 -37.7	N 26 48.3	+06.3		02
03	228	45.6 -00.2	S 19 04.6	+00.6	184	36.2 -00.9	S 25 34.5	-00.1	31 41.0 -37.7	N 26 54.6	+06.2		03
04	243	45.4 -00.1	S 19 05.2	+00.6	199	35.3 -00.8	S 25 34.4	-00.1	46 03.3 -37.8	N 27 00.8	+05.9		04
05	258	45.3 -00.1	S 19 05.8	+00.6	214	34.5 -00.8	S 25 34.3	-00.1	60 25.5 -37.7	N 27 06.7	+05.8		05
06	273	45.2 -00.1	S 19 06.4	+00.6	229	33.7 -00.8	S 25 34.2	-00.1	74 47.8 -37.8	N 27 12.5	+05.5		06
07	288	45.1 -00.2	S 19 07.0	+00.6	244	32.9 -00.8	S 25 34.1	-00.1	89 10.0 -37.9	N 27 18.0	+05.3		07
08	303	44.9 -00.1	S 19 07.6	+00.6	259	32.1 -00.9	S 25 34.0	-00.1	103 32.1 -37.8	N 27 23.3	+05.2		08
09	318	44.8 -00.1	S 19 08.2	+00.6	274	31.2 -00.8	S 25 33.9	-00.1	117 54.3 -37.9	N 27 28.5	+04.9		09
10	333	44.7 -00.1	S 19 08.8	+00.6	289	30.4 -00.8	S 25 33.8	-00.1	132 16.4 -37.8	N 27 33.4	+04.8		10
11	348	44.6 -00.2	S 19 09.4	+00.6	304	29.6 -00.8	S 25 33.7	-00.1	146 38.6 -37.9	N 27 38.2	+04.5		11
12	3 44.4 -00.1	S 19 10.0	+00.6	319	28.8 -00.8	S 25 33.6	-00.1	161 00.7 -37.9	N 27 42.7	+04.4		12	
13	18 44.3 -00.1	S 19 10.6	+00.6	334	28.0 -00.9	S 25 33.5	-00.1	175 22.8 -37.9	N 27 47.1	+04.1		13	
14	33 44.2 -00.2	S 19 11.2	+00.6	349	27.1 -00.8	S 25 33.4	-00.1	189 44.9 -37.9	N 27 51.2	+04.0		14	
15	48 44.0 -00.1	S 19 11.8	+00.6	4 26.3 -00.8	S 25 33.3	-00.1		204 07.0 -37.9	N 27 55.2	+03.7		15	
16	63 43.9 -00.1	S 19 12.4	+00.6	19 25.5 -00.8	S 25 33.2	-00.1		218 29.1 -37.9	N 27 58.9	+03.6		16	
17	78 43.8 -00.1	S 19 13.0	+00.6	34 24.7 -00.8	S 25 33.1	-00.1		232 51.2 -37.9	N 28 02.5	+03.3		17	
18	93 43.7 -00.2	S 19 13.6	+00.6	49 23.9 -00.9	S 25 33.0	-00.2		247 13.3 -37.9	N 28 05.8	+03.2		18	
19	108 43.5 -00.1	S 19 14.2	+00.6	64 23.0 -00.8	S 25 32.8	-00.1		261 35.4 -37.9	N 28 09.0	+02.9		19	
20	123 43.4 -00.1	S 19 14.8	+00.6	79 22.2 -00.8	S 25 32.7	-00.1		275 57.5 -37.9	N 28 11.9	+02.7		20	
21	138 43.3 -00.2	S 19 15.4	+00.6	94 21.4 -00.8	S 25 32.6	-00.1		290 19.6 -37.8	N 28 14.6	+02.6		21	
22	153 43.1 -00.1	S 19 16.0	+00.5	109 20.6 -00.8	S 25 32.5	-00.1		304 41.8 -37.9	N 28 17.2	+02.3		22	
23	168 43.0 -00.1	S 19 16.5	+00.6	124 19.8 -00.8	S 25 32.4	-00.1		319 03.9 -37.8	N 28 19.5	+02.2		23	
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 16'2 16'2 16'2 16'2 16'2 16'2				SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 16'3 16'3 16'3 16'2 16'2 16'1				
	HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 59'9 59'8 59'7 59'5 59'4 59'3				
	SHA 127° 127° 127° 127° 126° 126°				SHA 083° 083° 083° 082° 082° 082°				SHA 291° 288° 285° 283° 280° 277°				
	Greenwich Culmination Time: 11:45				Greenwich Culmination Time: 14:42				Greenwich Culmination Time: 00:47				

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	290	01.5 +01.8	N 21 14.0	+00.0	338	29.7 +02.8	N 22 16.6	-00.1	71	41.2 +02.5	S 08 43.9	+00.0	00
01	305	03.3 +01.9	N 21 14.0	+00.0	353	32.5 +02.8	N 22 16.5	+00.0	86	43.7 +02.4	S 08 43.9	+00.0	01
02	320	05.2 +01.8	N 21 14.0	-00.1	8 35.3 +02.8	N 22 16.5	+00.0		101	46.1 +02.5	S 08 43.9	+00.0	02
03	335	07.0 +01.8	N 21 13.9	+00.0	23 38.1 +02.7	N 22 16.5	+00.0		116	48.6 +02.5	S 08 43.9	+00.0	03
04	350	08.8 +01.9	N 21 13.9	-00.1	38 40.8 +02.8	N 22 16.5	+00.0		131	51.1 +02.4	S 08 43.9	+00.0	04
05	5 10.7 +01.8	N 21 13.8	+00.0	53 43.6 +02.8	N 22 16.5	-00.1		146	53.5 +02.5	S 08 43.9	+00.0	05	
06	20 12.5 +01.8	N 21 13.8	-00.1	68 46.4 +02.8	N 22 16.4	+00.0		161	56.0 +02.4	S 08 43.9	+00.0	06	
07	35 14.3 +01.9	N 21 13.7	+00.0	83 49.2 +02.7	N 22 16.4	+00.0		176	58.4 +02.5	S 08 43.9	+00.0	07	
08	50 16.2 +01.8	N 21 13.7	+00.0	98 51.9 +02.8	N 22 16.4	+00.0		192	00.9 +02.5	S 08 43.9	-00.1	08	
09	65 18.0 +01.9	N 21 13.7	-00.1	113 54.7 +02.8	N 22 16.4	+00.0		207	03.4 +02.4	S 08 43.8	+00.0	09	
10	80 19.9 +01.8	N 21 13.6	+00.0	128 57.5 +02.8	N 22 16.4	-00.1		222	05.8 +02.5	S 08 43.8	+00.0	10	
11	95 21.7 +01.9	N 21 13.6	-00.1	144 00.3 +02.7	N 22 16.3	+00.0		237	08.3 +02.4	S 08 43.8	+00.0	11	
12	110 23.6 +01.8	N 21 13.5	+00.0	159 03.0 +02.8	N 22 16.3	+00.0		252	10.7 +02.5	S 08 43.8	+00.0	12	
13	125 25.4 +01.8	N 21 13.5	+00.0	174 05.8 +02.8	N 22 16.3	+00.0		267	13.2 +02.5	S 08 43.8	+00.0	13	
14	140 27.2 +01.9	N 21 13.5	-00.1	189 08.6 +02.8	N 22 16.3	-00.1		282	15.7 +02.4	S 08 43.8	+00.0	14	
15	155 29.1 +01.8	N 21 13.4	+00.0	204 11.4 +02.7	N 22 16.2	+00.0		297	18.1 +02.5	S 08 43.8	+00.0	15	
16	170 30.9 +01.9	N 21 13.4	-00.1	219 14.1 +02.8	N 22 16.2	+00.0		312	20.6 +02.4	S 08 43.8	+00.0	16	
17	185 32.8 +01.8	N 21 13.3	+00.0	234 16.9 +02.8	N 22 16.2	+00.0		327	23.0 +02.5	S 08 43.8	+00.0	17	
18	200 34.6 +01.9	N 21 13.3	+00.0	249 19.7 +02.8	N 22 16.2	+00.0		342	25.5 +02.4	S 08 43.8	-00.1	18	
19	215 36.5 +01.8	N 21 13.3	-00.1	264 22.5 +02.8	N 22 16.2	-00.1		357	27.9 +02.5	S 08 43.7	+00.0	19	
20	230 38.3 +01.9	N 21 13.2	+00.0	279 25.3 +02.7	N 22 16.1	+00.0		12 30.4 +02.5	S 08 43.7	+00.0	20		
21	245 40.2 +01.9	N 21 13.2	-00.1	294 28.0 +02.8	N 22 16.1	+00.0		27 32.9 +02.4	S 08 43.7	+00.0	21		
22	260 42.1 +01.8	N 21 13.1	+00.0	309 30.8 +02.8	N 22 16.1	+00.0		42 35.3 +02.5	S 08 43.7	+00.0	22		
23	275 43.9 +01.9	N 21 13.1	+00.0	324 33.6 +02.8	N 22 16.1	+00.0		57 37.8 +02.4	S 08 43.7	+00.0	23		
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 00'4 00'4 00'4 00'4 00'4 00'4				SD 00'1 00'1 00'1 00'1 00'1 00'1				
	HP 00'2 00'2 00'2 00'2 00'2 00'2				HP 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 233° 233° 233° 233° 233° 233°				SHA 282° 282° 282° 282° 282° 282°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 04:39				Greenwich Culmination Time: 01:25				Greenwich Culmination Time: 19:10				



UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 42.9 -00.2	S	19 17.1 +00.6	139 19.0 -00.9	S	25 32.3 -00.1	333 26.1 -37.8	N	28 21.7 +01.9	00			
01	198 42.7 -00.1	S	19 17.7 +00.6	154 18.1 -00.8	S	25 32.2 -00.2	347 48.3 -37.7	N	28 23.6 +01.7	01			
02	213 42.6 -00.1	S	19 18.3 +00.6	169 17.3 -00.8	S	25 32.0 -00.1	2 10.6 -37.8	N	28 25.3 +01.6	02			
03	228 42.5 -00.2	S	19 18.9 +00.6	184 16.5 -00.8	S	25 31.9 -00.1	16 32.8 -37.7	N	28 26.9 +01.3	03			
04	243 42.3 -00.1	S	19 19.5 +00.6	199 15.7 -00.8	S	25 31.8 -00.1	30 55.1 -37.6	N	28 28.2 +01.2	04			
05	258 42.2 -00.1	S	19 20.1 +00.6	214 14.9 -00.8	S	25 31.7 -00.1	45 17.5 -37.6	N	28 29.4 +00.9	05			
06	273 42.1 -00.2	S	19 20.7 +00.6	229 14.1 -00.9	S	25 31.6 -00.2	59 39.9 -37.6	N	28 30.3 +00.7	06			
07	288 41.9 -00.1	S	19 21.3 +00.6	244 13.2 -00.8	S	25 31.4 -00.1	74 02.3 -37.6	N	28 31.0 +00.6	07			
08	303 41.8 -00.1	S	19 21.9 +00.5	259 12.4 -00.8	S	25 31.3 -00.1	88 24.7 -37.4	N	28 31.6 +00.4	08			
09	318 41.7 -00.2	S	19 22.4 +00.6	274 11.6 -00.8	S	25 31.2 -00.2	102 47.3 -37.5	N	28 32.0 +00.1	09			
10	333 41.5 -00.1	S	19 23.0 +00.6	289 10.8 -00.8	S	25 31.0 -00.1	117 09.8 -37.4	N	28 32.1 +00.0	10			
11	348 41.4 -00.1	S	19 23.6 +00.6	304 10.0 -00.8	S	25 30.9 -00.1	131 32.4 -37.3	N	28 32.1 -00.2	11			
12	3 41.3 -00.2	S	19 24.2 +00.6	319 09.2 -00.8	S	25 30.8 -00.1	145 55.1 -37.3	N	28 31.9 -00.5	12			
13	18 41.1 -00.1	S	19 24.8 +00.6	334 08.4 -00.9	S	25 30.7 -00.2	160 17.8 -37.2	N	28 31.4 -00.6	13			
14	33 41.0 -00.1	S	19 25.4 +00.6	349 07.5 -00.8	S	25 30.5 -00.1	174 40.6 -37.1	N	28 30.8 -00.8	14			
15	48 40.9 -00.2	S	19 26.0 +00.5	4 06.7 -00.8	S	25 30.4 -00.2	189 03.5 -37.1	N	28 30.0 -01.0	15			
16	63 40.7 -00.1	S	19 26.5 +00.6	19 05.9 -00.8	S	25 30.2 -00.1	203 26.4 -37.1	N	28 29.0 -01.2	16			
17	78 40.6 -00.2	S	19 27.1 +00.6	34 05.1 -00.8	S	25 30.1 -00.1	217 49.3 -36.9	N	28 27.8 -01.3	17			
18	93 40.4 -00.1	S	19 27.7 +00.6	49 04.3 -00.8	S	25 30.0 -00.2	232 12.4 -36.9	N	28 26.5 -01.6	18			
19	108 40.3 -00.1	S	19 28.3 +00.6	64 03.5 -00.8	S	25 29.8 -00.1	246 35.5 -36.8	N	28 24.9 -01.7	19			
20	123 40.2 -00.2	S	19 28.9 +00.5	79 02.7 -00.9	S	25 29.7 -00.2	260 58.7 -36.7	N	28 23.2 -02.0	20			
21	138 40.0 -00.1	S	19 29.4 +00.6	94 01.8 -00.8	S	25 29.5 -00.1	275 22.0 -36.7	N	28 21.2 -02.1	21			
22	153 39.9 -00.1	S	19 30.0 +00.6	109 01.0 -00.8	S	25 29.4 -00.1	289 45.3 -36.5	N	28 19.1 -02.3	22			
23	168 39.8 -00.2	S	19 30.6 +00.6	124 00.2 -00.8	S	25 29.3 -00.2	304 08.8 -36.5	N	28 16.8 -02.5	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 16'1 16'1 16'0 16'0 15'9 15'9						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 59'1 59'0 58'8 58'7 58'5 58'4						
	SHA 126° 126° 126° 126° 125° 125°			SHA 082° 081° 081° 081° 081° 081°			SHA 275° 272° 269° 267° 264° 261°						
	Greenwich Culmination Time: 11:45			Greenwich Culmination Time: 14:43			Greenwich Culmination Time: 01:50						

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	290 45.8 +01.8	N	21 13.1 -00.1	339 36.4 +02.7	N	22 16.1 -00.1	72 40.2 +02.5	S	08 43.7 +00.0	00			
01	305 47.6 +01.9	N	21 13.0 +00.0	354 39.1 +02.8	N	22 16.0 +00.0	87 42.7 +02.4	S	08 43.7 +00.0	01			
02	320 49.5 +01.8	N	21 13.0 +00.0	9 41.9 +02.8	N	22 16.0 +00.0	102 45.1 +02.5	S	08 43.7 +00.0	02			
03	335 51.3 +01.9	N	21 13.0 -00.1	24 44.7 +02.8	N	22 16.0 +00.0	117 47.6 +02.5	S	08 43.7 +00.0	03			
04	350 53.2 +01.9	N	21 12.9 +00.0	39 47.5 +02.8	N	22 16.0 +00.0	132 50.1 +02.4	S	08 43.7 -00.1	04			
05	5 55.1 +01.8	N	21 12.9 +00.0	54 50.3 +02.7	N	22 16.0 -00.1	147 52.5 +02.5	S	08 43.6 +00.0	05			
06	20 56.9 +01.9	N	21 12.9 -00.1	69 53.0 +02.8	N	22 15.9 +00.0	162 55.0 +02.4	S	08 43.6 +00.0	06			
07	35 58.8 +01.9	N	21 12.8 +00.0	84 55.8 +02.8	N	22 15.9 +00.0	177 57.4 +02.5	S	08 43.6 +00.0	07			
08	51 00.7 +01.8	N	21 12.8 -00.1	99 58.6 +02.8	N	22 15.9 +00.0	192 59.9 +02.4	S	08 43.6 +00.0	08			
09	66 02.5 +01.9	N	21 12.7 +00.0	115 01.4 +02.8	N	22 15.9 -00.1	208 02.3 +02.5	S	08 43.6 +00.0	09			
10	81 04.4 +01.9	N	21 12.7 +00.0	130 04.2 +02.7	N	22 15.8 +00.0	223 04.8 +02.4	S	08 43.6 +00.0	10			
11	96 06.3 +01.8	N	21 12.7 -00.1	145 06.9 +02.8	N	22 15.8 +00.0	238 07.2 +02.5	S	08 43.6 +00.0	11			
12	111 08.1 +01.9	N	21 12.6 +00.0	160 09.7 +02.8	N	22 15.8 +00.0	253 09.7 +02.5	S	08 43.6 +00.0	12			
13	126 10.0 +01.9	N	21 12.6 +00.0	175 12.5 +02.8	N	22 15.8 +00.0	268 12.2 +02.4	S	08 43.6 -00.1	13			
14	141 11.9 +01.9	N	21 12.6 -00.1	190 15.3 +02.8	N	22 15.8 -00.1	283 14.6 +02.5	S	08 43.5 +00.0	14			
15	156 13.8 +01.8	N	21 12.5 +00.0	205 18.1 +02.7	N	22 15.7 +00.0	298 17.1 +02.4	S	08 43.5 +00.0	15			
16	171 15.6 +01.9	N	21 12.5 +00.0	220 20.8 +02.8	N	22 15.7 +00.0	313 19.5 +02.5	S	08 43.5 +00.0	16			
17	186 17.5 +01.9	N	21 12.5 -00.1	235 23.6 +02.8	N	22 15.7 +00.0	328 22.0 +02.4	S	08 43.5 +00.0	17			
18	201 19.4 +01.9	N	21 12.4 +00.0	250 26.4 +02.8	N	22 15.7 -00.1	343 24.4 +02.5	S	08 43.5 +00.0	18			
19	216 21.3 +01.8	N	21 12.4 +00.0	265 29.2 +02.8	N	22 15.6 +00.0	358 26.9 +02.4	S	08 43.5 +00.0	19			
20	231 23.1 +01.9	N	21 12.4 -00.1	280 32.0 +02.8	N	22 15.6 +00.0	13 29.3 +02.5	S	08 43.5 +00.0	20			
21	246 25.0 +01.9	N	21 12.3 +00.0	295 34.8 +02.7	N	22 15.6 +00.0	28 31.8 +02.4	S	08 43.5 -00.1	21			
22	261 26.9 +01.9	N	21 12.3 +00.0	310 37.5 +02.8	N	22 15.6 +00.0	43 34.2 +02.5	S	08 43.4 +00.0	22			
23	276 28.8 +01.9	N	21 12.3 +00.0	325 40.3 +02.8	N	22 15.6 -00.1	58 36.7 +02.4	S	08 43.4 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 233° 233° 233° 233° 233° 233°			SHA 282° 282° 282° 282° 282° 282°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 04:36			Greenwich Culmination Time: 01:21			Greenwich Culmination Time: 19:06						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 39.6 -00.1	S	19 31.2 +00.5	138 59.4 -00.8	S	25 29.1 -00.1	318 32.3 -36.4	N	28 14.3 -02.6	00			
01	198 39.5 -00.2	S	19 31.7 +00.6	153 58.6 -00.8	S	25 29.0 -00.2	332 55.9 -36.3	N	28 11.7 -02.9	01			
02	213 39.3 -00.1	S	19 32.3 +00.6	168 57.8 -00.8	S	25 28.8 -00.1	347 19.6 -36.2	N	28 08.8 -03.0	02			
03	228 39.2 -00.2	S	19 32.9 +00.6	183 57.0 -00.8	S	25 28.7 -00.2	1 43.4 -36.2	N	28 05.8 -03.2	03			
04	243 39.0 -00.1	S	19 33.5 +00.6	198 56.2 -00.8	S	25 28.5 -00.1	16 07.2 -36.0	N	28 02.6 -03.3	04			
05	258 38.9 -00.1	S	19 34.1 +00.5	213 55.4 -00.8	S	25 28.4 -00.2	30 31.2 -35.9	N	27 59.3 -03.6	05			
06	273 38.8 -00.2	S	19 34.6 +00.6	228 54.6 -00.9	S	25 28.2 -00.1	44 55.3 -35.9	N	27 55.7 -03.7	06			
07	288 38.6 -00.1	S	19 35.2 +00.6	243 53.7 -00.8	S	25 28.1 -00.2	59 19.4 -35.7	N	27 52.0 -03.9	07			
08	303 38.5 -00.2	S	19 35.8 +00.5	258 52.9 -00.8	S	25 27.9 -00.2	73 43.7 -35.7	N	27 48.1 -04.0	08			
09	318 38.3 -00.1	S	19 36.3 +00.6	273 52.1 -00.8	S	25 27.7 -00.1	88 08.0 -35.5	N	27 44.1 -04.2	09			
10	333 38.2 -00.2	S	19 36.9 +00.6	288 51.3 -00.8	S	25 27.6 -00.2	102 32.5 -35.4	N	27 39.9 -04.4	10			
11	348 38.0 -00.1	S	19 37.5 +00.6	303 50.5 -00.8	S	25 27.4 -00.1	116 57.1 -35.4	N	27 35.5 -04.6	11			
12	3 37.9 -00.1	S	19 38.1 +00.5	318 49.7 -00.8	S	25 27.3 -00.2	131 21.7 -35.2	N	27 30.9 -04.7	12			
13	18 37.8 -00.2	S	19 38.6 +00.6	333 48.9 -00.8	S	25 27.1 -00.2	145 46.5 -35.1	N	27 26.2 -04.9	13			
14	33 37.6 -00.1	S	19 39.2 +00.6	348 48.1 -00.8	S	25 26.9 -00.1	160 11.4 -35.0	N	27 21.3 -05.0	14			
15	48 37.5 -00.2	S	19 39.8 +00.5	3 47.3 -00.8	S	25 26.8 -00.2	174 36.4 -34.9	N	27 16.3 -05.2	15			
16	63 37.3 -00.1	S	19 40.3 +00.6	18 46.5 -00.8	S	25 26.6 -00.2	189 01.5 -34.8	N	27 11.1 -05.4	16			
17	78 37.2 -00.2	S	19 40.9 +00.6	33 45.7 -00.8	S	25 26.4 -00.1	203 26.7 -34.7	N	27 05.7 -05.5	17			
18	93 37.0 -00.1	S	19 41.5 +00.5	48 44.9 -00.8	S	25 26.3 -00.2	217 52.0 -34.5	N	27 00.2 -05.6	18			
19	108 36.9 -00.2	S	19 42.0 +00.6	63 44.1 -00.9	S	25 26.1 -00.2	232 17.5 -34.5	N	26 54.6 -05.9	19			
20	123 36.7 -00.1	S	19 42.6 +00.6	78 43.2 -00.8	S	25 25.9 -00.1	246 43.0 -34.3	N	26 48.7 -05.9	20			
21	138 36.6 -00.2	S	19 43.2 +00.5	93 42.4 -00.8	S	25 25.8 -00.2	261 08.7 -34.2	N	26 42.8 -06.1	21			
22	153 36.4 -00.1	S	19 43.7 +00.6	108 41.6 -00.8	S	25 25.6 -00.2	275 34.5 -34.1	N	26 36.7 -06.3	22			
23	168 36.3 -00.2	S	19 44.3 +00.6	123 40.8 -00.8	S	25 25.4 -00.2	290 00.4 -34.0	N	26 30.4 -06.4	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'9 15'8 15'8 15'7 15'7 15'7						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 58'2 58'1 57'9 57'8 57'6 57'4						
	SHA 125° 125° 125° 125° 124° 124°			SHA 080° 080° 080° 080° 079° 079°			SHA 259° 256° 254° 251° 249° 246°						
	Greenwich Culmination Time: 11:45			Greenwich Culmination Time: 14:44			Greenwich Culmination Time: 02:52						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	291 30.7 +01.8	N	21 12.3 -00.1	340 43.1 +02.8	N	22 15.5 +00.0	73 39.1 +02.5	S	08 43.4 +00.0	00			
01	306 32.5 +01.9	N	21 12.2 +00.0	355 45.9 +02.8	N	22 15.5 +00.0	88 41.6 +02.5	S	08 43.4 +00.0	01			
02	321 34.4 +01.9	N	21 12.2 +00.0	10 48.7 +02.8	N	22 15.5 +00.0	103 44.1 +02.4	S	08 43.4 +00.0	02			
03	336 36.3 +01.9	N	21 12.2 -00.1	25 51.5 +02.7	N	22 15.5 +00.0	118 46.5 +02.5	S	08 43.4 +00.0	03			
04	351 38.2 +01.9	N	21 12.1 +00.0	40 54.2 +02.8	N	22 15.5 -00.1	133 49.0 +02.4	S	08 43.4 +00.0	04			
05	6 40.1 +01.9	N	21 12.1 +00.0	55 57.0 +02.8	N	22 15.4 +00.0	148 51.4 +02.5	S	08 43.4 +00.0	05			
06	21 42.0 +01.9	N	21 12.1 -00.1	70 59.8 +02.8	N	22 15.4 +00.0	163 53.9 +02.4	S	08 43.4 -00.1	06			
07	36 43.9 +01.9	N	21 12.0 +00.0	86 02.6 +02.8	N	22 15.4 +00.0	178 56.3 +02.5	S	08 43.3 +00.0	07			
08	51 45.8 +01.9	N	21 12.0 +00.0	101 05.4 +02.8	N	22 15.4 -00.1	193 58.8 +02.4	S	08 43.3 +00.0	08			
09	66 47.7 +01.8	N	21 12.0 +00.0	116 08.2 +02.8	N	22 15.3 +00.0	209 01.2 +02.5	S	08 43.3 +00.0	09			
10	81 49.5 +01.9	N	21 12.0 -00.1	131 11.0 +02.7	N	22 15.3 +00.0	224 03.7 +02.4	S	08 43.3 +00.0	10			
11	96 51.4 +01.9	N	21 11.9 +00.0	146 13.7 +02.8	N	22 15.3 +00.0	239 06.1 +02.5	S	08 43.3 +00.0	11			
12	111 53.3 +01.9	N	21 11.9 +00.0	161 16.5 +02.8	N	22 15.3 +00.0	254 08.6 +02.4	S	08 43.3 +00.0	12			
13	126 55.2 +01.9	N	21 11.9 -00.1	176 19.3 +02.8	N	22 15.3 -00.1	269 11.0 +02.5	S	08 43.3 -00.1	13			
14	141 57.1 +01.9	N	21 11.8 +00.0	191 22.1 +02.8	N	22 15.2 +00.0	284 13.5 +02.4	S	08 43.2 +00.0	14			
15	156 59.0 +01.9	N	21 11.8 +00.0	206 24.9 +02.8	N	22 15.2 +00.0	299 15.9 +02.5	S	08 43.2 +00.0	15			
16	172 00.9 +01.9	N	21 11.8 +00.0	221 27.7 +02.8	N	22 15.2 +00.0	314 18.4 +02.4	S	08 43.2 +00.0	16			
17	187 02.8 +01.9	N	21 11.8 -00.1	236 30.5 +02.7	N	22 15.2 -00.1	329 20.8 +02.5	S	08 43.2 +00.0	17			
18	202 04.7 +01.9	N	21 11.7 +00.0	251 33.2 +02.8	N	22 15.1 +00.0	344 23.3 +02.4	S	08 43.2 +00.0	18			
19	217 06.6 +01.9	N	21 11.7 +00.0	266 36.0 +02.8	N	22 15.1 +00.0	359 25.7 +02.5	S	08 43.2 +00.0	19			
20	232 08.5 +01.9	N	21 11.7 +00.0	281 38.8 +02.8	N	22 15.1 +00.0	14 28.2 +02.4	S	08 43.2 +00.0	20			
21	247 10.4 +02.0	N	21 11.7 -00.1	296 41.6 +02.8	N	22 15.1 +00.0	29 30.6 +02.5	S	08 43.2 -00.1	21			
22	262 12.4 +01.9	N	21 11.6 +00.0	311 44.4 +02.8	N	22 15.1 -00.1	44 33.1 +02.4	S	08 43.1 +00.0	22			
23	277 14.3 +01.9	N	21 11.6 +00.0	326 47.2 +02.8	N	22 15.0 +00.0	59 35.5 +02.5	S	08 43.1 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 233° 233° 233° 233° 233° 233°			SHA 282° 282° 282° 282° 282° 282°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 04:33			Greenwich Culmination Time: 01:16			Greenwich Culmination Time: 19:02						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 36.1 -00.1	S	19 44.9 +00.5	138 40.0 -00.8	S	25 25.2 -00.2	304 26.4 -33.8	N	26 24.0 -06.6	00			
01	198 36.0 -00.2	S	19 45.4 +00.6	153 39.2 -00.8	S	25 25.0 -00.1	318 52.6 -33.8	N	26 17.4 -06.7	01			
02	213 35.8 -00.1	S	19 46.0 +00.5	168 38.4 -00.8	S	25 24.9 -00.2	333 18.8 -33.6	N	26 10.7 -06.8	02			
03	228 35.7 -00.2	S	19 46.5 +00.6	183 37.6 -00.8	S	25 24.7 -00.2	347 45.2 -33.5	N	26 03.9 -07.0	03			
04	243 35.5 -00.1	S	19 47.1 +00.6	198 36.8 -00.8	S	25 24.5 -00.2	2 11.7 -33.3	N	25 56.9 -07.1	04			
05	258 35.4 -00.2	S	19 47.7 +00.5	213 36.0 -00.8	S	25 24.3 -00.2	16 38.4 -33.3	N	25 49.8 -07.3	05			
06	273 35.2 -00.1	S	19 48.2 +00.6	228 35.2 -00.8	S	25 24.1 -00.1	31 05.1 -33.1	N	25 42.5 -07.3	06			
07	288 35.1 -00.2	S	19 48.8 +00.5	243 34.4 -00.8	S	25 24.0 -00.2	45 32.0 -33.0	N	25 35.2 -07.6	07			
08	303 34.9 -00.1	S	19 49.3 +00.6	258 33.6 -00.8	S	25 23.8 -00.2	59 59.0 -32.9	N	25 27.6 -07.6	08			
09	318 34.8 -00.2	S	19 49.9 +00.5	273 32.8 -00.8	S	25 23.6 -00.2	74 26.1 -32.7	N	25 20.0 -07.8	09			
10	333 34.6 -00.1	S	19 50.4 +00.6	288 32.0 -00.8	S	25 23.4 -00.2	88 53.4 -32.7	N	25 12.2 -07.9	10			
11	348 34.5 -00.2	S	19 51.0 +00.6	303 31.2 -00.8	S	25 23.2 -00.2	103 20.7 -32.5	N	25 04.3 -08.0	11			
12	3 34.3 -00.1	S	19 51.6 +00.5	318 30.4 -00.8	S	25 23.0 -00.2	117 48.2 -32.4	N	24 56.3 -08.2	12			
13	18 34.2 -00.2	S	19 52.1 +00.6	333 29.6 -00.8	S	25 22.8 -00.2	132 15.8 -32.2	N	24 48.1 -08.3	13			
14	33 34.0 -00.1	S	19 52.7 +00.5	348 28.8 -00.8	S	25 22.6 -00.2	146 43.6 -32.2	N	24 39.8 -08.4	14			
15	48 33.9 -00.2	S	19 53.2 +00.6	3 28.0 -00.8	S	25 22.4 -00.2	161 11.4 -32.0	N	24 31.4 -08.5	15			
16	63 33.7 -00.1	S	19 53.8 +00.5	18 27.2 -00.8	S	25 22.2 -00.2	175 39.4 -31.8	N	24 22.9 -08.6	16			
17	78 33.6 -00.2	S	19 54.3 +00.6	33 26.4 -00.8	S	25 22.0 -00.2	190 07.6 -31.8	N	24 14.3 -08.8	17			
18	93 33.4 -00.2	S	19 54.9 +00.5	48 25.6 -00.8	S	25 21.8 -00.2	204 35.8 -31.6	N	24 05.5 -08.9	18			
19	108 33.2 -00.1	S	19 55.4 +00.6	63 24.8 -00.8	S	25 21.6 -00.2	219 04.2 -31.5	N	23 56.6 -08.9	19			
20	123 33.1 -00.2	S	19 56.0 +00.5	78 24.0 -00.8	S	25 21.4 -00.2	233 32.7 -31.4	N	23 47.7 -09.1	20			
21	138 32.9 -00.1	S	19 56.5 +00.6	93 23.2 -00.8	S	25 21.2 -00.2	248 01.3 -31.3	N	23 38.6 -09.3	21			
22	153 32.8 -00.2	S	19 57.1 +00.5	108 22.4 -00.8	S	25 21.0 -00.2	262 30.0 -31.1	N	23 29.3 -09.3	22			
23	168 32.6 -00.1	S	19 57.6 +00.6	123 21.6 -00.8	S	25 20.8 -00.2	276 58.9 -31.0	N	23 20.0 -09.4	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'6 15'6 15'5 15'5 15'4 15'4						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 57'3 57'1 57'0 56'8 56'7 56'6						
	SHA 124° 124° 124° 123° 123° 123°			SHA 079° 079° 079° 078° 078° 078°			SHA 244° 241° 239° 237° 234° 232°						
	Greenwich Culmination Time: 11:45			Greenwich Culmination Time: 14:46			Greenwich Culmination Time: 03:50						

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	292 16.2 +01.9	N	21 11.6 +00.0	341 50.0 +02.8	N	22 15.0 +00.0	74 38.0 +02.4	S	08 43.1 +00.0	00			
01	307 18.1 +01.9	N	21 11.6 -00.1	356 52.8 +02.7	N	22 15.0 +00.0	89 40.4 +02.5	S	08 43.1 +00.0	01			
02	322 20.0 +01.9	N	21 11.5 +00.0	11 55.5 +02.8	N	22 15.0 -00.1	104 42.9 +02.4	S	08 43.1 +00.0	02			
03	337 21.9 +01.9	N	21 11.5 +00.0	26 58.3 +02.8	N	22 14.9 +00.0	119 45.3 +02.5	S	08 43.1 +00.0	03			
04	352 23.8 +01.9	N	21 11.5 +00.0	42 01.1 +02.8	N	22 14.9 +00.0	134 47.8 +02.4	S	08 43.1 -00.1	04			
05	7 25.7 +02.0	N	21 11.5 -00.1	57 03.9 +02.8	N	22 14.9 +00.0	149 50.2 +02.5	S	08 43.0 +00.0	05			
06	22 27.7 +01.9	N	21 11.4 +00.0	72 06.7 +02.8	N	22 14.9 +00.0	164 52.7 +02.4	S	08 43.0 +00.0	06			
07	37 29.6 +01.9	N	21 11.4 +00.0	87 09.5 +02.8	N	22 14.9 -00.1	179 55.1 +02.5	S	08 43.0 +00.0	07			
08	52 31.5 +01.9	N	21 11.4 +00.0	102 12.3 +02.8	N	22 14.8 +00.0	194 57.6 +02.4	S	08 43.0 +00.0	08			
09	67 33.4 +01.9	N	21 11.4 +00.0	117 15.1 +02.8	N	22 14.8 +00.0	210 00.0 +02.4	S	08 43.0 +00.0	09			
10	82 35.3 +01.9	N	21 11.4 -00.1	132 17.9 +02.7	N	22 14.8 +00.0	225 02.4 +02.5	S	08 43.0 +00.0	10			
11	97 37.2 +02.0	N	21 11.3 +00.0	147 20.6 +02.8	N	22 14.8 -00.1	240 04.9 +02.4	S	08 43.0 -00.1	11			
12	112 39.2 +01.9	N	21 11.3 +00.0	162 23.4 +02.8	N	22 14.7 +00.0	255 07.3 +02.5	S	08 42.9 +00.0	12			
13	127 41.1 +01.9	N	21 11.3 +00.0	177 26.2 +02.8	N	22 14.7 +00.0	270 09.8 +02.4	S	08 42.9 +00.0	13			
14	142 43.0 +01.9	N	21 11.3 -00.1	192 29.0 +02.8	N	22 14.7 +00.0	285 12.2 +02.5	S	08 42.9 +00.0	14			
15	157 44.9 +02.0	N	21 11.2 +00.0	207 31.8 +02.8	N	22 14.7 +00.0	300 14.7 +02.4	S	08 42.9 +00.0	15			
16	172 46.9 +01.9	N	21 11.2 +00.0	222 34.6 +02.8	N	22 14.7 -00.1	315 17.1 +02.5	S	08 42.9 +00.0	16			
17	187 48.8 +01.9	N	21 11.2 +00.0	237 37.4 +02.8	N	22 14.6 +00.0	330 19.6 +02.4	S	08 42.9 -00.1	17			
18	202 50.7 +02.0	N	21 11.2 +00.0	252 40.2 +02.8	N	22 14.6 +00.0	345 22.0 +02.5	S	08 42.8 +00.0	18			
19	217 52.7 +01.9	N	21 11.2 -00.1	267 43.0 +02.8	N	22 14.6 +00.0	0 24.5 +02.4	S	08 42.8 +00.0	19			
20	232 54.6 +01.9	N	21 11.1 +00.0	282 45.8 +02.8	N	22 14.6 -00.1	15 26.9 +02.5	S	08 42.8 +00.0	20			
21	247 56.5 +02.0	N	21 11.1 +00.0	297 48.6 +02.8	N	22 14.5 +00.0	30 29.4 +02.4	S	08 42.8 +00.0	21			
22	262 58.5 +01.9	N	21 11.1 +00.0	312 51.4 +02.7	N	22 14.5 +00.0	45 31.8 +02.4	S	08 42.8 +00.0	22			
23	278 00.4 +01.9	N	21 11.1 +00.0	327 54.1 +02.8	N	22 14.5 +00.0	60 34.2 +02.5	S	08 42.8 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 233° 233° 233° 233° 233° 233°			SHA 282° 282° 282° 282° 282° 282°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 04:30			Greenwich Culmination Time: 01:12			Greenwich Culmination Time: 18:58						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> <span style="float:right">A: 71%</span>				UT
	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	
00	183 32.5 -00.2	S	19 58.2 +00.5	138 20.8 -00.8	S	25 20.6 -00.2	291 27.9 -30.9	N	23 10.6 -09.5	00			
01	198 32.3 -00.2	S	19 58.7 +00.6	153 20.0 -00.8	S	25 20.4 -00.2	305 57.0 -30.8	N	23 01.1 -09.6	01			
02	213 32.1 -00.1	S	19 59.3 +00.5	168 19.2 -00.8	S	25 20.2 -00.2	320 26.2 -30.7	N	22 51.5 -09.8	02			
03	228 32.0 -00.2	S	19 59.8 +00.6	183 18.4 -00.8	S	25 20.0 -00.2	334 55.5 -30.5	N	22 41.7 -09.8	03			
04	243 31.8 -00.1	S	20 00.4 +00.5	198 17.6 -00.8	S	25 19.8 -00.2	349 25.0 -30.4	N	22 31.9 -09.9	04			
05	258 31.7 -00.2	S	20 00.9 +00.6	213 16.8 -00.7	S	25 19.6 -00.2	3 54.6 -30.3	N	22 22.0 -10.1	05			
06	273 31.5 -00.1	S	20 01.5 +00.5	228 16.1 -00.8	S	25 19.4 -00.3	18 24.3 -30.2	N	22 11.9 -10.1	06			
07	288 31.4 -00.2	S	20 02.0 +00.5	243 15.3 -00.8	S	25 19.1 -00.2	32 54.1 -30.0	N	22 01.8 -10.2	07			
08	303 31.2 -00.2	S	20 02.5 +00.6	258 14.5 -00.8	S	25 18.9 -00.2	47 24.1 -29.9	N	21 51.6 -10.3	08			
09	318 31.0 -00.1	S	20 03.1 +00.5	273 13.7 -00.8	S	25 18.7 -00.2	61 54.2 -29.8	N	21 41.3 -10.4	09			
10	333 30.9 -00.2	S	20 03.6 +00.6	288 12.9 -00.8	S	25 18.5 -00.2	76 24.4 -29.7	N	21 30.9 -10.5	10			
11	348 30.7 -00.2	S	20 04.2 +00.5	303 12.1 -00.8	S	25 18.3 -00.3	90 54.7 -29.6	N	21 20.4 -10.6	11			
12	3 30.5 -00.1	S	20 04.7 +00.5	318 11.3 -00.8	S	25 18.0 -00.2	105 25.1 -29.5	N	21 09.8 -10.7	12			
13	18 30.4 -00.2	S	20 05.2 +00.6	333 10.5 -00.8	S	25 17.8 -00.2	119 55.6 -29.3	N	20 59.1 -10.8	13			
14	33 30.2 -00.1	S	20 05.8 +00.5	348 09.7 -00.8	S	25 17.6 -00.2	134 26.3 -29.3	N	20 48.3 -10.8	14			
15	48 30.1 -00.2	S	20 06.3 +00.6	3 08.9 -00.8	S	25 17.4 -00.3	148 57.0 -29.1	N	20 37.5 -10.9	15			
16	63 29.9 -00.2	S	20 06.9 +00.5	18 08.1 -00.8	S	25 17.1 -00.2	163 27.9 -29.0	N	20 26.6 -11.0	16			
17	78 29.7 -00.1	S	20 07.4 +00.5	33 07.3 -00.8	S	25 16.9 -00.2	177 58.9 -28.9	N	20 15.6 -11.1	17			
18	93 29.6 -00.2	S	20 07.9 +00.6	48 06.5 -00.7	S	25 16.7 -00.2	192 30.0 -28.8	N	20 04.5 -11.2	18			
19	108 29.4 -00.2	S	20 08.5 +00.5	63 05.8 -00.8	S	25 16.5 -00.3	207 01.2 -28.6	N	19 53.3 -11.2	19			
20	123 29.2 -00.1	S	20 09.0 +00.5	78 05.0 -00.8	S	25 16.2 -00.2	221 32.6 -28.6	N	19 42.1 -11.4	20			
21	138 29.1 -00.2	S	20 09.5 +00.6	93 04.2 -00.8	S	25 16.0 -00.2	236 04.0 -28.5	N	19 30.7 -11.4	21			
22	153 28.9 -00.2	S	20 10.1 +00.5	108 03.4 -00.8	S	25 15.8 -00.3	250 35.5 -28.3	N	19 19.3 -11.4	22			
23	168 28.7 -00.1	S	20 10.6 +00.5	123 02.6 -00.8	S	25 15.5 -00.2	265 07.2 -28.3	N	19 07.9 -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 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 15'4 15'3 15'3 15'3 15'2 15'2						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 56'4 56'3 56'1 56'0 55'9 55'8						
	SHA 123° 123° 123° 122° 122° 122°			SHA 078° 078° 077° 077° 077° 077°			SHA 230° 228° 226° 223° 221° 219°						
	Greenwich Culmination Time: 11:45			Greenwich Culmination Time: 14:47			Greenwich Culmination Time: 04:43						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	GHA ° ' "	ddGHA ' "	Dec ° ' "	dDec ' "	
00	293 02.3 +02.0	N	21 11.1 +00.0	342 56.9 +02.8	N	22 14.5 -00.1	75 36.7 +02.4	S	08 42.8 -00.1	00			
01	308 04.3 +01.9	N	21 11.1 -00.1	357 59.7 +02.8	N	22 14.4 +00.0	90 39.1 +02.5	S	08 42.7 +00.0	01			
02	323 06.2 +01.9	N	21 11.0 +00.0	13 02.5 +02.8	N	22 14.4 +00.0	105 41.6 +02.4	S	08 42.7 +00.0	02			
03	338 08.1 +02.0	N	21 11.0 +00.0	28 05.3 +02.8	N	22 14.4 +00.0	120 44.0 +02.5	S	08 42.7 +00.0	03			
04	353 10.1 +01.9	N	21 11.0 +00.0	43 08.1 +02.8	N	22 14.4 +00.0	135 46.5 +02.4	S	08 42.7 +00.0	04			
05	8 12.0 +02.0	N	21 11.0 +00.0	58 10.9 +02.8	N	22 14.4 -00.1	150 48.9 +02.5	S	08 42.7 +00.0	05			
06	23 14.0 +01.9	N	21 11.0 -00.1	73 13.7 +02.8	N	22 14.3 +00.0	165 51.4 +02.4	S	08 42.7 -00.1	06			
07	38 15.9 +01.9	N	21 10.9 +00.0	88 16.5 +02.8	N	22 14.3 +00.0	180 53.8 +02.4	S	08 42.6 +00.0	07			
08	53 17.8 +02.0	N	21 10.9 +00.0	103 19.3 +02.8	N	22 14.3 +00.0	195 56.2 +02.5	S	08 42.6 +00.0	08			
09	68 19.8 +01.9	N	21 10.9 +00.0	118 22.1 +02.8	N	22 14.3 -00.1	210 58.7 +02.4	S	08 42.6 +00.0	09			
10	83 21.7 +02.0	N	21 10.9 +00.0	133 24.9 +02.8	N	22 14.2 +00.0	226 01.1 +02.5	S	08 42.6 +00.0	10			
11	98 23.7 +01.9	N	21 10.9 +00.0	148 27.7 +02.8	N	22 14.2 +00.0	241 03.6 +02.4	S	08 42.6 +00.0	11			
12	113 25.6 +02.0	N	21 10.9 +00.0	163 30.5 +02.8	N	22 14.2 +00.0	256 06.0 +02.5	S	08 42.6 -00.1	12			
13	128 27.6 +01.9	N	21 10.9 -00.1	178 33.3 +02.8	N	22 14.2 -00.1	271 08.5 +02.4	S	08 42.5 +00.0	13			
14	143 29.5 +02.0	N	21 10.8 +00.0	193 36.1 +02.8	N	22 14.1 +00.0	286 10.9 +02.4	S	08 42.5 +00.0	14			
15	158 31.5 +01.9	N	21 10.8 +00.0	208 38.9 +02.8	N	22 14.1 +00.0	301 13.3 +02.5	S	08 42.5 +00.0	15			
16	173 33.4 +02.0	N	21 10.8 +00.0	223 41.7 +02.7	N	22 14.1 +00.0	316 15.8 +02.4	S	08 42.5 +00.0	16			
17	188 35.4 +02.0	N	21 10.8 +00.0	238 44.4 +02.8	N	22 14.1 +00.0	331 18.2 +02.5	S	08 42.5 +00.0	17			
18	203 37.4 +01.9	N	21 10.8 +00.0	253 47.2 +02.8	N	22 14.1 -00.1	346 20.7 +02.4	S	08 42.5 -00.1	18			
19	218 39.3 +02.0	N	21 10.8 +00.0	268 50.0 +02.8	N	22 14.0 +00.0	1 23.1 +02.5	S	08 42.4 +00.0	19			
20	233 41.3 +01.9	N	21 10.8 +00.0	283 52.8 +02.8	N	22 14.0 +00.0	16 25.6 +02.4	S	08 42.4 +00.0	20			
21	248 43.2 +02.0	N	21 10.8 -00.1	298 55.6 +02.8	N	22 14.0 +00.0	31 28.0 +02.4	S	08 42.4 +00.0	21			
22	263 45.2 +02.0	N	21 10.7 +00.0	313 58.4 +02.8	N	22 14.0 -00.1	46 30.4 +02.5	S	08 42.4 +00.0	22			
23	278 47.2 +01.9	N	21 10.7 +00.0	329 01.2 +02.8	N	22 13.9 +00.0	61 32.9 +02.4	S	08 42.4 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 233° 232° 232° 232° 232° 232°			SHA 282° 282° 283° 283° 283° 283°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 04:27			Greenwich Culmination Time: 01:07			Greenwich Culmination Time: 18:54						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> <span style="float:right">A: 74%</span>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183	28.6 -00.2	S 20 11.1 +00.6		138	01.8 -00.8	S 25 15.3 -00.2		279	38.9 -28.1	N 18 56.3 -11.6		00
01	198	28.4 -00.1	S 20 11.7 +00.5		153	01.0 -00.8	S 25 15.1 -00.3		294	10.8 -28.0	N 18 44.7 -11.7		01
02	213	28.3 -00.2	S 20 12.2 +00.5		168	00.2 -00.8	S 25 14.8 -00.2		308	42.8 -28.0	N 18 33.0 -11.7		02
03	228	28.1 -00.2	S 20 12.7 +00.6		182	59.4 -00.7	S 25 14.6 -00.3		323	14.8 -27.8	N 18 21.3 -11.8		03
04	243	27.9 -00.2	S 20 13.3 +00.5		197	58.7 -00.8	S 25 14.3 -00.2		337	47.0 -27.7	N 18 09.5 -11.9		04
05	258	27.7 -00.1	S 20 13.8 +00.5		212	57.9 -00.8	S 25 14.1 -00.2		352	19.3 -27.7	N 17 57.6 -12.0		05
06	273	27.6 -00.2	S 20 14.3 +00.6		227	57.1 -00.8	S 25 13.9 -00.3		6	51.6 -27.5	N 17 45.6 -12.0		06
07	288	27.4 -00.2	S 20 14.9 +00.5		242	56.3 -00.8	S 25 13.6 -00.2		21	24.1 -27.4	N 17 33.6 -12.1		07
08	303	27.2 -00.1	S 20 15.4 +00.5		257	55.5 -00.8	S 25 13.4 -00.3		35	56.7 -27.4	N 17 21.5 -12.1		08
09	318	27.1 -00.2	S 20 15.9 +00.5		272	54.7 -00.8	S 25 13.1 -00.2		50	29.3 -27.2	N 17 09.4 -12.2		09
10	333	26.9 -00.2	S 20 16.4 +00.6		287	53.9 -00.7	S 25 12.9 -00.3		65	02.1 -27.2	N 16 57.2 -12.2		10
11	348	26.7 -00.1	S 20 17.0 +00.5		302	53.2 -00.8	S 25 12.6 -00.2		79	34.9 -27.0	N 16 45.0 -12.4		11
12	3	26.6 -00.2	S 20 17.5 +00.5		317	52.4 -00.8	S 25 12.4 -00.3		94	07.9 -27.0	N 16 32.6 -12.3		12
13	18	26.4 -00.2	S 20 18.0 +00.5		332	51.6 -00.8	S 25 12.1 -00.2		108	40.9 -26.8	N 16 20.3 -12.5		13
14	33	26.2 -00.1	S 20 18.5 +00.6		347	50.8 -00.8	S 25 11.9 -00.3		123	14.1 -26.8	N 16 07.8 -12.4		14
15	48	26.1 -00.2	S 20 19.1 +00.5		2	50.0 -00.8	S 25 11.6 -00.3		137	47.3 -26.7	N 15 55.4 -12.6		15
16	63	25.9 -00.2	S 20 19.6 +00.5		17	49.2 -00.7	S 25 11.3 -00.2		152	20.6 -26.6	N 15 42.8 -12.6		16
17	78	25.7 -00.2	S 20 20.1 +00.5		32	48.5 -00.8	S 25 11.1 -00.3		166	54.0 -26.5	N 15 30.2 -12.6		17
18	93	25.5 -00.1	S 20 20.6 +00.5		47	47.7 -00.8	S 25 10.8 -00.2		181	27.5 -26.5	N 15 17.6 -12.7		18
19	108	25.4 -00.2	S 20 21.1 +00.6		62	46.9 -00.8	S 25 10.6 -00.3		196	01.0 -26.3	N 15 04.9 -12.7		19
20	123	25.2 -00.2	S 20 21.7 +00.5		77	46.1 -00.8	S 25 10.3 -00.2		210	34.7 -26.3	N 14 52.2 -12.8		20
21	138	25.0 -00.2	S 20 22.2 +00.5		92	45.3 -00.7	S 25 10.1 -00.3		225	08.4 -26.2	N 14 39.4 -12.8		21
22	153	24.8 -00.1	S 20 22.7 +00.5		107	44.6 -00.8	S 25 09.8 -00.3		239	42.2 -26.1	N 14 26.6 -12.9		22
23	168	24.7 -00.2	S 20 23.2 +00.5		122	43.8 -00.8	S 25 09.5 -00.2		254	16.1 -26.0	N 14 13.7 -12.9		23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 16'2 16'2 16'2 16'2 16'2 16'2				SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 15'2 15'1 15'1 15'1 15'0 15'0				
	HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 55'6 55'5 55'4 55'3 55'2 55'1				
	SHA 122° 122° 122° 121° 121° 121°				SHA 076° 076° 076° 076° 076° 075°				SHA 217° 215° 213° 211° 209° 207°				
	Greenwich Culmination Time: 11:46				Greenwich Culmination Time: 14:48				Greenwich Culmination Time: 05:31				

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	293	49.1 +02.0	N 21 10.7 +00.0		344	04.0 +02.8	N 22 13.9 +00.0		76	35.3 +02.5	S 08 42.4 -00.1		00
01	308	51.1 +01.9	N 21 10.7 +00.0		359	06.8 +02.8	N 22 13.9 +00.0		91	37.8 +02.4	S 08 42.3 +00.0		01
02	323	53.0 +02.0	N 21 10.7 +00.0		14	09.6 +02.8	N 22 13.9 -00.1		106	40.2 +02.4	S 08 42.3 +00.0		02
03	338	55.0 +02.0	N 21 10.7 +00.0		29	12.4 +02.8	N 22 13.8 +00.0		121	42.6 +02.5	S 08 42.3 +00.0		03
04	353	57.0 +01.9	N 21 10.7 +00.0		44	15.2 +02.8	N 22 13.8 +00.0		136	45.1 +02.4	S 08 42.3 +00.0		04
05	8	58.9 +02.0	N 21 10.7 +00.0		59	18.0 +02.8	N 22 13.8 +00.0		151	47.5 +02.5	S 08 42.3 +00.0		05
06	24	00.9 +02.0	N 21 10.7 -00.1		74	20.8 +02.8	N 22 13.8 +00.0		166	50.0 +02.4	S 08 42.3 -00.1		06
07	39	02.9 +02.0	N 21 10.6 +00.0		89	23.6 +02.8	N 22 13.8 -00.1		181	52.4 +02.4	S 08 42.2 +00.0		07
08	54	04.9 +01.9	N 21 10.6 +00.0		104	26.4 +02.8	N 22 13.7 +00.0		196	54.8 +02.5	S 08 42.2 +00.0		08
09	69	06.8 +02.0	N 21 10.6 +00.0		119	29.2 +02.8	N 22 13.7 +00.0		211	57.3 +02.4	S 08 42.2 +00.0		09
10	84	08.8 +02.0	N 21 10.6 +00.0		134	32.0 +02.8	N 22 13.7 +00.0		226	59.7 +02.5	S 08 42.2 +00.0		10
11	99	10.8 +02.0	N 21 10.6 +00.0		149	34.8 +02.8	N 22 13.7 -00.1		242	02.2 +02.4	S 08 42.2 +00.0		11
12	114	12.8 +01.9	N 21 10.6 +00.0		164	37.6 +02.8	N 22 13.6 +00.0		257	04.6 +02.4	S 08 42.2 -00.1		12
13	129	14.7 +02.0	N 21 10.6 +00.0		179	40.4 +02.8	N 22 13.6 +00.0		272	07.0 +02.5	S 08 42.1 +00.0		13
14	144	16.7 +02.0	N 21 10.6 +00.0		194	43.2 +02.8	N 22 13.6 +00.0		287	09.5 +02.4	S 08 42.1 +00.0		14
15	159	18.7 +02.0	N 21 10.6 +00.0		209	46.0 +02.8	N 22 13.6 -00.1		302	11.9 +02.4	S 08 42.1 +00.0		15
16	174	20.7 +02.0	N 21 10.6 +00.0		224	48.8 +02.8	N 22 13.5 +00.0		317	14.3 +02.5	S 08 42.1 +00.0		16
17	189	22.7 +01.9	N 21 10.6 +00.0		239	51.6 +02.8	N 22 13.5 +00.0		332	16.8 +02.4	S 08 42.1 -00.1		17
18	204	24.6 +02.0	N 21 10.6 +00.0		254	54.4 +02.8	N 22 13.5 +00.0		347	19.2 +02.5	S 08 42.0 +00.0		18
19	219	26.6 +02.0	N 21 10.6 -00.1		269	57.2 +02.8	N 22 13.5 -00.1		2	21.7 +02.4	S 08 42.0 +00.0		19
20	234	28.6 +02.0	N 21 10.5 +00.0		285	00.0 +02.8	N 22 13.4 +00.0		17	24.1 +02.4	S 08 42.0 +00.0		20
21	249	30.6 +02.0	N 21 10.5 +00.0		300	02.8 +02.8	N 22 13.4 +00.0		32	26.5 +02.5	S 08 42.0 +00.0		21
22	264	32.6 +02.0	N 21 10.5 +00.0		315	05.6 +02.8	N 22 13.4 +00.0		47	29.0 +02.4	S 08 42.0 -00.1		22
23	279	34.6 +02.0	N 21 10.5 +00.0		330	08.4 +02.8	N 22 13.4 -00.1		62	31.4 +02.4	S 08 41.9 +00.0		23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				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 00'2 00'2 00'2 00'2 00'2 00'2				HP 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 232° 232° 232° 232° 232° 232°				SHA 283° 283° 283° 283° 283° 283°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 04:24				Greenwich Culmination Time: 01:03				Greenwich Culmination Time: 18:50				

UT	Sun				Venus				Moon				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	183	24.5 -00.2	S 20	23.7 +00.5	137	43.0 -00.8	S 25	09.3 -00.3	268	50.1 -25.9	N 14	00.8 -13.0	00							
01	198	24.3 -00.2	S 20	24.2 +00.6	152	42.2 -00.8	S 25	09.0 -00.3	283	24.2 -25.9	N 13	47.8 -13.0	01							
02	213	24.1 -00.1	S 20	24.8 +00.5	167	41.4 -00.7	S 25	08.7 -00.2	297	58.3 -25.8	N 13	34.8 -13.1	02							
03	228	24.0 -00.2	S 20	25.3 +00.5	182	40.7 -00.8	S 25	08.5 -00.3	312	32.5 -25.7	N 13	21.7 -13.1	03							
04	243	23.8 -00.2	S 20	25.8 +00.5	197	39.9 -00.8	S 25	08.2 -00.3	327	06.8 -25.7	N 13	08.6 -13.1	04							
05	258	23.6 -00.2	S 20	26.3 +00.5	212	39.1 -00.8	S 25	07.9 -00.3	341	41.1 -25.5	N 12	55.5 -13.2	05							
06	273	23.4 -00.1	S 20	26.8 +00.5	227	38.3 -00.7	S 25	07.6 -00.2	356	15.6 -25.5	N 12	42.3 -13.2	06							
07	288	23.3 -00.2	S 20	27.3 +00.5	242	37.6 -00.8	S 25	07.4 -00.3	10	50.1 -25.5	N 12	29.1 -13.2	07							
08	303	23.1 -00.2	S 20	27.8 +00.6	257	36.8 -00.8	S 25	07.1 -00.3	25	24.6 -25.3	N 12	15.9 -13.3	08							
09	318	22.9 -00.2	S 20	28.4 +00.5	272	36.0 -00.8	S 25	06.8 -00.3	39	59.3 -25.3	N 12	02.6 -13.3	09							
10	333	22.7 -00.1	S 20	28.9 +00.5	287	35.2 -00.7	S 25	06.5 -00.2	54	34.0 -25.3	N 11	49.3 -13.4	10							
11	348	22.6 -00.2	S 20	29.4 +00.5	302	34.5 -00.8	S 25	06.3 -00.3	69	08.7 -25.1	N 11	35.9 -13.4	11							
12	3	22.4 -00.2	S 20	29.9 +00.5	317	33.7 -00.8	S 25	06.0 -00.3	83	43.6 -25.1	N 11	22.5 -13.4	12							
13	18	22.2 -00.2	S 20	30.4 +00.5	332	32.9 -00.8	S 25	05.7 -00.3	98	18.5 -25.1	N 11	09.1 -13.5	13							
14	33	22.0 -00.2	S 20	30.9 +00.5	347	32.1 -00.7	S 25	05.4 -00.3	112	53.4 -25.0	N 10	55.6 -13.5	14							
15	48	21.8 -00.1	S 20	31.4 +00.5	2	31.4 -00.8	S 25	05.1 -00.3	127	28.4 -24.9	N 10	42.1 -13.5	15							
16	63	21.7 -00.2	S 20	31.9 +00.5	17	30.6 -00.8	S 25	04.8 -00.2	142	03.5 -24.8	N 10	28.6 -13.5	16							
17	78	21.5 -00.2	S 20	32.4 +00.5	32	29.8 -00.7	S 25	04.6 -00.3	156	38.7 -24.8	N 10	15.1 -13.6	17							
18	93	21.3 -00.2	S 20	32.9 +00.5	47	29.1 -00.8	S 25	04.3 -00.3	171	13.9 -24.8	N 10	01.5 -13.6	18							
19	108	21.1 -00.2	S 20	33.4 +00.5	62	28.3 -00.8	S 25	04.0 -00.3	185	49.1 -24.7	N 09	47.9 -13.6	19							
20	123	20.9 -00.1	S 20	33.9 +00.5	77	27.5 -00.8	S 25	03.7 -00.3	200	24.4 -24.6	N 09	34.3 -13.7	20							
21	138	20.8 -00.2	S 20	34.4 +00.5	92	26.7 -00.7	S 25	03.4 -00.3	214	59.8 -24.6	N 09	20.6 -13.7	21							
22	153	20.6 -00.2	S 20	34.9 +00.5	107	26.0 -00.8	S 25	03.1 -00.3	229	35.2 -24.6	N 09	06.9 -13.7	22							
23	168	20.4 -00.2	S 20	35.4 +00.5	122	25.2 -00.8	S 25	02.8 -00.3	244	10.6 -24.5	N 08	53.2 -13.7	23							
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16'2	16'2	16'2	16'2	16'2	16'2	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	15'0	15'0	14'9	14'9	14'9	14'9
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	55'0	54'9	54'8	54'7	54'7	54'6
SHA	121°	121°	121°	120°	120°	120°	SHA	075°	075°	075°	075°	074°	074°	SHA	205°	204°	202°	200°	198°	196°
Greenwich Culmination Time: 11:46							Greenwich Culmination Time: 14:49							Greenwich Culmination Time: 06:15						

  

UT	Mars				Jupiter				Saturn				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	294	36.6 +02.0	N 21	10.5 +00.0	345	11.2 +02.8	N 22	13.3 +00.0	77	33.8 +02.5	S 08	41.9 +00.0	00							
01	309	38.6 +02.0	N 21	10.5 +00.0	0	14.0 +02.8	N 22	13.3 +00.0	92	36.3 +02.4	S 08	41.9 +00.0	01							
02	324	40.6 +02.0	N 21	10.5 +00.0	15	16.8 +02.8	N 22	13.3 +00.0	107	38.7 +02.5	S 08	41.9 +00.0	02							
03	339	42.6 +01.9	N 21	10.5 +00.0	30	19.6 +02.8	N 22	13.3 +00.0	122	41.2 +02.4	S 08	41.9 +00.0	03							
04	354	44.5 +02.0	N 21	10.5 +00.0	45	22.4 +02.8	N 22	13.3 -00.1	137	43.6 +02.4	S 08	41.9 -00.1	04							
05	9	46.5 +02.0	N 21	10.5 +00.0	60	25.2 +02.8	N 22	13.2 +00.0	152	46.0 +02.5	S 08	41.8 +00.0	05							
06	24	48.5 +02.0	N 21	10.5 +00.0	75	28.0 +02.8	N 22	13.2 +00.0	167	48.5 +02.4	S 08	41.8 +00.0	06							
07	39	50.5 +02.0	N 21	10.5 +00.0	90	30.8 +02.8	N 22	13.2 +00.0	182	50.9 +02.4	S 08	41.8 +00.0	07							
08	54	52.5 +02.0	N 21	10.5 +00.0	105	33.6 +02.8	N 22	13.2 -00.1	197	53.3 +02.5	S 08	41.8 +00.0	08							
09	69	54.5 +02.0	N 21	10.5 +00.0	120	36.4 +02.8	N 22	13.1 +00.0	212	55.8 +02.4	S 08	41.8 -00.1	09							
10	84	56.5 +02.0	N 21	10.5 +00.0	135	39.2 +02.8	N 22	13.1 +00.0	227	58.2 +02.4	S 08	41.7 +00.0	10							
11	99	58.5 +02.1	N 21	10.5 +00.0	150	42.0 +02.8	N 22	13.1 +00.0	243	00.6 +02.5	S 08	41.7 +00.0	11							
12	115	00.6 +02.0	N 21	10.5 +00.0	165	44.8 +02.8	N 22	13.1 -00.1	258	03.1 +02.4	S 08	41.7 +00.0	12							
13	130	02.6 +02.0	N 21	10.5 +00.0	180	47.6 +02.8	N 22	13.0 +00.0	273	05.5 +02.4	S 08	41.7 +00.0	13							
14	145	04.6 +02.0	N 21	10.5 +00.0	195	50.4 +02.8	N 22	13.0 +00.0	288	07.9 +02.5	S 08	41.7 -00.1	14							
15	160	06.6 +02.0	N 21	10.5 +00.0	210	53.2 +02.9	N 22	13.0 +00.0	303	10.4 +02.4	S 08	41.6 +00.0	15							
16	175	08.6 +02.0	N 21	10.5 +00.0	225	56.1 +02.8	N 22	13.0 -00.1	318	12.8 +02.4	S 08	41.6 +00.0	16							
17	190	10.6 +02.0	N 21	10.5 +00.0	240	58.9 +02.8	N 22	12.9 +00.0	333	15.2 +02.5	S 08	41.6 +00.0	17							
18	205	12.6 +02.0	N 21	10.5 +00.0	256	01.7 +02.8	N 22	12.9 +00.0	348	17.7 +02.4	S 08	41.6 +00.0	18							
19	220	14.6 +02.0	N 21	10.5 +00.0	271	04.5 +02.8	N 22	12.9 +00.0	3	20.1 +02.4	S 08	41.6 -00.1	19							
20	235	16.6 +02.0	N 21	10.5 +00.0	286	07.3 +02.8	N 22	12.9 -00.1	18	22.5 +02.5	S 08	41.5 +00.0	20							
21	250	18.6 +02.1	N 21	10.5 +00.0	301	10.1 +02.8	N 22	12.8 +00.0	33	25.0 +02.4	S 08	41.5 +00.0	21							
22	265	20.7 +02.0	N 21	10.5 +00.0	316	12.9 +02.8	N 22	12.8 +00.0	48	27.4 +02.4	S 08	41.5 +00.0	22							
23	280	22.7 +02.0	N 21	10.5 +00.0	331	15.7 +02.8	N 22	12.8 +00.0	63	29.8 +02.5	S 08	41.5 +00.0	23							
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	00'4	00'4	00'4	00'4	00'4	00'4	SD	00'1	00'1	00'1	00'1	00'1	00'1
HP	00'2	00'2	00'2	00'2	00'2	00'2	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP	00'0	00'0	00'0	00'0	00'0	00'0
SHA	232°	232°	232°	232°	232°	232°	SHA	283°	283°	283°	283°	283°	283°	SHA	015°	015°	015°	015°	015°	015°
Greenwich Culmination Time: 04:20							Greenwich Culmination Time: 00:59							Greenwich Culmination Time: 18:46						

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 20.2 -00.2	S	20 35.9 +00.6	137 24.4 -00.7	S	25 02.5 -00.3	258 46.1 -24.4	N	08 39.5 -13.8	00			
01	198 20.0 -00.2	S	20 36.5 +00.5	152 23.7 -00.8	S	25 02.2 -00.3	273 21.7 -24.4	N	08 25.7 -13.8	01			
02	213 19.8 -00.1	S	20 37.0 +00.5	167 22.9 -00.8	S	25 01.9 -00.3	287 57.3 -24.3	N	08 11.9 -13.8	02			
03	228 19.7 -00.2	S	20 37.5 +00.4	182 22.1 -00.7	S	25 01.6 -00.3	302 33.0 -24.3	N	07 58.1 -13.8	03			
04	243 19.5 -00.2	S	20 37.9 +00.5	197 21.4 -00.8	S	25 01.3 -00.3	317 08.7 -24.3	N	07 44.3 -13.8	04			
05	258 19.3 -00.2	S	20 38.4 +00.5	212 20.6 -00.8	S	25 01.0 -00.3	331 44.4 -24.2	N	07 30.5 -13.9	05			
06	273 19.1 -00.2	S	20 38.9 +00.5	227 19.8 -00.7	S	25 00.7 -00.3	346 20.2 -24.2	N	07 16.6 -13.9	06			
07	288 18.9 -00.2	S	20 39.4 +00.5	242 19.1 -00.8	S	25 00.4 -00.3	0 56.0 -24.1	N	07 02.7 -13.9	07			
08	303 18.7 -00.1	S	20 39.9 +00.5	257 18.3 -00.8	S	25 00.1 -00.3	15 31.9 -24.1	N	06 48.8 -13.9	08			
09	318 18.6 -00.2	S	20 40.4 +00.5	272 17.5 -00.7	S	24 59.8 -00.3	30 07.8 -24.1	N	06 34.9 -13.9	09			
10	333 18.4 -00.2	S	20 40.9 +00.5	287 16.8 -00.8	S	24 59.5 -00.3	44 43.7 -24.0	N	06 21.0 -14.0	10			
11	348 18.2 -00.2	S	20 41.4 +00.5	302 16.0 -00.8	S	24 59.2 -00.3	59 19.7 -24.0	N	06 07.0 -13.9	11			
12	3 18.0 -00.2	S	20 41.9 +00.5	317 15.2 -00.7	S	24 58.9 -00.3	73 55.7 -24.0	N	05 53.1 -14.0	12			
13	18 17.8 -00.2	S	20 42.4 +00.5	332 14.5 -00.8	S	24 58.6 -00.3	88 31.7 -23.9	N	05 39.1 -14.0	13			
14	33 17.6 -00.2	S	20 42.9 +00.5	347 13.7 -00.8	S	24 58.3 -00.4	103 07.8 -23.9	N	05 25.1 -14.0	14			
15	48 17.4 -00.1	S	20 43.4 +00.5	2 12.9 -00.7	S	24 57.9 -00.3	117 43.9 -23.8	N	05 11.1 -14.0	15			
16	63 17.3 -00.2	S	20 43.9 +00.5	17 12.2 -00.8	S	24 57.6 -00.3	132 20.1 -23.9	N	04 57.1 -14.1	16			
17	78 17.1 -00.2	S	20 44.4 +00.5	32 11.4 -00.7	S	24 57.3 -00.3	146 56.2 -23.8	N	04 43.0 -14.0	17			
18	93 16.9 -00.2	S	20 44.9 +00.5	47 10.7 -00.8	S	24 57.0 -00.3	161 32.4 -23.8	N	04 29.0 -14.0	18			
19	108 16.7 -00.2	S	20 45.4 +00.4	62 09.9 -00.8	S	24 56.7 -00.3	176 08.6 -23.7	N	04 15.0 -14.1	19			
20	123 16.5 -00.2	S	20 45.8 +00.5	77 09.1 -00.7	S	24 56.4 -00.4	190 44.9 -23.7	N	04 00.9 -14.1	20			
21	138 16.3 -00.2	S	20 46.3 +00.5	92 08.4 -00.8	S	24 56.0 -00.3	205 21.2 -23.8	N	03 46.8 -14.1	21			
22	153 16.1 -00.2	S	20 46.8 +00.5	107 07.6 -00.7	S	24 55.7 -00.3	219 57.4 -23.6	N	03 32.7 -14.0	22			
23	168 15.9 -00.2	S	20 47.3 +00.5	122 06.9 -00.8	S	24 55.4 -00.3	234 33.8 -23.7	N	03 18.7 -14.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 14'9 14'8 14'8 14'8 14'8 14'8						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 54'5 54'5 54'4 54'4 54'3 54'3						
	SHA 120° 120° 119° 119° 119° 119°			SHA 074° 074° 073° 073° 073° 073°			SHA 194° 193° 191° 189° 187° 186°						
	Greenwich Culmination Time: 11:46			Greenwich Culmination Time: 14:51			Greenwich Culmination Time: 06:56						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	295 24.7 +02.0	N	21 10.5 +00.0	346 18.5 +02.8	N	22 12.8 -00.1	78 32.3 +02.4	S	08 41.5 -00.1	00			
01	310 26.7 +02.0	N	21 10.5 +00.0	1 21.3 +02.8	N	22 12.7 +00.0	93 34.7 +02.4	S	08 41.4 +00.0	01			
02	325 28.7 +02.1	N	21 10.5 +00.0	16 24.1 +02.8	N	22 12.7 +00.0	108 37.1 +02.5	S	08 41.4 +00.0	02			
03	340 30.8 +02.0	N	21 10.5 +00.0	31 26.9 +02.8	N	22 12.7 +00.0	123 39.6 +02.4	S	08 41.4 +00.0	03			
04	355 32.8 +02.0	N	21 10.5 +00.0	46 29.7 +02.8	N	22 12.7 -00.1	138 42.0 +02.4	S	08 41.4 -00.1	04			
05	10 34.8 +02.0	N	21 10.5 +00.0	61 32.5 +02.8	N	22 12.6 +00.0	153 44.4 +02.5	S	08 41.3 +00.0	05			
06	25 36.8 +02.1	N	21 10.5 +00.0	76 35.3 +02.8	N	22 12.6 +00.0	168 46.9 +02.4	S	08 41.3 +00.0	06			
07	40 38.9 +02.0	N	21 10.5 +00.0	91 38.1 +02.8	N	22 12.6 +00.0	183 49.3 +02.4	S	08 41.3 +00.0	07			
08	55 40.9 +02.0	N	21 10.5 +00.1	106 40.9 +02.8	N	22 12.6 +00.0	198 51.7 +02.5	S	08 41.3 +00.0	08			
09	70 42.9 +02.1	N	21 10.6 +00.0	121 43.7 +02.8	N	22 12.6 -00.1	213 54.2 +02.4	S	08 41.3 -00.1	09			
10	85 45.0 +02.0	N	21 10.6 +00.0	136 46.5 +02.9	N	22 12.5 +00.0	228 56.6 +02.4	S	08 41.2 +00.0	10			
11	100 47.0 +02.0	N	21 10.6 +00.0	151 49.4 +02.8	N	22 12.5 +00.0	243 59.0 +02.4	S	08 41.2 +00.0	11			
12	115 49.0 +02.1	N	21 10.6 +00.0	166 52.2 +02.8	N	22 12.5 +00.0	259 01.4 +02.5	S	08 41.2 +00.0	12			
13	130 51.1 +02.0	N	21 10.6 +00.0	181 55.0 +02.8	N	22 12.5 -00.1	274 03.9 +02.4	S	08 41.2 +00.0	13			
14	145 53.1 +02.0	N	21 10.6 +00.0	196 57.8 +02.8	N	22 12.4 +00.0	289 06.3 +02.4	S	08 41.2 -00.1	14			
15	160 55.1 +02.1	N	21 10.6 +00.0	212 00.6 +02.8	N	22 12.4 +00.0	304 08.7 +02.5	S	08 41.1 +00.0	15			
16	175 57.2 +02.0	N	21 10.6 +00.0	227 03.4 +02.8	N	22 12.4 +00.0	319 11.2 +02.4	S	08 41.1 +00.0	16			
17	190 59.2 +02.0	N	21 10.6 +00.0	242 06.2 +02.8	N	22 12.4 -00.1	334 13.6 +02.4	S	08 41.1 +00.0	17			
18	206 01.2 +02.1	N	21 10.6 +00.0	257 09.0 +02.8	N	22 12.3 +00.0	349 16.0 +02.5	S	08 41.1 -00.1	18			
19	221 03.3 +02.0	N	21 10.6 +00.0	272 11.8 +02.8	N	22 12.3 +00.0	4 18.5 +02.4	S	08 41.0 +00.0	19			
20	236 05.3 +02.1	N	21 10.6 +00.0	287 14.6 +02.8	N	22 12.3 +00.0	19 20.9 +02.4	S	08 41.0 +00.0	20			
21	251 07.4 +02.0	N	21 10.6 +00.1	302 17.4 +02.8	N	22 12.3 -00.1	34 23.3 +02.4	S	08 41.0 +00.0	21			
22	266 09.4 +02.1	N	21 10.7 +00.0	317 20.2 +02.9	N	22 12.2 +00.0	49 25.7 +02.5	S	08 41.0 +00.0	22			
23	281 11.5 +02.0	N	21 10.7 +00.0	332 23.1 +02.8	N	22 12.2 +00.0	64 28.2 +02.4	S	08 41.0 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 232° 232° 232° 232° 232° 232°			SHA 283° 283° 283° 283° 283° 283°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 04:17			Greenwich Culmination Time: 00:54			Greenwich Culmination Time: 18:42						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183	15.7 -00.2	S 20 47.8 +00.5		137	06.1 -00.8	S 24 55.1 -00.4		249	10.1 -23.6	N 03 04.6 -14.1		00
01	198	15.5 -00.1	S 20 48.3 +00.5		152	05.3 -00.7	S 24 54.7 -00.3		263	46.5 -23.7	N 02 50.5 -14.1		01
02	213	15.4 -00.2	S 20 48.8 +00.4		167	04.6 -00.8	S 24 54.4 -00.3		278	22.8 -23.6	N 02 36.4 -14.1		02
03	228	15.2 -00.2	S 20 49.2 +00.5		182	03.8 -00.7	S 24 54.1 -00.3		292	59.2 -23.6	N 02 22.3 -14.2		03
04	243	15.0 -00.2	S 20 49.7 +00.5		197	03.1 -00.8	S 24 53.8 -00.4		307	35.6 -23.6	N 02 08.1 -14.1		04
05	258	14.8 -00.2	S 20 50.2 +00.5		212	02.3 -00.7	S 24 53.4 -00.3		322	12.0 -23.5	N 01 54.0 -14.1		05
06	273	14.6 -00.2	S 20 50.7 +00.5		227	01.6 -00.8	S 24 53.1 -00.3		336	48.5 -23.6	N 01 39.9 -14.1		06
07	288	14.4 -00.2	S 20 51.2 +00.4		242	00.8 -00.8	S 24 52.8 -00.4		351	24.9 -23.5	N 01 25.8 -14.1		07
08	303	14.2 -00.2	S 20 51.6 +00.5		257	00.0 -00.7	S 24 52.4 -00.3		6	01.4 -23.6	N 01 11.7 -14.2		08
09	318	14.0 -00.2	S 20 52.1 +00.5		271	59.3 -00.8	S 24 52.1 -00.3		20	37.8 -23.5	N 00 57.5 -14.1		09
10	333	13.8 -00.2	S 20 52.6 +00.5		286	58.5 -00.7	S 24 51.8 -00.4		35	14.3 -23.5	N 00 43.4 -14.1		10
11	348	13.6 -00.2	S 20 53.1 +00.5		301	57.8 -00.8	S 24 51.4 -00.3		49	50.8 -23.5	N 00 29.3 -14.1		11
12	3	13.4 -00.2	S 20 53.6 +00.4		316	57.0 -00.7	S 24 51.1 -00.3		64	27.3 -23.5	N 00 15.2 -14.2		12
13	18	13.2 -00.2	S 20 54.0 +00.5		331	56.3 -00.8	S 24 50.8 -00.4		79	03.8 -23.5	N 00 01.0 -14.1		13
14	33	13.0 -00.2	S 20 54.5 +00.5		346	55.5 -00.7	S 24 50.4 -00.3		93	40.3 -23.5	S 00 13.1 +14.1		14
15	48	12.8 -00.2	S 20 55.0 +00.5		1	54.8 -00.8	S 24 50.1 -00.4		108	16.8 -23.6	S 00 27.2 +14.1		15
16	63	12.6 -00.2	S 20 55.5 +00.4		16	54.0 -00.7	S 24 49.7 -00.3		122	53.2 -23.5	S 00 41.3 +14.1		16
17	78	12.4 -00.2	S 20 55.9 +00.5		31	53.3 -00.8	S 24 49.4 -00.4		137	29.7 -23.5	S 00 55.4 +14.1		17
18	93	12.2 -00.1	S 20 56.4 +00.5		46	52.5 -00.7	S 24 49.0 -00.3		152	06.2 -23.5	S 01 09.5 +14.1		18
19	108	12.1 -00.2	S 20 56.9 +00.5		61	51.8 -00.8	S 24 48.7 -00.4		166	42.7 -23.5	S 01 23.6 +14.1		19
20	123	11.9 -00.2	S 20 57.4 +00.4		76	51.0 -00.7	S 24 48.3 -00.3		181	19.2 -23.5	S 01 37.7 +14.1		20
21	138	11.7 -00.2	S 20 57.8 +00.5		91	50.3 -00.8	S 24 48.0 -00.4		195	55.7 -23.5	S 01 51.8 +14.1		21
22	153	11.5 -00.2	S 20 58.3 +00.5		106	49.5 -00.7	S 24 47.6 -00.3		210	32.2 -23.5	S 02 05.9 +14.1		22
23	168	11.3 -00.2	S 20 58.8 +00.4		121	48.8 -00.8	S 24 47.3 -00.4		225	08.7 -23.5	S 02 20.0 +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 16'2 16'2 16'2 16'2 16'2 16'2				SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 14'8 14'8 14'8 14'7 14'7 14'7				
	HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 54'2 54'2 54'2 54'1 54'1 54'1				
	SHA 119° 119° 118° 118° 118° 118°				SHA 073° 072° 072° 072° 072° 071°				SHA 184° 182° 180° 179° 177° 175°				
	Greenwich Culmination Time: 11:47				Greenwich Culmination Time: 14:52				Greenwich Culmination Time: 07:35				

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	296	13.5 +02.1	N 21 10.7 +00.0		347	25.9 +02.8	N 22 12.2 +00.0		79	30.6 +02.4	S 08 40.9 +00.0		00
01	311	15.6 +02.0	N 21 10.7 +00.0		2	28.7 +02.8	N 22 12.2 -00.1		94	33.0 +02.5	S 08 40.9 +00.0		01
02	326	17.6 +02.1	N 21 10.7 +00.0		17	31.5 +02.8	N 22 12.1 +00.0		109	35.5 +02.4	S 08 40.9 +00.0		02
03	341	19.7 +02.0	N 21 10.7 +00.0		32	34.3 +02.8	N 22 12.1 +00.0		124	37.9 +02.4	S 08 40.9 -00.1		03
04	356	21.7 +02.1	N 21 10.7 +00.0		47	37.1 +02.8	N 22 12.1 +00.0		139	40.3 +02.4	S 08 40.8 +00.0		04
05	11	23.8 +02.0	N 21 10.7 +00.0		62	39.9 +02.8	N 22 12.1 -00.1		154	42.7 +02.5	S 08 40.8 +00.0		05
06	26	25.8 +02.1	N 21 10.7 +00.1		77	42.7 +02.8	N 22 12.0 +00.0		169	45.2 +02.4	S 08 40.8 +00.0		06
07	41	27.9 +02.0	N 21 10.8 +00.0		92	45.5 +02.8	N 22 12.0 +00.0		184	47.6 +02.4	S 08 40.8 +00.0		07
08	56	29.9 +02.1	N 21 10.8 +00.0		107	48.3 +02.8	N 22 12.0 +00.0		199	50.0 +02.4	S 08 40.8 -00.1		08
09	71	32.0 +02.1	N 21 10.8 +00.0		122	51.1 +02.9	N 22 12.0 -00.1		214	52.4 +02.5	S 08 40.7 +00.0		09
10	86	34.1 +02.0	N 21 10.8 +00.0		137	54.0 +02.8	N 22 11.9 +00.0		229	54.9 +02.4	S 08 40.7 +00.0		10
11	101	36.1 +02.1	N 21 10.8 +00.0		152	56.8 +02.8	N 22 11.9 +00.0		244	57.3 +02.4	S 08 40.7 +00.0		11
12	116	38.2 +02.1	N 21 10.8 +00.0		167	59.6 +02.8	N 22 11.9 +00.0		259	59.7 +02.4	S 08 40.7 -00.1		12
13	131	40.3 +02.0	N 21 10.8 +00.0		183	02.4 +02.8	N 22 11.9 -00.1		275	02.1 +02.5	S 08 40.6 +00.0		13
14	146	42.3 +02.1	N 21 10.8 +00.1		198	05.2 +02.8	N 22 11.8 +00.0		290	04.6 +02.4	S 08 40.6 +00.0		14
15	161	44.4 +02.1	N 21 10.9 +00.0		213	08.0 +02.8	N 22 11.8 +00.0		305	07.0 +02.4	S 08 40.6 +00.0		15
16	176	46.5 +02.0	N 21 10.9 +00.0		228	10.8 +02.8	N 22 11.8 +00.0		320	09.4 +02.5	S 08 40.6 -00.1		16
17	191	48.5 +02.1	N 21 10.9 +00.0		243	13.6 +02.8	N 22 11.8 -00.1		335	11.9 +02.4	S 08 40.5 +00.0		17
18	206	50.6 +02.1	N 21 10.9 +00.0		258	16.4 +02.9	N 22 11.7 +00.0		350	14.3 +02.4	S 08 40.5 +00.0		18
19	221	52.7 +02.0	N 21 10.9 +00.0		273	19.3 +02.8	N 22 11.7 +00.0		5	16.7 +02.4	S 08 40.5 +00.0		19
20	236	54.7 +02.1	N 21 10.9 +00.1		288	22.1 +02.8	N 22 11.7 +00.0		20	19.1 +02.5	S 08 40.5 +00.0		20
21	251	56.8 +02.1	N 21 11.0 +00.0		303	24.9 +02.8	N 22 11.7 -00.1		35	21.6 +02.4	S 08 40.5 -00.1		21
22	266	58.9 +02.1	N 21 11.0 +00.0		318	27.7 +02.8	N 22 11.6 +00.0		50	24.0 +02.4	S 08 40.4 +00.0		22
23	282	01.0 +02.0	N 21 11.0 +00.0		333	30.5 +02.8	N 22 11.6 +00.0		65	26.4 +02.4	S 08 40.4 +00.0		23
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 00'4 00'4 00'4 00'4 00'4 00'4				SD 00'1 00'1 00'1 00'1 00'1 00'1				
	HP 00'2 00'2 00'2 00'2 00'2 00'2				HP 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 232° 232° 232° 232° 232° 232°				SHA 283° 283° 283° 283° 283° 283°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 04:14				Greenwich Culmination Time: 00:50				Greenwich Culmination Time: 18:38				



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	11.1 -00.2	S 20 59.2 +00.5		136	48.0 -00.7	S 24 46.9 -00.3		239	45.2 -23.6	S 02 34.0 +14.1		00
01	198	10.9 -00.2	S 20 59.7 +00.5		151	47.3 -00.8	S 24 46.6 -00.4		254	21.6 -23.5	S 02 48.1 +14.0		01
02	213	10.7 -00.2	S 21 00.2 +00.4		166	46.5 -00.7	S 24 46.2 -00.3		268	58.1 -23.6	S 03 02.1 +14.1		02
03	228	10.5 -00.2	S 21 00.6 +00.5		181	45.8 -00.8	S 24 45.9 -00.4		283	34.5 -23.6	S 03 16.2 +14.0		03
04	243	10.3 -00.2	S 21 01.1 +00.5		196	45.0 -00.7	S 24 45.5 -00.3		298	10.9 -23.5	S 03 30.2 +14.0		04
05	258	10.1 -00.2	S 21 01.6 +00.4		211	44.3 -00.8	S 24 45.2 -00.4		312	47.4 -23.6	S 03 44.2 +14.0		05
06	273	09.9 -00.2	S 21 02.0 +00.5		226	43.5 -00.7	S 24 44.8 -00.4		327	23.8 -23.7	S 03 58.2 +14.0		06
07	288	09.7 -00.2	S 21 02.5 +00.5		241	42.8 -00.7	S 24 44.4 -00.3		342	00.1 -23.6	S 04 12.2 +13.9		07
08	303	09.5 -00.2	S 21 03.0 +00.4		256	42.1 -00.8	S 24 44.1 -00.4		356	36.5 -23.6	S 04 26.1 +14.0		08
09	318	09.3 -00.2	S 21 03.4 +00.5		271	41.3 -00.7	S 24 43.7 -00.4		11	12.9 -23.7	S 04 40.1 +13.9		09
10	333	09.1 -00.2	S 21 03.9 +00.5		286	40.6 -00.8	S 24 43.3 -00.3		25	49.2 -23.7	S 04 54.0 +14.0		10
11	348	08.9 -00.2	S 21 04.4 +00.4		301	39.8 -00.7	S 24 43.0 -00.4		40	25.5 -23.7	S 05 08.0 +13.9		11
12	3	08.7 -00.2	S 21 04.8 +00.5		316	39.1 -00.8	S 24 42.6 -00.4		55	01.8 -23.8	S 05 21.9 +13.9		12
13	18	08.5 -00.2	S 21 05.3 +00.4		331	38.3 -00.7	S 24 42.2 -00.3		69	38.0 -23.7	S 05 35.8 +13.8		13
14	33	08.3 -00.3	S 21 05.7 +00.5		346	37.6 -00.7	S 24 41.9 -00.4		84	14.3 -23.8	S 05 49.6 +13.9		14
15	48	08.0 -00.2	S 21 06.2 +00.4		1	36.9 -00.8	S 24 41.5 -00.4		98	50.5 -23.8	S 06 03.5 +13.8		15
16	63	07.8 -00.2	S 21 06.6 +00.5		16	36.1 -00.7	S 24 41.1 -00.3		113	26.7 -23.8	S 06 17.3 +13.8		16
17	78	07.6 -00.2	S 21 07.1 +00.5		31	35.4 -00.8	S 24 40.8 -00.4		128	02.9 -23.9	S 06 31.1 +13.8		17
18	93	07.4 -00.2	S 21 07.6 +00.4		46	34.6 -00.7	S 24 40.4 -00.4		142	39.0 -23.9	S 06 44.9 +13.8		18
19	108	07.2 -00.2	S 21 08.0 +00.5		61	33.9 -00.7	S 24 40.0 -00.4		157	15.1 -23.9	S 06 58.7 +13.7		19
20	123	07.0 -00.2	S 21 08.5 +00.4		76	33.2 -00.8	S 24 39.6 -00.4		171	51.2 -24.0	S 07 12.4 +13.7		20
21	138	06.8 -00.2	S 21 08.9 +00.5		91	32.4 -00.7	S 24 39.2 -00.3		186	27.2 -23.9	S 07 26.1 +13.7		21
22	153	06.6 -00.2	S 21 09.4 +00.4		106	31.7 -00.7	S 24 38.9 -00.4		201	03.3 -24.1	S 07 39.8 +13.7		22
23	168	06.4 -00.2	S 21 09.8 +00.5		121	31.0 -00.8	S 24 38.5 -00.4		215	39.2 -24.0	S 07 53.5 +13.7		23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 16'2 16'2 16'2 16'2 16'2 16'2				SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 14'7 14'7 14'7 14'7 14'7 14'7				
	HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 54'1 54'1 54'1 54'1 54'1 54'1				
	SHA 118° 118° 117° 117° 117° 117°				SHA 071° 071° 071° 071° 070° 070°				SHA 173° 172° 170° 168° 166° 165°				
	Greenwich Culmination Time: 11:47				Greenwich Culmination Time: 14:53				Greenwich Culmination Time: 08:13				

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	297	03.0 +02.1	N 21 11.0 +00.0		348	33.3 +02.8	N 22 11.6 +00.0		80	28.8 +02.4	S 08 40.4 +00.0		00
01	312	05.1 +02.1	N 21 11.0 +00.0		3	36.1 +02.8	N 22 11.6 -00.1		95	31.2 +02.5	S 08 40.4 -00.1		01
02	327	07.2 +02.1	N 21 11.0 +00.1		18	38.9 +02.9	N 22 11.5 +00.0		110	33.7 +02.4	S 08 40.3 +00.0		02
03	342	09.3 +02.1	N 21 11.1 +00.0		33	41.8 +02.8	N 22 11.5 +00.0		125	36.1 +02.4	S 08 40.3 +00.0		03
04	357	11.4 +02.0	N 21 11.1 +00.0		48	44.6 +02.8	N 22 11.5 +00.0		140	38.5 +02.4	S 08 40.3 +00.0		04
05	12	13.4 +02.1	N 21 11.1 +00.0		63	47.4 +02.8	N 22 11.5 -00.1		155	40.9 +02.5	S 08 40.3 -00.1		05
06	27	15.5 +02.1	N 21 11.1 +00.0		78	50.2 +02.8	N 22 11.4 +00.0		170	43.4 +02.4	S 08 40.2 +00.0		06
07	42	17.6 +02.1	N 21 11.1 +00.1		93	53.0 +02.8	N 22 11.4 +00.0		185	45.8 +02.4	S 08 40.2 +00.0		07
08	57	19.7 +02.1	N 21 11.2 +00.0		108	55.8 +02.8	N 22 11.4 +00.0		200	48.2 +02.4	S 08 40.2 +00.0		08
09	72	21.8 +02.1	N 21 11.2 +00.0		123	58.6 +02.8	N 22 11.4 -00.1		215	50.6 +02.5	S 08 40.2 -00.1		09
10	87	23.9 +02.1	N 21 11.2 +00.0		139	01.4 +02.9	N 22 11.3 +00.0		230	53.1 +02.4	S 08 40.1 +00.0		10
11	102	26.0 +02.1	N 21 11.2 +00.1		154	04.3 +02.8	N 22 11.3 +00.0		245	55.5 +02.4	S 08 40.1 +00.0		11
12	117	28.1 +02.1	N 21 11.3 +00.0		169	07.1 +02.8	N 22 11.3 +00.0		260	57.9 +02.4	S 08 40.1 +00.0		12
13	132	30.2 +02.0	N 21 11.3 +00.0		184	09.9 +02.8	N 22 11.3 -00.1		276	00.3 +02.4	S 08 40.1 -00.1		13
14	147	32.2 +02.1	N 21 11.3 +00.0		199	12.7 +02.8	N 22 11.2 +00.0		291	02.7 +02.5	S 08 40.0 +00.0		14
15	162	34.3 +02.1	N 21 11.3 +00.0		214	15.5 +02.8	N 22 11.2 +00.0		306	05.2 +02.4	S 08 40.0 +00.0		15
16	177	36.4 +02.1	N 21 11.3 +00.1		229	18.3 +02.8	N 22 11.2 -00.1		321	07.6 +02.4	S 08 40.0 +00.0		16
17	192	38.5 +02.1	N 21 11.4 +00.0		244	21.1 +02.9	N 22 11.1 +00.0		336	10.0 +02.4	S 08 40.0 -00.1		17
18	207	40.6 +02.1	N 21 11.4 +00.0		259	24.0 +02.8	N 22 11.1 +00.0		351	12.4 +02.5	S 08 39.9 +00.0		18
19	222	42.7 +02.1	N 21 11.4 +00.0		274	26.8 +02.8	N 22 11.1 +00.0		6	14.9 +02.4	S 08 39.9 +00.0		19
20	237	44.8 +02.1	N 21 11.4 +00.1		289	29.6 +02.8	N 22 11.1 -00.1		21	17.3 +02.4	S 08 39.9 +00.0		20
21	252	46.9 +02.2	N 21 11.5 +00.0		304	32.4 +02.8	N 22 11.0 +00.0		36	19.7 +02.4	S 08 39.9 -00.1		21
22	267	49.1 +02.1	N 21 11.5 +00.0		319	35.2 +02.8	N 22 11.0 +00.0		51	22.1 +02.4	S 08 39.8 +00.0		22
23	282	51.2 +02.1	N 21 11.5 +00.0		334	38.0 +02.8	N 22 11.0 +00.0		66	24.5 +02.5	S 08 39.8 +00.0		23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				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 00'2 00'2 00'2 00'2 00'2 00'2				HP 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 232° 232° 232° 232° 232° 231°				SHA 283° 283° 283° 283° 283° 283°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 04:11				Greenwich Culmination Time: 00:45				Greenwich Culmination Time: 18:35				

UT	<b>Sun</b>				<b>Venus</b>				<b>Moon</b>				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	183 06.2 -00.2	S	21 10.3 +00.4	136 30.2 -00.7	S	24 38.1 -00.4	230 15.2 -24.1	S	08 07.2 +13.6	00										
01	198 06.0 -00.2	S	21 10.7 +00.5	151 29.5 -00.8	S	24 37.7 -00.4	244 51.1 -24.1	S	08 20.8 +13.6	01										
02	213 05.8 -00.2	S	21 11.2 +00.4	166 28.7 -00.7	S	24 37.3 -00.3	259 27.0 -24.2	S	08 34.4 +13.5	02										
03	228 05.6 -00.2	S	21 11.6 +00.5	181 28.0 -00.7	S	24 37.0 -00.4	274 02.8 -24.2	S	08 47.9 +13.6	03										
04	243 05.4 -00.2	S	21 12.1 +00.4	196 27.3 -00.8	S	24 36.6 -00.4	288 38.6 -24.2	S	09 01.5 +13.5	04										
05	258 05.2 -00.2	S	21 12.5 +00.5	211 26.5 -00.7	S	24 36.2 -00.4	303 14.4 -24.3	S	09 15.0 +13.5	05										
06	273 05.0 -00.2	S	21 13.0 +00.4	226 25.8 -00.7	S	24 35.8 -00.4	317 50.1 -24.3	S	09 28.5 +13.4	06										
07	288 04.8 -00.3	S	21 13.4 +00.5	241 25.1 -00.8	S	24 35.4 -00.4	332 25.8 -24.4	S	09 41.9 +13.4	07										
08	303 04.5 -00.2	S	21 13.9 +00.4	256 24.3 -00.7	S	24 35.0 -00.4	347 01.4 -24.4	S	09 55.3 +13.4	08										
09	318 04.3 -00.2	S	21 14.3 +00.5	271 23.6 -00.7	S	24 34.6 -00.4	1 37.0 -24.5	S	10 08.7 +13.4	09										
10	333 04.1 -00.2	S	21 14.8 +00.4	286 22.9 -00.7	S	24 34.2 -00.4	16 12.5 -24.5	S	10 22.1 +13.3	10										
11	348 03.9 -00.2	S	21 15.2 +00.5	301 22.2 -00.8	S	24 33.8 -00.4	30 48.0 -24.5	S	10 35.4 +13.3	11										
12	3 03.7 -00.2	S	21 15.7 +00.4	316 21.4 -00.7	S	24 33.4 -00.4	45 23.5 -24.6	S	10 48.7 +13.2	12										
13	18 03.5 -00.2	S	21 16.1 +00.5	331 20.7 -00.7	S	24 33.0 -00.4	59 58.9 -24.6	S	11 01.9 +13.2	13										
14	33 03.3 -00.2	S	21 16.6 +00.4	346 20.0 -00.8	S	24 32.6 -00.4	74 34.3 -24.7	S	11 15.1 +13.2	14										
15	48 03.1 -00.2	S	21 17.0 +00.4	1 19.2 -00.7	S	24 32.2 -00.4	89 09.6 -24.8	S	11 28.3 +13.2	15										
16	63 02.9 -00.2	S	21 17.4 +00.5	16 18.5 -00.7	S	24 31.8 -00.4	103 44.8 -24.8	S	11 41.5 +13.1	16										
17	78 02.7 -00.3	S	21 17.9 +00.4	31 17.8 -00.7	S	24 31.4 -00.4	118 20.0 -24.8	S	11 54.6 +13.0	17										
18	93 02.4 -00.2	S	21 18.3 +00.5	46 17.1 -00.8	S	24 31.0 -00.4	132 55.2 -24.9	S	12 07.6 +13.0	18										
19	108 02.2 -00.2	S	21 18.8 +00.4	61 16.3 -00.7	S	24 30.6 -00.4	147 30.3 -25.0	S	12 20.6 +13.0	19										
20	123 02.0 -00.2	S	21 19.2 +00.4	76 15.6 -00.7	S	24 30.2 -00.4	162 05.3 -25.0	S	12 33.6 +12.9	20										
21	138 01.8 -00.2	S	21 19.6 +00.5	91 14.9 -00.7	S	24 29.8 -00.4	176 40.3 -25.1	S	12 46.5 +12.9	21										
22	153 01.6 -00.2	S	21 20.1 +00.4	106 14.2 -00.8	S	24 29.4 -00.4	191 15.2 -25.1	S	12 59.4 +12.9	22										
23	168 01.4 -00.2	S	21 20.5 +00.4	121 13.4 -00.7	S	24 29.0 -00.4	205 50.1 -25.2	S	13 12.3 +12.8	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16'2	16'2	16'2	16'2	16'2	16'2	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	14'7	14'7	14'7	14'8	14'8	14'8
HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	00'1	00'1	00'1	00'1	00'1	00'1	HP	54'1	54'1	54'1	54'2	54'2	54'2
SHA	117°	116°	116°	116°	116°	116°	SHA	070°	070°	070°	069°	069°	069°	SHA	163°	161°	159°	158°	156°	154°
Greenwich Culmination Time: 11:47							Greenwich Culmination Time: 14:54							Greenwich Culmination Time: 08:53						

  

UT	<b>Mars</b>				<b>Jupiter</b>				<b>Saturn</b>				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	297 53.3 +02.1	N	21 11.5 +00.1	349 40.8 +02.9	N	22 11.0 -00.1	81 27.0 +02.4	S	08 39.8 +00.0	00										
01	312 55.4 +02.1	N	21 11.6 +00.0	4 43.7 +02.8	N	22 10.9 +00.0	96 29.4 +02.4	S	08 39.8 -00.1	01										
02	327 57.5 +02.1	N	21 11.6 +00.0	19 46.5 +02.8	N	22 10.9 +00.0	111 31.8 +02.4	S	08 39.7 +00.0	02										
03	342 59.6 +02.1	N	21 11.6 +00.0	34 49.3 +02.8	N	22 10.9 +00.0	126 34.2 +02.4	S	08 39.7 +00.0	03										
04	358 01.7 +02.1	N	21 11.6 +00.1	49 52.1 +02.8	N	22 10.9 -00.1	141 36.6 +02.5	S	08 39.7 +00.0	04										
05	13 03.8 +02.1	N	21 11.7 +00.0	64 54.9 +02.8	N	22 10.8 +00.0	156 39.1 +02.4	S	08 39.7 -00.1	05										
06	28 05.9 +02.2	N	21 11.7 +00.0	79 57.7 +02.9	N	22 10.8 +00.0	171 41.5 +02.4	S	08 39.6 +00.0	06										
07	43 08.1 +02.1	N	21 11.7 +00.1	95 00.6 +02.8	N	22 10.8 +00.0	186 43.9 +02.4	S	08 39.6 +00.0	07										
08	58 10.2 +02.1	N	21 11.8 +00.0	110 03.4 +02.8	N	22 10.8 -00.1	201 46.3 +02.4	S	08 39.6 -00.1	08										
09	73 12.3 +02.1	N	21 11.8 +00.0	125 06.2 +02.8	N	22 10.7 +00.0	216 48.7 +02.4	S	08 39.5 +00.0	09										
10	88 14.4 +02.1	N	21 11.8 +00.0	140 09.0 +02.8	N	22 10.7 +00.0	231 51.1 +02.5	S	08 39.5 +00.0	10										
11	103 16.5 +02.2	N	21 11.8 +00.1	155 11.8 +02.8	N	22 10.7 +00.0	246 53.6 +02.4	S	08 39.5 +00.0	11										
12	118 18.7 +02.1	N	21 11.9 +00.0	170 14.6 +02.9	N	22 10.7 -00.1	261 56.0 +02.4	S	08 39.5 -00.1	12										
13	133 20.8 +02.1	N	21 11.9 +00.0	185 17.5 +02.8	N	22 10.6 +00.0	276 58.4 +02.4	S	08 39.4 +00.0	13										
14	148 22.9 +02.1	N	21 11.9 +00.1	200 20.3 +02.8	N	22 10.6 +00.0	292 00.8 +02.4	S	08 39.4 +00.0	14										
15	163 25.0 +02.2	N	21 12.0 +00.0	215 23.1 +02.8	N	22 10.6 +00.0	307 03.2 +02.5	S	08 39.4 +00.0	15										
16	178 27.2 +02.1	N	21 12.0 +00.0	230 25.9 +02.8	N	22 10.6 -00.1	322 05.7 +02.4	S	08 39.4 -00.1	16										
17	193 29.3 +02.1	N	21 12.0 +00.1	245 28.7 +02.8	N	22 10.5 +00.0	337 08.1 +02.4	S	08 39.3 +00.0	17										
18	208 31.4 +02.1	N	21 12.1 +00.0	260 31.5 +02.9	N	22 10.5 +00.0	352 10.5 +02.4	S	08 39.3 +00.0	18										
19	223 33.5 +02.2	N	21 12.1 +00.0	275 34.4 +02.8	N	22 10.5 +00.0	7 12.9 +02.4	S	08 39.3 +00.0	19										
20	238 35.7 +02.1	N	21 12.1 +00.1	290 37.2 +02.8	N	22 10.5 -00.1	22 15.3 +02.4	S	08 39.3 -00.1	20										
21	253 37.8 +02.1	N	21 12.2 +00.0	305 40.0 +02.8	N	22 10.4 +00.0	37 17.7 +02.5	S	08 39.2 +00.0	21										
22	268 39.9 +02.2	N	21 12.2 +00.0	320 42.8 +02.8	N	22 10.4 +00.0	52 20.2 +02.4	S	08 39.2 +00.0	22										
23	283 42.1 +02.1	N	21 12.2 +00.0	335 45.6 +02.9	N	22 10.4 -00.1	67 22.6 +02.4	S	08 39.2 -00.1	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	00'4	00'4	00'4	00'4	00'4	00'4	SD	00'1	00'1	00'1	00'1	00'1	00'1
HP	00'2	00'2	00'2	00'2	00'2	00'2	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP	00'0	00'0	00'0	00'0	00'0	00'0
SHA	231°	231°	231°	231°	231°	231°	SHA	283°	283°	283°	283°	283°	283°	SHA	015°	015°	015°	015°	015°	015°
Greenwich Culmination Time: 04:07							Greenwich Culmination Time: 00:41							Greenwich Culmination Time: 18:31						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	183 01.2 -00.3	S	21 20.9 +00.5	136 12.7 -00.7	S	24 28.6 -00.4	220 24.9 -25.3	S	13 25.1 +12.7	00			
01	198 00.9 -00.2	S	21 21.4 +00.4	151 12.0 -00.7	S	24 28.2 -00.4	234 59.6 -25.3	S	13 37.8 +12.8	01			
02	213 00.7 -00.2	S	21 21.8 +00.5	166 11.3 -00.8	S	24 27.8 -00.4	249 34.3 -25.4	S	13 50.6 +12.6	02			
03	228 00.5 -00.2	S	21 22.3 +00.4	181 10.5 -00.7	S	24 27.4 -00.5	264 08.9 -25.4	S	14 03.2 +12.6	03			
04	243 00.3 -00.2	S	21 22.7 +00.4	196 09.8 -00.7	S	24 26.9 -00.4	278 43.5 -25.5	S	14 15.8 +12.6	04			
05	258 00.1 -00.2	S	21 23.1 +00.5	211 09.1 -00.7	S	24 26.5 -00.4	293 18.0 -25.6	S	14 28.4 +12.5	05			
06	272 59.9 -00.2	S	21 23.6 +00.4	226 08.4 -00.7	S	24 26.1 -00.4	307 52.4 -25.6	S	14 40.9 +12.5	06			
07	287 59.7 -00.3	S	21 24.0 +00.4	241 07.7 -00.8	S	24 25.7 -00.4	322 26.8 -25.7	S	14 53.4 +12.4	07			
08	302 59.4 -00.2	S	21 24.4 +00.4	256 06.9 -00.7	S	24 25.3 -00.4	337 01.1 -25.7	S	15 05.8 +12.3	08			
09	317 59.2 -00.2	S	21 24.8 +00.5	271 06.2 -00.7	S	24 24.9 -00.5	351 35.4 -25.9	S	15 18.1 +12.3	09			
10	332 59.0 -00.2	S	21 25.3 +00.4	286 05.5 -00.7	S	24 24.4 -00.4	6 09.5 -25.9	S	15 30.4 +12.3	10			
11	347 58.8 -00.2	S	21 25.7 +00.4	301 04.8 -00.7	S	24 24.0 -00.4	20 43.6 -25.9	S	15 42.7 +12.2	11			
12	2 58.6 -00.2	S	21 26.1 +00.5	316 04.1 -00.8	S	24 23.6 -00.4	35 17.7 -26.1	S	15 54.9 +12.1	12			
13	17 58.4 -00.3	S	21 26.6 +00.4	331 03.3 -00.7	S	24 23.2 -00.5	49 51.6 -26.1	S	16 07.0 +12.1	13			
14	32 58.1 -00.2	S	21 27.0 +00.4	346 02.6 -00.7	S	24 22.7 -00.4	64 25.5 -26.2	S	16 19.1 +12.0	14			
15	47 57.9 -00.2	S	21 27.4 +00.4	1 01.9 -00.7	S	24 22.3 -00.4	78 59.3 -26.2	S	16 31.1 +12.0	15			
16	62 57.7 -00.2	S	21 27.8 +00.5	16 01.2 -00.7	S	24 21.9 -00.4	93 33.1 -26.4	S	16 43.1 +11.9	16			
17	77 57.5 -00.2	S	21 28.3 +00.4	31 00.5 -00.7	S	24 21.5 -00.5	108 06.7 -26.4	S	16 55.0 +11.8	17			
18	92 57.3 -00.3	S	21 28.7 +00.4	45 59.8 -00.7	S	24 21.0 -00.4	122 40.3 -26.4	S	17 06.8 +11.8	18			
19	107 57.0 -00.2	S	21 29.1 +00.4	60 59.1 -00.8	S	24 20.6 -00.4	137 13.9 -26.6	S	17 18.6 +11.7	19			
20	122 56.8 -00.2	S	21 29.5 +00.4	75 58.3 -00.7	S	24 20.2 -00.5	151 47.3 -26.6	S	17 30.3 +11.6	20			
21	137 56.6 -00.2	S	21 29.9 +00.5	90 57.6 -00.7	S	24 19.7 -00.4	166 20.7 -26.8	S	17 41.9 +11.6	21			
22	152 56.4 -00.2	S	21 30.4 +00.4	105 56.9 -00.7	S	24 19.3 -00.4	180 53.9 -26.7	S	17 53.5 +11.5	22			
23	167 56.2 -00.3	S	21 30.8 +00.4	120 56.2 -00.7	S	24 18.9 -00.5	195 27.2 -26.9	S	18 05.0 +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 16'2 16'2 16'2 16'2 16'2 16'2				SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 14'8 14'8 14'8 14'8 14'8 14'8					
HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 00'1 00'1 00'1 00'1 00'1 00'1				HP 54'2 54'3 54'3 54'4 54'4 54'4					
SHA 116° 115° 115° 115° 115° 115°				SHA 069° 069° 068° 068° 068° 068°				SHA 152° 150° 148° 146° 145° 143°					
Greenwich Culmination Time: 11:48				Greenwich Culmination Time: 14:55				Greenwich Culmination Time: 09:34					
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	298 44.2 +02.2	N	21 12.2 +00.1	350 48.5 +02.8	N	22 10.3 +00.0	82 25.0 +02.4	S	08 39.1 +00.0	00			
01	313 46.4 +02.1	N	21 12.3 +00.0	5 51.3 +02.8	N	22 10.3 +00.0	97 27.4 +02.4	S	08 39.1 +00.0	01			
02	328 48.5 +02.1	N	21 12.3 +00.1	20 54.1 +02.8	N	22 10.3 +00.0	112 29.8 +02.4	S	08 39.1 +00.0	02			
03	343 50.6 +02.2	N	21 12.4 +00.0	35 56.9 +02.8	N	22 10.3 -00.1	127 32.2 +02.4	S	08 39.1 -00.1	03			
04	358 52.8 +02.1	N	21 12.4 +00.0	50 59.7 +02.8	N	22 10.2 +00.0	142 34.6 +02.5	S	08 39.0 +00.0	04			
05	13 54.9 +02.2	N	21 12.4 +00.1	66 02.5 +02.9	N	22 10.2 +00.0	157 37.1 +02.4	S	08 39.0 +00.0	05			
06	28 57.1 +02.1	N	21 12.5 +00.0	81 05.4 +02.8	N	22 10.2 +00.0	172 39.5 +02.4	S	08 39.0 -00.1	06			
07	43 59.2 +02.2	N	21 12.5 +00.0	96 08.2 +02.8	N	22 10.2 -00.1	187 41.9 +02.4	S	08 38.9 +00.0	07			
08	59 01.4 +02.1	N	21 12.5 +00.1	111 11.0 +02.8	N	22 10.1 +00.0	202 44.3 +02.4	S	08 38.9 +00.0	08			
09	74 03.5 +02.2	N	21 12.6 +00.0	126 13.8 +02.8	N	22 10.1 +00.0	217 46.7 +02.4	S	08 38.9 +00.0	09			
10	89 05.7 +02.1	N	21 12.6 +00.0	141 16.6 +02.9	N	22 10.1 +00.0	232 49.1 +02.5	S	08 38.9 -00.1	10			
11	104 07.8 +02.2	N	21 12.6 +00.1	156 19.5 +02.8	N	22 10.1 -00.1	247 51.6 +02.4	S	08 38.8 +00.0	11			
12	119 10.0 +02.1	N	21 12.7 +00.0	171 22.3 +02.8	N	22 10.0 +00.0	262 54.0 +02.4	S	08 38.8 +00.0	12			
13	134 12.1 +02.2	N	21 12.7 +00.1	186 25.1 +02.8	N	22 10.0 +00.0	277 56.4 +02.4	S	08 38.8 -00.1	13			
14	149 14.3 +02.1	N	21 12.8 +00.0	201 27.9 +02.8	N	22 10.0 +00.0	292 58.8 +02.4	S	08 38.7 +00.0	14			
15	164 16.4 +02.2	N	21 12.8 +00.0	216 30.7 +02.9	N	22 10.0 -00.1	308 01.2 +02.4	S	08 38.7 +00.0	15			
16	179 18.6 +02.2	N	21 12.8 +00.1	231 33.6 +02.8	N	22 09.9 +00.0	323 03.6 +02.4	S	08 38.7 +00.0	16			
17	194 20.8 +02.1	N	21 12.9 +00.0	246 36.4 +02.8	N	22 09.9 +00.0	338 06.0 +02.4	S	08 38.7 -00.1	17			
18	209 22.9 +02.2	N	21 12.9 +00.1	261 39.2 +02.8	N	22 09.9 -00.1	353 08.4 +02.5	S	08 38.6 +00.0	18			
19	224 25.1 +02.1	N	21 13.0 +00.0	276 42.0 +02.8	N	22 09.8 +00.0	8 10.9 +02.4	S	08 38.6 +00.0	19			
20	239 27.2 +02.2	N	21 13.0 +00.0	291 44.8 +02.9	N	22 09.8 +00.0	23 13.3 +02.4	S	08 38.6 -00.1	20			
21	254 29.4 +02.2	N	21 13.0 +00.1	306 47.7 +02.8	N	22 09.8 +00.0	38 15.7 +02.4	S	08 38.5 +00.0	21			
22	269 31.6 +02.1	N	21 13.1 +00.0	321 50.5 +02.8	N	22 09.8 -00.1	53 18.1 +02.4	S	08 38.5 +00.0	22			
23	284 33.7 +02.2	N	21 13.1 +00.1	336 53.3 +02.8	N	22 09.7 +00.0	68 20.5 +02.4	S	08 38.5 +00.0	23			
UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22					
SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 00'4 00'4 00'4 00'4 00'4 00'4				SD 00'1 00'1 00'1 00'1 00'1 00'1					
HP 00'2 00'2 00'2 00'2 00'2 00'2				HP 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0					
SHA 231° 231° 231° 231° 231° 231°				SHA 283° 283° 283° 284° 284° 284°				SHA 015° 015° 015° 015° 015° 015°					
Greenwich Culmination Time: 04:04				Greenwich Culmination Time: 00:36				Greenwich Culmination Time: 18:27					

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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 55.9 -00.2	S	21 31.2 +00.4	135 55.5 -00.7	S	24 18.4 -00.4	210 00.3 -27.0	S	18 16.5 +11.4	00			
01	197 55.7 -00.2	S	21 31.6 +00.4	150 54.8 -00.7	S	24 18.0 -00.5	224 33.3 -27.0	S	18 27.9 +11.3	01			
02	212 55.5 -00.2	S	21 32.0 +00.5	165 54.1 -00.7	S	24 17.5 -00.4	239 06.3 -27.1	S	18 39.2 +11.2	02			
03	227 55.3 -00.2	S	21 32.5 +00.4	180 53.4 -00.7	S	24 17.1 -00.4	253 39.2 -27.2	S	18 50.4 +11.2	03			
04	242 55.1 -00.3	S	21 32.9 +00.4	195 52.7 -00.7	S	24 16.7 -00.5	268 12.0 -27.3	S	19 01.6 +11.0	04			
05	257 54.8 -00.2	S	21 33.3 +00.4	210 52.0 -00.7	S	24 16.2 -00.4	282 44.7 -27.3	S	19 12.6 +11.1	05			
06	272 54.6 -00.2	S	21 33.7 +00.4	225 51.3 -00.8	S	24 15.8 -00.5	297 17.4 -27.5	S	19 23.7 +10.9	06			
07	287 54.4 -00.2	S	21 34.1 +00.4	240 50.5 -00.7	S	24 15.3 -00.4	311 49.9 -27.5	S	19 34.6 +10.9	07			
08	302 54.2 -00.3	S	21 34.5 +00.4	255 49.8 -00.7	S	24 14.9 -00.5	326 22.4 -27.6	S	19 45.5 +10.7	08			
09	317 53.9 -00.2	S	21 34.9 +00.5	270 49.1 -00.7	S	24 14.4 -00.4	340 54.8 -27.7	S	19 56.2 +10.7	09			
10	332 53.7 -00.2	S	21 35.4 +00.4	285 48.4 -00.7	S	24 14.0 -00.5	355 27.1 -27.8	S	20 06.9 +10.7	10			
11	347 53.5 -00.2	S	21 35.8 +00.4	300 47.7 -00.7	S	24 13.5 -00.4	9 59.3 -27.8	S	20 17.6 +10.5	11			
12	2 53.3 -00.3	S	21 36.2 +00.4	315 47.0 -00.7	S	24 13.1 -00.5	24 31.5 -28.0	S	20 28.1 +10.5	12			
13	17 53.0 -00.2	S	21 36.6 +00.4	330 46.3 -00.7	S	24 12.6 -00.4	39 03.5 -28.0	S	20 38.6 +10.3	13			
14	32 52.8 -00.2	S	21 37.0 +00.4	345 45.6 -00.7	S	24 12.2 -00.5	53 35.5 -28.2	S	20 48.9 +10.3	14			
15	47 52.6 -00.2	S	21 37.4 +00.4	0 44.9 -00.7	S	24 11.7 -00.4	68 07.3 -28.2	S	20 59.2 +10.2	15			
16	62 52.4 -00.3	S	21 37.8 +00.4	15 44.2 -00.7	S	24 11.3 -00.5	82 39.1 -28.3	S	21 09.4 +10.2	16			
17	77 52.1 -00.2	S	21 38.2 +00.4	30 43.5 -00.7	S	24 10.8 -00.5	97 10.8 -28.4	S	21 19.6 +10.0	17			
18	92 51.9 -00.2	S	21 38.6 +00.4	45 42.8 -00.7	S	24 10.3 -00.4	111 42.4 -28.4	S	21 29.6 +09.9	18			
19	107 51.7 -00.2	S	21 39.0 +00.4	60 42.1 -00.7	S	24 09.9 -00.5	126 14.0 -28.6	S	21 39.5 +09.9	19			
20	122 51.5 -00.3	S	21 39.4 +00.4	75 41.4 -00.7	S	24 09.4 -00.4	140 45.4 -28.7	S	21 49.4 +09.7	20			
21	137 51.2 -00.2	S	21 39.8 +00.4	90 40.7 -00.7	S	24 09.0 -00.5	155 16.7 -28.7	S	21 59.1 +09.7	21			
22	152 51.0 -00.2	S	21 40.2 +00.4	105 40.0 -00.7	S	24 08.5 -00.5	169 48.0 -28.9	S	22 08.8 +09.6	22			
23	167 50.8 -00.3	S	21 40.6 +00.5	120 39.3 -00.7	S	24 08.0 -00.4	184 19.1 -28.9	S	22 18.4 +09.4	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 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 00'1 00'1 00'1 00'1 00'1 00'1			HP 54'5 54'5 54'6 54'7 54'7 54'8						
	SHA 114° 114° 114° 114° 114° 114°			SHA 067° 067° 067° 067° 067° 066°			SHA 141° 139° 137° 135° 133° 131°						
	Greenwich Culmination Time: 11:48			Greenwich Culmination Time: 14:57			Greenwich Culmination Time: 10:18						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	299 35.9 +02.2	N	21 13.2 +00.0	351 56.1 +02.8	N	22 09.7 +00.0	83 22.9 +02.4	S	08 38.5 -00.1	00			
01	314 38.1 +02.2	N	21 13.2 +00.0	6 58.9 +02.9	N	22 09.7 +00.0	98 25.3 +02.4	S	08 38.4 +00.0	01			
02	329 40.3 +02.1	N	21 13.2 +00.1	22 01.8 +02.8	N	22 09.7 -00.1	113 27.7 +02.5	S	08 38.4 +00.0	02			
03	344 42.4 +02.2	N	21 13.3 +00.0	37 04.6 +02.8	N	22 09.6 +00.0	128 30.2 +02.4	S	08 38.4 -00.1	03			
04	359 44.6 +02.2	N	21 13.3 +00.1	52 07.4 +02.8	N	22 09.6 +00.0	143 32.6 +02.4	S	08 38.3 +00.0	04			
05	14 46.8 +02.2	N	21 13.4 +00.0	67 10.2 +02.8	N	22 09.6 +00.0	158 35.0 +02.4	S	08 38.3 +00.0	05			
06	29 49.0 +02.1	N	21 13.4 +00.1	82 13.0 +02.9	N	22 09.6 -00.1	173 37.4 +02.4	S	08 38.3 +00.0	06			
07	44 51.1 +02.2	N	21 13.5 +00.0	97 15.9 +02.8	N	22 09.5 +00.0	188 39.8 +02.4	S	08 38.3 -00.1	07			
08	59 53.3 +02.2	N	21 13.5 +00.0	112 18.7 +02.8	N	22 09.5 +00.0	203 42.2 +02.4	S	08 38.2 +00.0	08			
09	74 55.5 +02.2	N	21 13.5 +00.1	127 21.5 +02.8	N	22 09.5 +00.0	218 44.6 +02.4	S	08 38.2 +00.0	09			
10	89 57.7 +02.2	N	21 13.6 +00.0	142 24.3 +02.9	N	22 09.5 -00.1	233 47.0 +02.4	S	08 38.2 -00.1	10			
11	104 59.9 +02.1	N	21 13.6 +00.1	157 27.2 +02.8	N	22 09.4 +00.0	248 49.4 +02.5	S	08 38.1 +00.0	11			
12	120 02.0 +02.2	N	21 13.7 +00.0	172 30.0 +02.8	N	22 09.4 +00.0	263 51.9 +02.4	S	08 38.1 +00.0	12			
13	135 04.2 +02.2	N	21 13.7 +00.1	187 32.8 +02.8	N	22 09.4 -00.1	278 54.3 +02.4	S	08 38.1 -00.1	13			
14	150 06.4 +02.2	N	21 13.8 +00.0	202 35.6 +02.8	N	22 09.3 +00.0	293 56.7 +02.4	S	08 38.0 +00.0	14			
15	165 08.6 +02.2	N	21 13.8 +00.1	217 38.4 +02.9	N	22 09.3 +00.0	308 59.1 +02.4	S	08 38.0 +00.0	15			
16	180 10.8 +02.2	N	21 13.9 +00.0	232 41.3 +02.8	N	22 09.3 +00.0	324 01.5 +02.4	S	08 38.0 +00.0	16			
17	195 13.0 +02.2	N	21 13.9 +00.1	247 44.1 +02.8	N	22 09.3 -00.1	339 03.9 +02.4	S	08 38.0 -00.1	17			
18	210 15.2 +02.2	N	21 14.0 +00.0	262 46.9 +02.8	N	22 09.2 +00.0	354 06.3 +02.4	S	08 37.9 +00.0	18			
19	225 17.4 +02.2	N	21 14.0 +00.1	277 49.7 +02.9	N	22 09.2 +00.0	9 08.7 +02.4	S	08 37.9 +00.0	19			
20	240 19.6 +02.2	N	21 14.1 +00.0	292 52.6 +02.8	N	22 09.2 +00.0	24 11.1 +02.4	S	08 37.9 -00.1	20			
21	255 21.8 +02.2	N	21 14.1 +00.1	307 55.4 +02.8	N	22 09.2 -00.1	39 13.5 +02.4	S	08 37.8 +00.0	21			
22	270 24.0 +02.2	N	21 14.2 +00.0	322 58.2 +02.8	N	22 09.1 +00.0	54 15.9 +02.4	S	08 37.8 +00.0	22			
23	285 26.2 +02.2	N	21 14.2 +00.1	338 01.0 +02.8	N	22 09.1 +00.0	69 18.3 +02.5	S	08 37.8 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 231° 231° 231° 231° 231° 231°			SHA 284° 284° 284° 284° 284° 284°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 04:01			Greenwich Culmination Time: 00:32			Greenwich Culmination Time: 18:23						

UT	Sun				Venus				Moon				UT										
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec											
00	182	50.5 -00.2	S 21 41.1	+00.4	135	38.6 -00.7	S 24 07.6	-00.5	198	50.2 -29.0	S 22 27.8	+09.4	00										
01	197	50.3 -00.2	S 21 41.5	+00.4	150	37.9 -00.7	S 24 07.1	-00.5	213	21.2 -29.1	S 22 37.2	+09.3	01										
02	212	50.1 -00.2	S 21 41.9	+00.4	165	37.2 -00.7	S 24 06.6	-00.4	227	52.1 -29.2	S 22 46.5	+09.2	02										
03	227	49.9 -00.3	S 21 42.3	+00.4	180	36.5 -00.7	S 24 06.2	-00.5	242	22.9 -29.3	S 22 55.7	+09.1	03										
04	242	49.6 -00.2	S 21 42.7	+00.4	195	35.8 -00.7	S 24 05.7	-00.5	256	53.6 -29.4	S 23 04.8	+09.0	04										
05	257	49.4 -00.2	S 21 43.1	+00.3	210	35.1 -00.7	S 24 05.2	-00.4	271	24.2 -29.5	S 23 13.8	+08.8	05										
06	272	49.2 -00.3	S 21 43.4	+00.4	225	34.4 -00.6	S 24 04.8	-00.5	285	54.7 -29.5	S 23 22.6	+08.8	06										
07	287	48.9 -00.2	S 21 43.8	+00.4	240	33.8 -00.7	S 24 04.3	-00.5	300	25.2 -29.7	S 23 31.4	+08.7	07										
08	302	48.7 -00.2	S 21 44.2	+00.4	255	33.1 -00.7	S 24 03.8	-00.5	314	55.5 -29.7	S 23 40.1	+08.6	08										
09	317	48.5 -00.3	S 21 44.6	+00.4	270	32.4 -00.7	S 24 03.3	-00.4	329	25.8 -29.9	S 23 48.7	+08.4	09										
10	332	48.2 -00.2	S 21 45.0	+00.4	285	31.7 -00.7	S 24 02.9	-00.5	343	55.9 -29.9	S 23 57.1	+08.4	10										
11	347	48.0 -00.2	S 21 45.4	+00.4	300	31.0 -00.7	S 24 02.4	-00.5	358	26.0 -30.0	S 24 05.5	+08.2	11										
12	2	47.8 -00.2	S 21 45.8	+00.4	315	30.3 -00.7	S 24 01.9	-00.5	12	56.0 -30.1	S 24 13.7	+08.2	12										
13	17	47.6 -00.3	S 21 46.2	+00.4	330	29.6 -00.7	S 24 01.4	-00.5	27	25.9 -30.2	S 24 21.9	+08.0	13										
14	32	47.3 -00.2	S 21 46.6	+00.4	345	28.9 -00.7	S 24 00.9	-00.4	41	55.7 -30.3	S 24 29.9	+07.9	14										
15	47	47.1 -00.2	S 21 47.0	+00.4	0	28.2 -00.7	S 24 00.5	-00.5	56	25.4 -30.4	S 24 37.8	+07.8	15										
16	62	46.9 -00.3	S 21 47.4	+00.4	15	27.5 -00.6	S 23 60.0	-00.5	70	55.0 -30.4	S 24 45.6	+07.7	16										
17	77	46.6 -00.2	S 21 47.8	+00.4	30	26.9 -00.7	S 23 59.5	-00.5	85	24.6 -30.6	S 24 53.3	+07.5	17										
18	92	46.4 -00.2	S 21 48.2	+00.4	45	26.2 -00.7	S 23 59.0	-00.5	99	54.0 -30.6	S 25 00.8	+07.5	18										
19	107	46.2 -00.3	S 21 48.6	+00.3	60	25.5 -00.7	S 23 58.5	-00.5	114	23.4 -30.7	S 25 08.3	+07.3	19										
20	122	45.9 -00.2	S 21 48.9	+00.4	75	24.8 -00.7	S 23 58.0	-00.5	128	52.7 -30.9	S 25 15.6	+07.2	20										
21	137	45.7 -00.2	S 21 49.3	+00.4	90	24.1 -00.7	S 23 57.5	-00.5	143	21.8 -30.9	S 25 22.8	+07.1	21										
22	152	45.5 -00.3	S 21 49.7	+00.4	105	23.4 -00.7	S 23 57.0	-00.4	157	50.9 -31.0	S 25 29.9	+07.0	22										
23	167	45.2 -00.2	S 21 50.1	+00.4	120	22.7 -00.6	S 23 56.6	-00.5	172	19.9 -31.0	S 25 36.9	+06.8	23										
	<b>UT</b>	<b>02</b>	<b>06</b>	<b>10</b>	<b>14</b>	<b>18</b>	<b>22</b>		<b>UT</b>	<b>02</b>	<b>06</b>	<b>10</b>	<b>14</b>	<b>18</b>	<b>22</b>		<b>UT</b>	<b>02</b>	<b>06</b>	<b>10</b>	<b>14</b>	<b>18</b>	<b>22</b>
	SD	16'2	16'2	16'2	16'2	16'2	16'2		SD	00'1	00'1	00'1	00'1	00'1	00'1		SD	14'9	15'0	15'0	15'0	15'0	15'0
	HP	00'1	00'1	00'1	00'1	00'1	00'1		HP	00'1	00'1	00'1	00'1	00'2	00'2		HP	54'8	54'9	55'0	55'0	55'1	55'2
	SHA	113°	113°	113°	113°	113°	112°		SHA	066°	066°	066°	066°	065°	065°		SHA	128°	126°	124°	122°	120°	118°
	Greenwich Culmination Time: 11:48								Greenwich Culmination Time: 14:58								Greenwich Culmination Time: 11:06						

  

UT	Mars				Jupiter				Saturn				UT										
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec											
00	300	28.4 +02.2	N 21 14.3	+00.0	353	03.8 +02.9	N 22 09.1	-00.1	84	20.8 +02.4	S 08 37.7	+00.0	00										
01	315	30.6 +02.2	N 21 14.3	+00.1	8	06.7 +02.8	N 22 09.0	+00.0	99	23.2 +02.4	S 08 37.7	+00.0	01										
02	330	32.8 +02.2	N 21 14.4	+00.0	23	09.5 +02.8	N 22 09.0	+00.0	114	25.6 +02.4	S 08 37.7	-00.1	02										
03	345	35.0 +02.2	N 21 14.4	+00.1	38	12.3 +02.8	N 22 09.0	+00.0	129	28.0 +02.4	S 08 37.6	+00.0	03										
04	0	37.2 +02.2	N 21 14.5	+00.0	53	15.1 +02.9	N 22 09.0	-00.1	144	30.4 +02.4	S 08 37.6	+00.0	04										
05	15	39.4 +02.2	N 21 14.5	+00.1	68	18.0 +02.8	N 22 08.9	+00.0	159	32.8 +02.4	S 08 37.6	+00.0	05										
06	30	41.6 +02.2	N 21 14.6	+00.0	83	20.8 +02.8	N 22 08.9	+00.0	174	35.2 +02.4	S 08 37.6	-00.1	06										
07	45	43.8 +02.2	N 21 14.6	+00.1	98	23.6 +02.8	N 22 08.9	+00.0	189	37.6 +02.4	S 08 37.5	+00.0	07										
08	60	46.0 +02.2	N 21 14.7	+00.0	113	26.4 +02.9	N 22 08.9	-00.1	204	40.0 +02.4	S 08 37.5	+00.0	08										
09	75	48.2 +02.2	N 21 14.7	+00.1	128	29.3 +02.8	N 22 08.8	+00.0	219	42.4 +02.4	S 08 37.5	-00.1	09										
10	90	50.4 +02.2	N 21 14.8	+00.0	143	32.1 +02.8	N 22 08.8	+00.0	234	44.8 +02.4	S 08 37.4	+00.0	10										
11	105	52.6 +02.3	N 21 14.8	+00.1	158	34.9 +02.8	N 22 08.8	+00.0	249	47.2 +02.4	S 08 37.4	+00.0	11										
12	120	54.9 +02.2	N 21 14.9	+00.0	173	37.7 +02.9	N 22 08.8	-00.1	264	49.6 +02.4	S 08 37.4	-00.1	12										
13	135	57.1 +02.2	N 21 14.9	+00.1	188	40.6 +02.8	N 22 08.7	+00.0	279	52.0 +02.4	S 08 37.3	+00.0	13										
14	150	59.3 +02.2	N 21 15.0	+00.1	203	43.4 +02.8	N 22 08.7	+00.0	294	54.4 +02.5	S 08 37.3	+00.0	14										
15	166	01.5 +02.2	N 21 15.1	+00.0	218	46.2 +02.8	N 22 08.7	-00.1	309	56.9 +02.4	S 08 37.3	-00.1	15										
16	181	03.7 +02.3	N 21 15.1	+00.1	233	49.0 +02.9	N 22 08.6	+00.0	324	59.3 +02.4	S 08 37.2	+00.0	16										
17	196	06.0 +02.2	N 21 15.2	+00.0	248	51.9 +02.8	N 22 08.6	+00.0	340	01.7 +02.4	S 08 37.2	+00.0	17										
18	211	08.2 +02.2	N 21 15.2	+00.1	263	54.7 +02.8	N 22 08.6	+00.0	355	04.1 +02.4	S 08 37.2	-00.1	18										
19	226	10.4 +02.2	N 21 15.3	+00.0	278	57.5 +02.8	N 22 08.6	-00.1	10	06.5 +02.4	S 08 37.1	+00.0	19										
20	241	12.6 +02.3	N 21 15.3	+00.1	294	00.3 +02.9	N 22 08.5	+00.0	25	08.9 +02.4	S 08 37.1	+00.0	20										
21	256	14.9 +02.2	N 21 15.4	+00.0	309	03.2 +02.8	N 22 08.5	+00.0	40	11.3 +02.4	S 08 37.1	-00.1	21										
22	271	17.1 +02.2	N 21 15.4	+00.1	324	06.0 +02.8	N 22 08.5	+00.0	55	13.7 +02.4	S 08 37.0	+00.0	22										
23	286	19.3 +02.3	N 21 15.5	+00.1	339	08.8 +02.8	N 22 08.5	-00.1	70	16.1 +02.4	S 08 37.0	+00.0	23										
	<b>UT</b>	<b>02</b>	<b>06</b>	<b>10</b>	<b>14</b>	<b>18</b>	<b>22</b>		<b>UT</b>	<b>02</b>	<b>06</b>	<b>10</b>	<b>14</b>	<b>18</b>	<b>22</b>		<b>UT</b>	<b>02</b>	<b>06</b>	<b>10</b>	<b>14</b>	<b>18</b>	<b>22</b>
	SD	00'1	00'1	00'1	00'1	00'1	00'1		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	00'2	00'2	00'2	00'2	00'2	00'2		HP	00'0	00'0	00'0	00'0	00'0	00'0		HP	00'0	00'0	00'0	00'0	00'0	00'0
	SHA	231°	231°	231°	231°	231°	231°		SHA	284°	284°	284°	284°	284°	284°		SHA	015°	015°	015°	015°	015°	015°
	Greenwich Culmination Time: 03:57								Greenwich Culmination Time: 00:27								Greenwich Culmination Time: 18:19						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182	45.0 -00.3	S 21 50.5 +00.4		135	22.1 -00.7	S 23 56.1 -00.5		186	48.9 -31.2	S 25 43.7 +06.7		00
01	197	44.7 -00.2	S 21 50.9 +00.4		150	21.4 -00.7	S 23 55.6 -00.5		201	17.7 -31.2	S 25 50.4 +06.6		01
02	212	44.5 -00.2	S 21 51.3 +00.3		165	20.7 -00.7	S 23 55.1 -00.5		215	46.5 -31.4	S 25 57.0 +06.5		02
03	227	44.3 -00.3	S 21 51.6 +00.4		180	20.0 -00.7	S 23 54.6 -00.5		230	15.1 -31.4	S 26 03.5 +06.3		03
04	242	44.0 -00.2	S 21 52.0 +00.4		195	19.3 -00.6	S 23 54.1 -00.5		244	43.7 -31.5	S 26 09.8 +06.2		04
05	257	43.8 -00.2	S 21 52.4 +00.4		210	18.7 -00.7	S 23 53.6 -00.5		259	12.2 -31.6	S 26 16.0 +06.1		05
06	272	43.6 -00.3	S 21 52.8 +00.4		225	18.0 -00.7	S 23 53.1 -00.5		273	40.6 -31.6	S 26 22.1 +05.9		06
07	287	43.3 -00.2	S 21 53.2 +00.3		240	17.3 -00.7	S 23 52.6 -00.5		288	09.0 -31.8	S 26 28.0 +05.9		07
08	302	43.1 -00.2	S 21 53.5 +00.4		255	16.6 -00.7	S 23 52.1 -00.5		302	37.2 -31.8	S 26 33.9 +05.6		08
09	317	42.9 -00.3	S 21 53.9 +00.4		270	15.9 -00.6	S 23 51.6 -00.5		317	05.4 -31.9	S 26 39.5 +05.6		09
10	332	42.6 -00.2	S 21 54.3 +00.4		285	15.3 -00.7	S 23 51.1 -00.5		331	33.5 -32.0	S 26 45.1 +05.4		10
11	347	42.4 -00.3	S 21 54.7 +00.3		300	14.6 -00.7	S 23 50.6 -00.5		346	01.5 -32.0	S 26 50.5 +05.3		11
12	2	42.1 -00.2	S 21 55.0 +00.4		315	13.9 -00.7	S 23 50.1 -00.5		0	29.5 -32.1	S 26 55.8 +05.1		12
13	17	41.9 -00.2	S 21 55.4 +00.4		330	13.2 -00.6	S 23 49.6 -00.5		14	57.4 -32.2	S 27 00.9 +05.0		13
14	32	41.7 -00.3	S 21 55.8 +00.4		345	12.6 -00.7	S 23 49.1 -00.6		29	25.2 -32.3	S 27 05.9 +04.9		14
15	47	41.4 -00.2	S 21 56.2 +00.3		0	11.9 -00.7	S 23 48.5 -00.5		43	52.9 -32.4	S 27 10.8 +04.7		15
16	62	41.2 -00.3	S 21 56.5 +00.4		15	11.2 -00.6	S 23 48.0 -00.5		58	20.5 -32.4	S 27 15.5 +04.6		16
17	77	40.9 -00.2	S 21 56.9 +00.4		30	10.6 -00.7	S 23 47.5 -00.5		72	48.1 -32.5	S 27 20.1 +04.4		17
18	92	40.7 -00.2	S 21 57.3 +00.4		45	09.9 -00.7	S 23 47.0 -00.5		87	15.6 -32.5	S 27 24.5 +04.3		18
19	107	40.5 -00.3	S 21 57.7 +00.3		60	09.2 -00.7	S 23 46.5 -00.5		101	43.1 -32.7	S 27 28.8 +04.2		19
20	122	40.2 -00.2	S 21 58.0 +00.4		75	08.5 -00.6	S 23 46.0 -00.5		116	10.4 -32.7	S 27 33.0 +04.0		20
21	137	40.0 -00.3	S 21 58.4 +00.4		90	07.9 -00.7	S 23 45.5 -00.6		130	37.7 -32.7	S 27 37.0 +03.8		21
22	152	39.7 -00.2	S 21 58.8 +00.3		105	07.2 -00.7	S 23 44.9 -00.5		145	05.0 -32.8	S 27 40.8 +03.7		22
23	167	39.5 -00.2	S 21 59.1 +00.4		120	06.5 -00.6	S 23 44.4 -00.5		159	32.2 -32.9	S 27 44.5 +03.6		23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 16'2 16'2 16'2 16'2 16'2 16'2				SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 15'0 15'1 15'1 15'1 15'1 15'1				
	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 55'2 55'3 55'4 55'4 55'5 55'6				
	SHA 112° 112° 112° 112° 112° 111°				SHA 065° 065° 064° 064° 064° 064°				SHA 115° 113° 111° 109° 106° 104°				
	Greenwich Culmination Time: 11:49				Greenwich Culmination Time: 14:59				Greenwich Culmination Time: 11:57				

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	301	21.6 +02.2	N 21 15.6 +00.0		354	11.6 +02.9	N 22 08.4 +00.0		85	18.5 +02.4	S 08 37.0 -00.1		00
01	316	23.8 +02.2	N 21 15.6 +00.1		9	14.5 +02.8	N 22 08.4 +00.0		100	20.9 +02.4	S 08 36.9 +00.0		01
02	331	26.0 +02.3	N 21 15.7 +00.0		24	17.3 +02.8	N 22 08.4 -00.1		115	23.3 +02.4	S 08 36.9 +00.0		02
03	346	28.3 +02.2	N 21 15.7 +00.1		39	20.1 +02.8	N 22 08.3 +00.0		130	25.7 +02.4	S 08 36.9 +00.0		03
04	1	30.5 +02.2	N 21 15.8 +00.1		54	22.9 +02.9	N 22 08.3 +00.0		145	28.1 +02.4	S 08 36.9 -00.1		04
05	16	32.7 +02.3	N 21 15.9 +00.0		69	25.8 +02.8	N 22 08.3 +00.0		160	30.5 +02.4	S 08 36.8 +00.0		05
06	31	35.0 +02.2	N 21 15.9 +00.1		84	28.6 +02.8	N 22 08.3 -00.1		175	32.9 +02.4	S 08 36.8 +00.0		06
07	46	37.2 +02.3	N 21 16.0 +00.0		99	31.4 +02.8	N 22 08.2 +00.0		190	35.3 +02.4	S 08 36.8 -00.1		07
08	61	39.5 +02.2	N 21 16.0 +00.1		114	34.2 +02.9	N 22 08.2 +00.0		205	37.7 +02.4	S 08 36.7 +00.0		08
09	76	41.7 +02.3	N 21 16.1 +00.1		129	37.1 +02.8	N 22 08.2 +00.0		220	40.1 +02.4	S 08 36.7 +00.0		09
10	91	44.0 +02.2	N 21 16.2 +00.0		144	39.9 +02.8	N 22 08.2 -00.1		235	42.5 +02.4	S 08 36.7 -00.1		10
11	106	46.2 +02.2	N 21 16.2 +00.1		159	42.7 +02.8	N 22 08.1 +00.0		250	44.9 +02.4	S 08 36.6 +00.0		11
12	121	48.4 +02.3	N 21 16.3 +00.1		174	45.5 +02.9	N 22 08.1 +00.0		265	47.3 +02.4	S 08 36.6 +00.0		12
13	136	50.7 +02.2	N 21 16.4 +00.0		189	48.4 +02.8	N 22 08.1 -00.1		280	49.7 +02.4	S 08 36.6 -00.1		13
14	151	52.9 +02.3	N 21 16.4 +00.1		204	51.2 +02.8	N 22 08.0 +00.0		295	52.1 +02.4	S 08 36.5 +00.0		14
15	166	55.2 +02.3	N 21 16.5 +00.0		219	54.0 +02.8	N 22 08.0 +00.0		310	54.5 +02.4	S 08 36.5 +00.0		15
16	181	57.5 +02.2	N 21 16.5 +00.1		234	56.8 +02.9	N 22 08.0 +00.0		325	56.9 +02.4	S 08 36.5 -00.1		16
17	196	59.7 +02.3	N 21 16.6 +00.1		249	59.7 +02.8	N 22 08.0 -00.1		340	59.3 +02.4	S 08 36.4 +00.0		17
18	212	02.0 +02.2	N 21 16.7 +00.0		265	02.5 +02.8	N 22 07.9 +00.0		356	01.7 +02.4	S 08 36.4 +00.0		18
19	227	04.2 +02.3	N 21 16.7 +00.1		280	05.3 +02.8	N 22 07.9 +00.0		11	04.1 +02.4	S 08 36.4 -00.1		19
20	242	06.5 +02.2	N 21 16.8 +00.1		295	08.1 +02.9	N 22 07.9 -00.1		26	06.5 +02.4	S 08 36.3 +00.0		20
21	257	08.7 +02.3	N 21 16.9 +00.0		310	11.0 +02.8	N 22 07.8 +00.0		41	08.9 +02.4	S 08 36.3 -00.1		21
22	272	11.0 +02.3	N 21 16.9 +00.1		325	13.8 +02.8	N 22 07.8 +00.0		56	11.3 +02.4	S 08 36.2 +00.0		22
23	287	13.3 +02.2	N 21 17.0 +00.1		340	16.6 +02.8	N 22 07.8 +00.0		71	13.7 +02.4	S 08 36.2 +00.0		23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				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 00'2 00'2 00'2 00'2 00'2 00'2				HP 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 231° 231° 231° 231° 231° 231°				SHA 284° 284° 284° 284° 284° 284°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 03:53				Greenwich Culmination Time: 00:23				Greenwich Culmination Time: 18:15				

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 39.3 -00.3	S	21 59.5 +00.4	135 05.9 -00.7	S	23 43.9 -00.5	173 59.3 -33.0	S	27 48.1 +03.4	00			
01	197 39.0 -00.2	S	21 59.9 +00.3	150 05.2 -00.7	S	23 43.4 -00.5	188 26.3 -33.0	S	27 51.5 +03.3	01			
02	212 38.8 -00.3	S	22 00.2 +00.4	165 04.5 -00.6	S	23 42.9 -00.6	202 53.3 -33.0	S	27 54.8 +03.1	02			
03	227 38.5 -00.2	S	22 00.6 +00.4	180 03.9 -00.7	S	23 42.3 -00.5	217 20.3 -33.2	S	27 57.9 +03.0	03			
04	242 38.3 -00.3	S	22 01.0 +00.3	195 03.2 -00.7	S	23 41.8 -00.5	231 47.1 -33.1	S	28 00.9 +02.8	04			
05	257 38.0 -00.2	S	22 01.3 +00.4	210 02.5 -00.6	S	23 41.3 -00.5	246 14.0 -33.3	S	28 03.7 +02.7	05			
06	272 37.8 -00.2	S	22 01.7 +00.3	225 01.9 -00.7	S	23 40.8 -00.6	260 40.7 -33.3	S	28 06.4 +02.5	06			
07	287 37.6 -00.3	S	22 02.0 +00.4	240 01.2 -00.7	S	23 40.2 -00.5	275 07.4 -33.3	S	28 08.9 +02.3	07			
08	302 37.3 -00.2	S	22 02.4 +00.4	255 00.5 -00.6	S	23 39.7 -00.5	289 34.1 -33.4	S	28 11.2 +02.2	08			
09	317 37.1 -00.3	S	22 02.8 +00.3	269 59.9 -00.7	S	23 39.2 -00.5	304 00.7 -33.4	S	28 13.4 +02.1	09			
10	332 36.8 -00.2	S	22 03.1 +00.4	284 59.2 -00.6	S	23 38.7 -00.6	318 27.3 -33.5	S	28 15.5 +01.9	10			
11	347 36.6 -00.3	S	22 03.5 +00.3	299 58.6 -00.7	S	23 38.1 -00.5	332 53.8 -33.5	S	28 17.4 +01.7	11			
12	2 36.3 -00.2	S	22 03.8 +00.4	314 57.9 -00.7	S	23 37.6 -00.5	347 20.3 -33.5	S	28 19.1 +01.6	12			
13	17 36.1 -00.2	S	22 04.2 +00.4	329 57.2 -00.6	S	23 37.1 -00.6	1 46.8 -33.6	S	28 20.7 +01.4	13			
14	32 35.9 -00.3	S	22 04.6 +00.3	344 56.6 -00.7	S	23 36.5 -00.5	16 13.2 -33.7	S	28 22.1 +01.3	14			
15	47 35.6 -00.2	S	22 04.9 +00.4	359 55.9 -00.6	S	23 36.0 -00.6	30 39.5 -33.7	S	28 23.4 +01.1	15			
16	62 35.4 -00.3	S	22 05.3 +00.3	14 55.3 -00.7	S	23 35.4 -00.5	45 05.8 -33.7	S	28 24.5 +00.9	16			
17	77 35.1 -00.2	S	22 05.6 +00.4	29 54.6 -00.6	S	23 34.9 -00.5	59 32.1 -33.7	S	28 25.4 +00.8	17			
18	92 34.9 -00.3	S	22 06.0 +00.3	44 54.0 -00.7	S	23 34.4 -00.6	73 58.4 -33.8	S	28 26.2 +00.6	18			
19	107 34.6 -00.2	S	22 06.3 +00.4	59 53.3 -00.7	S	23 33.8 -00.5	88 24.6 -33.8	S	28 26.8 +00.5	19			
20	122 34.4 -00.3	S	22 06.7 +00.3	74 52.6 -00.6	S	23 33.3 -00.6	102 50.8 -33.8	S	28 27.3 +00.3	20			
21	137 34.1 -00.2	S	22 07.0 +00.4	89 52.0 -00.7	S	23 32.7 -00.5	117 17.0 -33.9	S	28 27.6 +00.1	21			
22	152 33.9 -00.3	S	22 07.4 +00.3	104 51.3 -00.6	S	23 32.2 -00.5	131 43.1 -33.9	S	28 27.7 +00.0	22			
23	167 33.6 -00.2	S	22 07.7 +00.4	119 50.7 -00.7	S	23 31.7 -00.6	146 09.2 -33.9	S	28 27.7 -00.2	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22				UT 02 06 10 14 18 22					
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 15'2 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 55'7 55'7 55'8 55'9 56'0 56'1					
	SHA 111° 111° 111° 111° 111° 110°			SHA 064° 063° 063° 063° 063° 063°				SHA 101° 099° 097° 094° 092° 089°					
	Greenwich Culmination Time: 11:49			Greenwich Culmination Time: 15:00				Greenwich Culmination Time: 12:52					

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	302 15.5 +02.3	N	21 17.1 +00.0	355 19.4 +02.9	N	22 07.8 -00.1	86 16.1 +02.4	S	08 36.2 -00.1	00			
01	317 17.8 +02.3	N	21 17.1 +00.1	10 22.3 +02.8	N	22 07.7 +00.0	101 18.5 +02.4	S	08 36.1 +00.0	01			
02	332 20.1 +02.2	N	21 17.2 +00.1	25 25.1 +02.8	N	22 07.7 +00.0	116 20.9 +02.4	S	08 36.1 +00.0	02			
03	347 22.3 +02.3	N	21 17.3 +00.0	40 27.9 +02.9	N	22 07.7 +00.0	131 23.3 +02.4	S	08 36.1 -00.1	03			
04	2 24.6 +02.3	N	21 17.3 +00.1	55 30.8 +02.8	N	22 07.7 -00.1	146 25.7 +02.4	S	08 36.0 +00.0	04			
05	17 26.9 +02.3	N	21 17.4 +00.1	70 33.6 +02.8	N	22 07.6 +00.0	161 28.1 +02.4	S	08 36.0 +00.0	05			
06	32 29.2 +02.2	N	21 17.5 +00.1	85 36.4 +02.8	N	22 07.6 +00.0	176 30.5 +02.4	S	08 36.0 -00.1	06			
07	47 31.4 +02.3	N	21 17.6 +00.0	100 39.2 +02.9	N	22 07.6 -00.1	191 32.9 +02.4	S	08 35.9 +00.0	07			
08	62 33.7 +02.3	N	21 17.6 +00.1	115 42.1 +02.8	N	22 07.5 +00.0	206 35.3 +02.4	S	08 35.9 +00.0	08			
09	77 36.0 +02.3	N	21 17.7 +00.1	130 44.9 +02.8	N	22 07.5 +00.0	221 37.7 +02.4	S	08 35.9 -00.1	09			
10	92 38.3 +02.2	N	21 17.8 +00.0	145 47.7 +02.8	N	22 07.5 +00.0	236 40.1 +02.4	S	08 35.8 +00.0	10			
11	107 40.5 +02.3	N	21 17.8 +00.1	160 50.5 +02.9	N	22 07.5 -00.1	251 42.5 +02.4	S	08 35.8 +00.0	11			
12	122 42.8 +02.3	N	21 17.9 +00.1	175 53.4 +02.8	N	22 07.4 +00.0	266 44.9 +02.4	S	08 35.8 -00.1	12			
13	137 45.1 +02.3	N	21 18.0 +00.0	190 56.2 +02.8	N	22 07.4 +00.0	281 47.3 +02.4	S	08 35.7 +00.0	13			
14	152 47.4 +02.3	N	21 18.0 +00.1	205 59.0 +02.9	N	22 07.4 +00.0	296 49.7 +02.4	S	08 35.7 +00.0	14			
15	167 49.7 +02.3	N	21 18.1 +00.1	221 01.9 +02.8	N	22 07.4 -00.1	311 52.1 +02.4	S	08 35.7 -00.1	15			
16	182 52.0 +02.2	N	21 18.2 +00.1	236 04.7 +02.8	N	22 07.3 +00.0	326 54.5 +02.4	S	08 35.6 +00.0	16			
17	197 54.2 +02.3	N	21 18.3 +00.0	251 07.5 +02.8	N	22 07.3 +00.0	341 56.9 +02.4	S	08 35.6 +00.0	17			
18	212 56.5 +02.3	N	21 18.3 +00.1	266 10.3 +02.9	N	22 07.3 -00.1	356 59.3 +02.4	S	08 35.6 -00.1	18			
19	227 58.8 +02.3	N	21 18.4 +00.1	281 13.2 +02.8	N	22 07.2 +00.0	12 01.7 +02.4	S	08 35.5 +00.0	19			
20	243 01.1 +02.3	N	21 18.5 +00.1	296 16.0 +02.8	N	22 07.2 +00.0	27 04.1 +02.4	S	08 35.5 -00.1	20			
21	258 03.4 +02.3	N	21 18.6 +00.0	311 18.8 +02.8	N	22 07.2 +00.0	42 06.5 +02.4	S	08 35.4 +00.0	21			
22	273 05.7 +02.3	N	21 18.6 +00.1	326 21.6 +02.9	N	22 07.2 -00.1	57 08.9 +02.4	S	08 35.4 +00.0	22			
23	288 08.0 +02.3	N	21 18.7 +00.1	341 24.5 +02.8	N	22 07.1 +00.0	72 11.3 +02.4	S	08 35.4 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22				UT 02 06 10 14 18 22					
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4				SD 00'1 00'1 00'1 00'1 00'1 00'1					
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0					
	SHA 231° 231° 231° 231° 231° 231°			SHA 284° 284° 284° 284° 284° 284°				SHA 015° 015° 015° 015° 015° 015°					
	Greenwich Culmination Time: 03:50			Greenwich Culmination Time: 00:18				Greenwich Culmination Time: 18:12					

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Table with columns for UT, Sun, Venus, Moon, Mars, Jupiter, Saturn, and UT. Each planet section includes GHA, ddGHA, Dec, dDec, and a summary row for SD, HP, and SHA.



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 27.4 -00.3	S	22 16.2 +00.4	134 34.6 -00.7	S	23 17.7 -00.6	146 59.7 -33.8	S	27 34.5 -04.3	00										
01	197 27.1 -00.2	S	22 16.6 +00.3	149 33.9 -00.6	S	23 17.1 -00.6	161 25.9 -33.9	S	27 30.2 -04.4	01										
02	212 26.9 -00.3	S	22 16.9 +00.3	164 33.3 -00.6	S	23 16.5 -00.5	175 52.0 -33.8	S	27 25.8 -04.5	02										
03	227 26.6 -00.3	S	22 17.2 +00.4	179 32.7 -00.7	S	23 16.0 -00.6	190 18.2 -33.8	S	27 21.3 -04.8	03										
04	242 26.3 -00.2	S	22 17.6 +00.3	194 32.0 -00.6	S	23 15.4 -00.6	204 44.4 -33.7	S	27 16.5 -04.8	04										
05	257 26.1 -00.3	S	22 17.9 +00.3	209 31.4 -00.6	S	23 14.8 -00.6	219 10.7 -33.8	S	27 11.7 -05.1	05										
06	272 25.8 -00.2	S	22 18.2 +00.3	224 30.8 -00.7	S	23 14.2 -00.5	233 36.9 -33.7	S	27 06.6 -05.2	06										
07	287 25.6 -00.3	S	22 18.5 +00.4	239 30.1 -00.6	S	23 13.7 -00.6	248 03.2 -33.6	S	27 01.4 -05.3	07										
08	302 25.3 -00.2	S	22 18.9 +00.3	254 29.5 -00.6	S	23 13.1 -00.6	262 29.6 -33.6	S	26 56.1 -05.5	08										
09	317 25.1 -00.3	S	22 19.2 +00.3	269 28.9 -00.7	S	23 12.5 -00.6	276 56.0 -33.6	S	26 50.6 -05.7	09										
10	332 24.8 -00.2	S	22 19.5 +00.3	284 28.2 -00.6	S	23 11.9 -00.6	291 22.4 -33.6	S	26 44.9 -05.8	10										
11	347 24.6 -00.3	S	22 19.8 +00.4	299 27.6 -00.6	S	23 11.3 -00.6	305 48.8 -33.5	S	26 39.1 -06.0	11										
12	2 24.3 -00.3	S	22 20.2 +00.3	314 27.0 -00.7	S	23 10.7 -00.5	320 15.3 -33.5	S	26 33.1 -06.1	12										
13	17 24.0 -00.2	S	22 20.5 +00.3	329 26.3 -00.6	S	23 10.2 -00.6	334 41.8 -33.4	S	26 27.0 -06.3	13										
14	32 23.8 -00.3	S	22 20.8 +00.3	344 25.7 -00.6	S	23 09.6 -00.6	349 08.4 -33.4	S	26 20.7 -06.4	14										
15	47 23.5 -00.2	S	22 21.1 +00.4	359 25.1 -00.6	S	23 09.0 -00.6	3 35.0 -33.3	S	26 14.3 -06.6	15										
16	62 23.3 -00.3	S	22 21.5 +00.3	14 24.5 -00.7	S	23 08.4 -00.6	18 01.7 -33.3	S	26 07.7 -06.8	16										
17	77 23.0 -00.3	S	22 21.8 +00.3	29 23.8 -00.6	S	23 07.8 -00.6	32 28.4 -33.3	S	26 00.9 -06.9	17										
18	92 22.7 -00.2	S	22 22.1 +00.3	44 23.2 -00.6	S	23 07.2 -00.6	46 55.1 -33.2	S	25 54.0 -07.0	18										
19	107 22.5 -00.3	S	22 22.4 +00.3	59 22.6 -00.6	S	23 06.6 -00.6	61 21.9 -33.1	S	25 47.0 -07.2	19										
20	122 22.2 -00.2	S	22 22.7 +00.3	74 22.0 -00.6	S	23 06.0 -00.6	75 48.8 -33.1	S	25 39.8 -07.4	20										
21	137 22.0 -00.3	S	22 23.0 +00.4	89 21.4 -00.7	S	23 05.4 -00.6	90 15.7 -33.1	S	25 32.4 -07.4	21										
22	152 21.7 -00.2	S	22 23.4 +00.3	104 20.7 -00.6	S	23 04.8 -00.6	104 42.6 -33.0	S	25 25.0 -07.7	22										
23	167 21.5 -00.3	S	22 23.7 +00.3	119 20.1 -00.6	S	23 04.2 -00.5	119 09.6 -33.0	S	25 17.3 -07.8	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16'2	16'2	16'2	16'2	16'2	16'2	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	15'4	15'4	15'5	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	56'6	56'7	56'8	56'9	56'9	57'0
SHA	109°	109°	109°	109°	108°	108°	SHA	061°	061°	061°	061°	060°	060°	SHA	072°	070°	068°	065°	063°	061°
Greenwich Culmination Time: 11:50							Greenwich Culmination Time: 15:02							Greenwich Culmination Time: 14:45						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	304 05.9 +02.3	N	21 20.7 +00.1	357 35.2 +02.8	N	22 06.4 +00.0	88 11.1 +02.4	S	08 34.5 -00.1	00										
01	319 08.2 +02.3	N	21 20.8 +00.1	12 38.0 +02.9	N	22 06.4 +00.0	103 13.5 +02.4	S	08 34.4 +00.0	01										
02	334 10.5 +02.4	N	21 20.9 +00.1	27 40.9 +02.8	N	22 06.4 -00.1	118 15.9 +02.4	S	08 34.4 -00.1	02										
03	349 12.9 +02.3	N	21 21.0 +00.1	42 43.7 +02.8	N	22 06.3 +00.0	133 18.3 +02.4	S	08 34.3 +00.0	03										
04	4 15.2 +02.3	N	21 21.1 +00.0	57 46.5 +02.8	N	22 06.3 +00.0	148 20.7 +02.4	S	08 34.3 +00.0	04										
05	19 17.5 +02.4	N	21 21.1 +00.1	72 49.3 +02.9	N	22 06.3 +00.0	163 23.1 +02.4	S	08 34.3 -00.1	05										
06	34 19.9 +02.3	N	21 21.2 +00.1	87 52.2 +02.8	N	22 06.3 -00.1	178 25.5 +02.4	S	08 34.2 +00.0	06										
07	49 22.2 +02.3	N	21 21.3 +00.1	102 55.0 +02.8	N	22 06.2 +00.0	193 27.9 +02.4	S	08 34.2 +00.0	07										
08	64 24.5 +02.4	N	21 21.4 +00.1	117 57.8 +02.9	N	22 06.2 +00.0	208 30.3 +02.3	S	08 34.2 -00.1	08										
09	79 26.9 +02.3	N	21 21.5 +00.1	133 00.7 +02.8	N	22 06.2 -00.1	223 32.6 +02.4	S	08 34.1 +00.0	09										
10	94 29.2 +02.4	N	21 21.6 +00.1	148 03.5 +02.8	N	22 06.1 +00.0	238 35.0 +02.4	S	08 34.1 -00.1	10										
11	109 31.6 +02.3	N	21 21.7 +00.1	163 06.3 +02.8	N	22 06.1 +00.0	253 37.4 +02.4	S	08 34.0 +00.0	11										
12	124 33.9 +02.4	N	21 21.8 +00.0	178 09.1 +02.9	N	22 06.1 +00.0	268 39.8 +02.4	S	08 34.0 +00.0	12										
13	139 36.3 +02.3	N	21 21.8 +00.1	193 12.0 +02.8	N	22 06.1 -00.1	283 42.2 +02.4	S	08 34.0 -00.1	13										
14	154 38.6 +02.4	N	21 21.9 +00.1	208 14.8 +02.8	N	22 06.0 +00.0	298 44.6 +02.4	S	08 33.9 +00.0	14										
15	169 41.0 +02.3	N	21 22.0 +00.1	223 17.6 +02.9	N	22 06.0 +00.0	313 47.0 +02.4	S	08 33.9 +00.0	15										
16	184 43.3 +02.4	N	21 22.1 +00.1	238 20.5 +02.8	N	22 06.0 -00.1	328 49.4 +02.4	S	08 33.9 -00.1	16										
17	199 45.7 +02.3	N	21 22.2 +00.1	253 23.3 +02.8	N	22 05.9 +00.0	343 51.8 +02.3	S	08 33.8 +00.0	17										
18	214 48.0 +02.4	N	21 22.3 +00.1	268 26.1 +02.9	N	22 05.9 +00.0	358 54.1 +02.4	S	08 33.8 -00.1	18										
19	229 50.4 +02.4	N	21 22.4 +00.1	283 29.0 +02.8	N	22 05.9 +00.0	13 56.5 +02.4	S	08 33.7 +00.0	19										
20	244 52.8 +02.3	N	21 22.5 +00.1	298 31.8 +02.8	N	22 05.9 -00.1	28 58.9 +02.4	S	08 33.7 +00.0	20										
21	259 55.1 +02.4	N	21 22.6 +00.1	313 34.6 +02.8	N	22 05.8 +00.0	44 01.3 +02.4	S	08 33.7 -00.1	21										
22	274 57.5 +02.3	N	21 22.7 +00.1	328 37.4 +02.9	N	22 05.8 +00.0	59 03.7 +02.4	S	08 33.6 +00.0	22										
23	289 59.8 +02.4	N	21 22.8 +00.0	343 40.3 +02.8	N	22 05.8 +00.0	74 06.1 +02.4	S	08 33.6 -00.1	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	00'4	00'4	00'4	00'4	00'4	00'4	SD	00'1	00'1	00'1	00'1	00'1	00'1
HP	00'2	00'2	00'2	00'2	00'2	00'2	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP	00'0	00'0	00'0	00'0	00'0	00'0
SHA	231°	231°	231°	231°	231°	231°	SHA	284°	284°	284°	284°	284°	284°	SHA	015°	015°	015°	015°	015°	015°
Greenwich Culmination Time: 03:43							Greenwich Culmination Time: 00:09							Greenwich Culmination Time: 18:04						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182	21.2 -00.3	S 22 24.0	+00.3	134	19.5 -00.6	S 23 03.7	-00.6	133	36.6 -32.8	S 25 09.5	-07.9	00
01	197	20.9 -00.2	S 22 24.3	+00.3	149	18.9 -00.6	S 23 03.1	-00.6	148	03.8 -32.9	S 25 01.6	-08.1	01
02	212	20.7 -00.3	S 22 24.6	+00.3	164	18.3 -00.7	S 23 02.5	-00.6	162	30.9 -32.8	S 24 53.5	-08.2	02
03	227	20.4 -00.2	S 22 24.9	+00.3	179	17.6 -00.6	S 23 01.9	-00.6	176	58.1 -32.7	S 24 45.3	-08.4	03
04	242	20.2 -00.3	S 22 25.2	+00.3	194	17.0 -00.6	S 23 01.3	-00.7	191	25.4 -32.7	S 24 36.9	-08.5	04
05	257	19.9 -00.3	S 22 25.5	+00.3	209	16.4 -00.6	S 23 00.6	-00.6	205	52.7 -32.6	S 24 28.4	-08.6	05
06	272	19.6 -00.2	S 22 25.8	+00.4	224	15.8 -00.6	S 23 00.0	-00.6	220	20.1 -32.6	S 24 19.8	-08.8	06
07	287	19.4 -00.3	S 22 26.2	+00.3	239	15.2 -00.6	S 22 59.4	-00.6	234	47.5 -32.5	S 24 11.0	-08.9	07
08	302	19.1 -00.3	S 22 26.5	+00.3	254	14.6 -00.7	S 22 58.8	-00.6	249	15.0 -32.4	S 24 02.1	-09.1	08
09	317	18.8 -00.2	S 22 26.8	+00.3	269	13.9 -00.6	S 22 58.2	-00.6	263	42.6 -32.4	S 23 53.0	-09.2	09
10	332	18.6 -00.3	S 22 27.1	+00.3	284	13.3 -00.6	S 22 57.6	-00.6	278	10.2 -32.3	S 23 43.8	-09.3	10
11	347	18.3 -00.2	S 22 27.4	+00.3	299	12.7 -00.6	S 22 57.0	-00.6	292	37.9 -32.3	S 23 34.5	-09.5	11
12	2	18.1 -00.3	S 22 27.7	+00.3	314	12.1 -00.6	S 22 56.4	-00.6	307	05.6 -32.2	S 23 25.0	-09.6	12
13	17	17.8 -00.3	S 22 28.0	+00.3	329	11.5 -00.6	S 22 55.8	-00.6	321	33.4 -32.1	S 23 15.4	-09.7	13
14	32	17.5 -00.2	S 22 28.3	+00.3	344	10.9 -00.6	S 22 55.2	-00.6	336	01.3 -32.1	S 23 05.7	-09.9	14
15	47	17.3 -00.3	S 22 28.6	+00.3	359	10.3 -00.6	S 22 54.6	-00.6	350	29.2 -32.0	S 22 55.8	-10.0	15
16	62	17.0 -00.3	S 22 28.9	+00.3	14	09.7 -00.6	S 22 54.0	-00.7	4	57.2 -31.9	S 22 45.8	-10.1	16
17	77	16.7 -00.2	S 22 29.2	+00.3	29	09.1 -00.7	S 22 53.3	-00.6	19	25.3 -31.9	S 22 35.7	-10.3	17
18	92	16.5 -00.3	S 22 29.5	+00.3	44	08.4 -00.6	S 22 52.7	-00.6	33	53.4 -31.9	S 22 25.4	-10.4	18
19	107	16.2 -00.2	S 22 29.8	+00.3	59	07.8 -00.6	S 22 52.1	-00.6	48	21.5 -31.7	S 22 15.0	-10.5	19
20	122	16.0 -00.3	S 22 30.1	+00.3	74	07.2 -00.6	S 22 51.5	-00.6	62	49.8 -31.7	S 22 04.5	-10.6	20
21	137	15.7 -00.3	S 22 30.4	+00.3	89	06.6 -00.6	S 22 50.9	-00.7	77	18.1 -31.7	S 21 53.9	-10.8	21
22	152	15.4 -00.2	S 22 30.7	+00.3	104	06.0 -00.6	S 22 50.2	-00.6	91	46.4 -31.5	S 21 43.1	-10.9	22
23	167	15.2 -00.3	S 22 31.0	+00.3	119	05.4 -00.6	S 22 49.6	-00.6	106	14.9 -31.5	S 21 32.2	-11.0	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 15'6 15'6 15'6 15'6 15'6 15'7				
	HP 00'1 00'1 00'1 00'1 00'1 00'1								HP 57'1 57'2 57'3 57'4 57'4 57'5				
	SHA 108° 108° 108° 107° 107° 107°								SHA 058° 056° 053° 051° 049° 047°				
	Greenwich Culmination Time: 11:50								Greenwich Culmination Time: 15:03				
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	305	02.2 +02.4	N 21 22.8	+00.1	358	43.1 +02.8	N 22 05.8	-00.1	89	08.5 +02.4	S 08 33.5	+00.0	00
01	320	04.6 +02.3	N 21 22.9	+00.1	13	45.9 +02.9	N 22 05.7	+00.0	104	10.9 +02.4	S 08 33.5	+00.0	01
02	335	06.9 +02.4	N 21 23.0	+00.1	28	48.8 +02.8	N 22 05.7	+00.0	119	13.3 +02.3	S 08 33.5	-00.1	02
03	350	09.3 +02.4	N 21 23.1	+00.1	43	51.6 +02.8	N 22 05.7	-00.1	134	15.6 +02.4	S 08 33.4	+00.0	03
04	5	11.7 +02.4	N 21 23.2	+00.1	58	54.4 +02.9	N 22 05.6	+00.0	149	18.0 +02.4	S 08 33.4	-00.1	04
05	20	14.1 +02.3	N 21 23.3	+00.1	73	57.3 +02.8	N 22 05.6	+00.0	164	20.4 +02.4	S 08 33.3	+00.0	05
06	35	16.4 +02.4	N 21 23.4	+00.1	89	00.1 +02.8	N 22 05.6	+00.0	179	22.8 +02.4	S 08 33.3	+00.0	06
07	50	18.8 +02.4	N 21 23.5	+00.1	104	02.9 +02.8	N 22 05.6	-00.1	194	25.2 +02.4	S 08 33.3	-00.1	07
08	65	21.2 +02.4	N 21 23.6	+00.1	119	05.7 +02.9	N 22 05.5	+00.0	209	27.6 +02.4	S 08 33.2	+00.0	08
09	80	23.6 +02.3	N 21 23.7	+00.1	134	08.6 +02.8	N 22 05.5	+00.0	224	30.0 +02.3	S 08 33.2	-00.1	09
10	95	25.9 +02.4	N 21 23.8	+00.1	149	11.4 +02.8	N 22 05.5	-00.1	239	32.3 +02.4	S 08 33.1	+00.0	10
11	110	28.3 +02.4	N 21 23.9	+00.1	164	14.2 +02.9	N 22 05.4	+00.0	254	34.7 +02.4	S 08 33.1	+00.0	11
12	125	30.7 +02.4	N 21 24.0	+00.1	179	17.1 +02.8	N 22 05.4	+00.0	269	37.1 +02.4	S 08 33.1	-00.1	12
13	140	33.1 +02.4	N 21 24.1	+00.1	194	19.9 +02.8	N 22 05.4	+00.0	284	39.5 +02.4	S 08 33.0	+00.0	13
14	155	35.5 +02.3	N 21 24.2	+00.1	209	22.7 +02.9	N 22 05.4	-00.1	299	41.9 +02.4	S 08 33.0	-00.1	14
15	170	37.8 +02.4	N 21 24.3	+00.1	224	25.6 +02.8	N 22 05.3	+00.0	314	44.3 +02.4	S 08 32.9	+00.0	15
16	185	40.2 +02.4	N 21 24.4	+00.1	239	28.4 +02.8	N 22 05.3	+00.0	329	46.7 +02.3	S 08 32.9	+00.0	16
17	200	42.6 +02.4	N 21 24.5	+00.1	254	31.2 +02.8	N 22 05.3	-00.1	344	49.0 +02.4	S 08 32.9	-00.1	17
18	215	45.0 +02.4	N 21 24.6	+00.1	269	34.0 +02.9	N 22 05.2	+00.0	359	51.4 +02.4	S 08 32.8	+00.0	18
19	230	47.4 +02.4	N 21 24.7	+00.1	284	36.9 +02.8	N 22 05.2	+00.0	14	53.8 +02.4	S 08 32.8	-00.1	19
20	245	49.8 +02.4	N 21 24.8	+00.1	299	39.7 +02.8	N 22 05.2	+00.0	29	56.2 +02.4	S 08 32.7	+00.0	20
21	260	52.2 +02.4	N 21 24.9	+00.1	314	42.5 +02.9	N 22 05.2	-00.1	44	58.6 +02.4	S 08 32.7	+00.0	21
22	275	54.6 +02.4	N 21 25.0	+00.1	329	45.4 +02.8	N 22 05.1	+00.0	60	01.0 +02.3	S 08 32.7	-00.1	22
23	290	57.0 +02.4	N 21 25.1	+00.1	344	48.2 +02.8	N 22 05.1	+00.0	75	03.3 +02.4	S 08 32.6	+00.0	23
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 00'4 00'4 00'4 00'4 00'4 00'4				SD 00'1 00'1 00'1 00'1 00'1 00'1				
	HP 00'2 00'2 00'2 00'2 00'2 00'2				HP 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 231° 231° 231° 231° 231° 231°				SHA 284° 284° 284° 285° 285° 285°				SHA 015° 015° 015° 015° 015° 015°				
	Greenwich Culmination Time: 03:39				Greenwich Culmination Time: 00:05				Greenwich Culmination Time: 18:00				

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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 14.9 -00.3	S	22 31.3 +00.3	134 04.8 -00.6	S	22 49.0 -00.6	120 43.4 -31.5	S	21 21.2 -11.1	00							
01	197 14.6 -00.2	S	22 31.6 +00.3	149 04.2 -00.6	S	22 48.4 -00.6	135 11.9 -31.4	S	21 10.1 -11.3	01							
02	212 14.4 -00.3	S	22 31.9 +00.3	164 03.6 -00.6	S	22 47.8 -00.7	149 40.5 -31.3	S	20 58.8 -11.3	02							
03	227 14.1 -00.3	S	22 32.2 +00.2	179 03.0 -00.6	S	22 47.1 -00.6	164 09.2 -31.2	S	20 47.5 -11.5	03							
04	242 13.8 -00.2	S	22 32.4 +00.3	194 02.4 -00.6	S	22 46.5 -00.6	178 38.0 -31.2	S	20 36.0 -11.6	04							
05	257 13.6 -00.3	S	22 32.7 +00.3	209 01.8 -00.6	S	22 45.9 -00.7	193 06.8 -31.1	S	20 24.4 -11.7	05							
06	272 13.3 -00.3	S	22 33.0 +00.3	224 01.2 -00.6	S	22 45.2 -00.6	207 35.7 -31.1	S	20 12.7 -11.9	06							
07	287 13.0 -00.2	S	22 33.3 +00.3	239 00.6 -00.6	S	22 44.6 -00.6	222 04.6 -31.0	S	20 00.8 -11.9	07							
08	302 12.8 -00.3	S	22 33.6 +00.3	254 00.0 -00.6	S	22 44.0 -00.6	236 33.6 -31.0	S	19 48.9 -12.1	08							
09	317 12.5 -00.3	S	22 33.9 +00.3	268 59.4 -00.6	S	22 43.4 -00.7	251 02.6 -30.8	S	19 36.8 -12.1	09							
10	332 12.2 -00.2	S	22 34.2 +00.3	283 58.8 -00.6	S	22 42.7 -00.6	265 31.8 -30.8	S	19 24.7 -12.3	10							
11	347 12.0 -00.3	S	22 34.5 +00.3	298 58.2 -00.6	S	22 42.1 -00.6	280 01.0 -30.8	S	19 12.4 -12.4	11							
12	2 11.7 -00.3	S	22 34.8 +00.2	313 57.6 -00.6	S	22 41.5 -00.7	294 30.2 -30.7	S	19 00.0 -12.5	12							
13	17 11.4 -00.2	S	22 35.0 +00.3	328 57.0 -00.6	S	22 40.8 -00.6	308 59.5 -30.6	S	18 47.5 -12.6	13							
14	32 11.2 -00.3	S	22 35.3 +00.3	343 56.4 -00.5	S	22 40.2 -00.7	323 28.9 -30.6	S	18 34.9 -12.7	14							
15	47 10.9 -00.3	S	22 35.6 +00.3	358 55.9 -00.6	S	22 39.5 -00.6	337 58.3 -30.5	S	18 22.2 -12.8	15							
16	62 10.6 -00.2	S	22 35.9 +00.3	13 55.3 -00.6	S	22 38.9 -00.6	352 27.8 -30.5	S	18 09.4 -12.9	16							
17	77 10.4 -00.3	S	22 36.2 +00.3	28 54.7 -00.6	S	22 38.3 -00.7	6 57.3 -30.4	S	17 56.5 -13.0	17							
18	92 10.1 -00.3	S	22 36.5 +00.2	43 54.1 -00.6	S	22 37.6 -00.6	21 26.9 -30.3	S	17 43.5 -13.1	18							
19	107 09.8 -00.2	S	22 36.7 +00.3	58 53.5 -00.6	S	22 37.0 -00.7	35 56.6 -30.3	S	17 30.4 -13.2	19							
20	122 09.6 -00.3	S	22 37.0 +00.3	73 52.9 -00.6	S	22 36.3 -00.6	50 26.3 -30.2	S	17 17.2 -13.3	20							
21	137 09.3 -00.3	S	22 37.3 +00.3	88 52.3 -00.6	S	22 35.7 -00.6	64 56.1 -30.2	S	17 03.9 -13.4	21							
22	152 09.0 -00.3	S	22 37.6 +00.3	103 51.7 -00.6	S	22 35.1 -00.7	79 25.9 -30.1	S	16 50.5 -13.5	22							
23	167 08.7 -00.2	S	22 37.9 +00.2	118 51.1 -00.5	S	22 34.4 -00.6	93 55.8 -30.0	S	16 37.0 -13.6	23							
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT			
SD	16'2	16'2	16'2	16'2	16'2	16'2	SD	00'1	00'1	00'1	00'1	00'1	00'1	SD			
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	107°	107°	107°	106°	106°	106°	SHA	059°	059°	058°	058°	058°	058°	SHA			
Greenwich Culmination Time: 11:51						Greenwich Culmination Time: 15:04						Greenwich Culmination Time: 16:31					

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT				
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec					
00	305 59.4 +02.4	N	21 25.2 +00.1	359 51.0 +02.9	N	22 05.1 -00.1	90 05.7 +02.4	S	08 32.6 -00.1	00							
01	321 01.8 +02.4	N	21 25.3 +00.1	14 53.9 +02.8	N	22 05.0 +00.0	105 08.1 +02.4	S	08 32.5 +00.0	01							
02	336 04.2 +02.4	N	21 25.4 +00.1	29 56.7 +02.8	N	22 05.0 +00.0	120 10.5 +02.4	S	08 32.5 +00.0	02							
03	351 06.6 +02.4	N	21 25.5 +00.1	44 59.5 +02.9	N	22 05.0 +00.0	135 12.9 +02.4	S	08 32.5 -00.1	03							
04	6 09.0 +02.4	N	21 25.6 +00.1	60 02.4 +02.8	N	22 05.0 -00.1	150 15.3 +02.3	S	08 32.4 +00.0	04							
05	21 11.4 +02.4	N	21 25.7 +00.1	75 05.2 +02.8	N	22 04.9 +00.0	165 17.6 +02.4	S	08 32.4 -00.1	05							
06	36 13.8 +02.4	N	21 25.8 +00.1	90 08.0 +02.8	N	22 04.9 +00.0	180 20.0 +02.4	S	08 32.3 +00.0	06							
07	51 16.2 +02.4	N	21 25.9 +00.1	105 10.8 +02.9	N	22 04.9 -00.1	195 22.4 +02.4	S	08 32.3 +00.0	07							
08	66 18.6 +02.4	N	21 26.0 +00.1	120 13.7 +02.8	N	22 04.8 +00.0	210 24.8 +02.4	S	08 32.3 -00.1	08							
09	81 21.0 +02.4	N	21 26.1 +00.1	135 16.5 +02.8	N	22 04.8 +00.0	225 27.2 +02.4	S	08 32.2 +00.0	09							
10	96 23.4 +02.5	N	21 26.2 +00.1	150 19.3 +02.9	N	22 04.8 -00.1	240 29.6 +02.3	S	08 32.2 -00.1	10							
11	111 25.9 +02.4	N	21 26.3 +00.1	165 22.2 +02.8	N	22 04.7 +00.0	255 31.9 +02.4	S	08 32.1 +00.0	11							
12	126 28.3 +02.4	N	21 26.4 +00.1	180 25.0 +02.8	N	22 04.7 +00.0	270 34.3 +02.4	S	08 32.1 -00.1	12							
13	141 30.7 +02.4	N	21 26.5 +00.2	195 27.8 +02.9	N	22 04.7 +00.0	285 36.7 +02.4	S	08 32.0 +00.0	13							
14	156 33.1 +02.4	N	21 26.7 +00.1	210 30.7 +02.8	N	22 04.7 -00.1	300 39.1 +02.4	S	08 32.0 +00.0	14							
15	171 35.5 +02.5	N	21 26.8 +00.1	225 33.5 +02.8	N	22 04.6 +00.0	315 41.5 +02.3	S	08 32.0 -00.1	15							
16	186 38.0 +02.4	N	21 26.9 +00.1	240 36.3 +02.9	N	22 04.6 +00.0	330 43.8 +02.4	S	08 31.9 +00.0	16							
17	201 40.4 +02.4	N	21 27.0 +00.1	255 39.2 +02.8	N	22 04.6 -00.1	345 46.2 +02.4	S	08 31.9 -00.1	17							
18	216 42.8 +02.4	N	21 27.1 +00.1	270 42.0 +02.8	N	22 04.5 +00.0	0 48.6 +02.4	S	08 31.8 +00.0	18							
19	231 45.2 +02.5	N	21 27.2 +00.1	285 44.8 +02.8	N	22 04.5 +00.0	15 51.0 +02.4	S	08 31.8 +00.0	19							
20	246 47.7 +02.4	N	21 27.3 +00.1	300 47.6 +02.9	N	22 04.5 +00.0	30 53.4 +02.4	S	08 31.8 -00.1	20							
21	261 50.1 +02.4	N	21 27.4 +00.1	315 50.5 +02.8	N	22 04.5 -00.1	45 55.8 +02.3	S	08 31.7 +00.0	21							
22	276 52.5 +02.4	N	21 27.5 +00.1	330 53.3 +02.8	N	22 04.4 +00.0	60 58.1 +02.4	S	08 31.7 -00.1	22							
23	291 54.9 +02.5	N	21 27.6 +00.1	345 56.1 +02.9	N	22 04.4 +00.0	76 00.5 +02.4	S	08 31.6 +00.0	23							
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT			
SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	00'4	00'4	00'4	00'4	00'4	00'4	SD			
HP	00'2	00'2	00'2	00'2	00'2	00'2	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP			
SHA	231°	231°	231°	231°	231°	231°	SHA	285°	285°	285°	285°	285°	285°	SHA			
Greenwich Culmination Time: 03:35						Greenwich Culmination Time: 00:00						Greenwich Culmination Time: 17:56					

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 08.5 -00.3	S	22 38.1 +00.3	133 50.6 -00.6	S	22 33.8 -00.7	108 25.8 -30.0	S	16 23.4 -13.7	00			
01	197 08.2 -00.3	S	22 38.4 +00.3	148 50.0 -00.6	S	22 33.1 -00.6	122 55.8 -30.0	S	16 09.7 -13.8	01			
02	212 07.9 -00.2	S	22 38.7 +00.3	163 49.4 -00.6	S	22 32.5 -00.7	137 25.8 -29.9	S	15 55.9 -13.8	02			
03	227 07.7 -00.3	S	22 39.0 +00.2	178 48.8 -00.6	S	22 31.8 -00.6	151 55.9 -29.8	S	15 42.1 -14.0	03			
04	242 07.4 -00.3	S	22 39.2 +00.3	193 48.2 -00.6	S	22 31.2 -00.7	166 26.1 -29.8	S	15 28.1 -14.0	04			
05	257 07.1 -00.3	S	22 39.5 +00.3	208 47.6 -00.5	S	22 30.5 -00.6	180 56.3 -29.8	S	15 14.1 -14.1	05			
06	272 06.8 -00.2	S	22 39.8 +00.2	223 47.1 -00.6	S	22 29.9 -00.7	195 26.5 -29.7	S	14 60.0 -14.2	06			
07	287 06.6 -00.3	S	22 40.0 +00.3	238 46.5 -00.6	S	22 29.2 -00.7	209 56.8 -29.6	S	14 45.8 -14.3	07			
08	302 06.3 -00.3	S	22 40.3 +00.3	253 45.9 -00.6	S	22 28.5 -00.6	224 27.2 -29.6	S	14 31.5 -14.4	08			
09	317 06.0 -00.2	S	22 40.6 +00.3	268 45.3 -00.6	S	22 27.9 -00.7	238 57.6 -29.5	S	14 17.1 -14.5	09			
10	332 05.8 -00.3	S	22 40.9 +00.2	283 44.7 -00.5	S	22 27.2 -00.6	253 28.1 -29.5	S	14 02.6 -14.5	10			
11	347 05.5 -00.3	S	22 41.1 +00.3	298 44.2 -00.6	S	22 26.6 -00.7	267 58.6 -29.5	S	13 48.1 -14.6	11			
12	2 05.2 -00.3	S	22 41.4 +00.3	313 43.6 -00.6	S	22 25.9 -00.6	282 29.1 -29.4	S	13 33.5 -14.7	12			
13	17 04.9 -00.2	S	22 41.7 +00.2	328 43.0 -00.6	S	22 25.3 -00.7	296 59.7 -29.4	S	13 18.8 -14.8	13			
14	32 04.7 -00.3	S	22 41.9 +00.3	343 42.4 -00.5	S	22 24.6 -00.7	311 30.3 -29.3	S	13 04.0 -14.8	14			
15	47 04.4 -00.3	S	22 42.2 +00.2	358 41.9 -00.6	S	22 23.9 -00.6	326 01.0 -29.3	S	12 49.2 -14.9	15			
16	62 04.1 -00.2	S	22 42.4 +00.3	13 41.3 -00.6	S	22 23.3 -00.7	340 31.7 -29.2	S	12 34.3 -15.0	16			
17	77 03.9 -00.3	S	22 42.7 +00.3	28 40.7 -00.6	S	22 22.6 -00.7	355 02.5 -29.2	S	12 19.3 -15.1	17			
18	92 03.6 -00.3	S	22 43.0 +00.2	43 40.1 -00.5	S	22 21.9 -00.6	9 33.3 -29.2	S	12 04.2 -15.1	18			
19	107 03.3 -00.3	S	22 43.2 +00.3	58 39.6 -00.6	S	22 21.3 -00.7	24 04.1 -29.1	S	11 49.1 -15.2	19			
20	122 03.0 -00.2	S	22 43.5 +00.3	73 39.0 -00.6	S	22 20.6 -00.7	38 35.0 -29.1	S	11 33.9 -15.3	20			
21	137 02.8 -00.3	S	22 43.8 +00.2	88 38.4 -00.5	S	22 19.9 -00.6	53 05.9 -29.1	S	11 18.6 -15.3	21			
22	152 02.5 -00.3	S	22 44.0 +00.3	103 37.9 -00.6	S	22 19.3 -00.7	67 36.8 -29.0	S	11 03.3 -15.4	22			
23	167 02.2 -00.3	S	22 44.3 +00.2	118 37.3 -00.6	S	22 18.6 -00.7	82 07.8 -29.0	S	10 47.9 -15.5	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22				UT 02 06 10 14 18 22					
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'1 00'1 00'1 00'1 00'2 00'2				SD 15'8 15'9 15'9 15'9 15'9 15'9					
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'2 00'2 00'2 00'2 00'2 00'2				HP 58'1 58'2 58'3 58'3 58'4 58'5					
	SHA 106° 106° 105° 105° 105° 105°			SHA 057° 057° 057° 057° 057° 056°				SHA 031° 029° 027° 025° 023° 020°					
	Greenwich Culmination Time: 11:51			Greenwich Culmination Time: 15:05				Greenwich Culmination Time: 17:20					

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	306 57.4 +02.4	N	21 27.7 +00.2	0 59.0 +02.8	N	22 04.4 -00.1	91 02.9 +02.4	S	08 31.6 -00.1	00			
01	321 59.8 +02.5	N	21 27.9 +00.1	16 01.8 +02.8	N	22 04.3 +00.0	106 05.3 +02.4	S	08 31.5 +00.0	01			
02	337 02.3 +02.4	N	21 28.0 +00.1	31 04.6 +02.9	N	22 04.3 +00.0	121 07.7 +02.3	S	08 31.5 +00.0	02			
03	352 04.7 +02.4	N	21 28.1 +00.1	46 07.5 +02.8	N	22 04.3 +00.0	136 10.0 +02.4	S	08 31.5 -00.1	03			
04	7 07.1 +02.5	N	21 28.2 +00.1	61 10.3 +02.8	N	22 04.3 -00.1	151 12.4 +02.4	S	08 31.4 +00.0	04			
05	22 09.6 +02.4	N	21 28.3 +00.1	76 13.1 +02.9	N	22 04.2 +00.0	166 14.8 +02.4	S	08 31.4 -00.1	05			
06	37 12.0 +02.5	N	21 28.4 +00.1	91 16.0 +02.8	N	22 04.2 +00.0	181 17.2 +02.3	S	08 31.3 +00.0	06			
07	52 14.5 +02.4	N	21 28.5 +00.1	106 18.8 +02.8	N	22 04.2 -00.1	196 19.5 +02.4	S	08 31.3 -00.1	07			
08	67 16.9 +02.4	N	21 28.6 +00.2	121 21.6 +02.8	N	22 04.1 +00.0	211 21.9 +02.4	S	08 31.2 +00.0	08			
09	82 19.3 +02.5	N	21 28.8 +00.1	136 24.4 +02.9	N	22 04.1 +00.0	226 24.3 +02.4	S	08 31.2 +00.0	09			
10	97 21.8 +02.4	N	21 28.9 +00.1	151 27.3 +02.8	N	22 04.1 +00.0	241 26.7 +02.4	S	08 31.2 -00.1	10			
11	112 24.2 +02.5	N	21 29.0 +00.1	166 30.1 +02.8	N	22 04.1 -00.1	256 29.1 +02.3	S	08 31.1 +00.0	11			
12	127 26.7 +02.4	N	21 29.1 +00.1	181 32.9 +02.9	N	22 04.0 +00.0	271 31.4 +02.4	S	08 31.1 -00.1	12			
13	142 29.1 +02.5	N	21 29.2 +00.1	196 35.8 +02.8	N	22 04.0 +00.0	286 33.8 +02.4	S	08 31.0 +00.0	13			
14	157 31.6 +02.4	N	21 29.3 +00.2	211 38.6 +02.8	N	22 04.0 -00.1	301 36.2 +02.4	S	08 31.0 -00.1	14			
15	172 34.0 +02.5	N	21 29.5 +00.1	226 41.4 +02.9	N	22 03.9 +00.0	316 38.6 +02.3	S	08 30.9 +00.0	15			
16	187 36.5 +02.5	N	21 29.6 +00.1	241 44.3 +02.8	N	22 03.9 +00.0	331 40.9 +02.4	S	08 30.9 +00.0	16			
17	202 39.0 +02.4	N	21 29.7 +00.1	256 47.1 +02.8	N	22 03.9 +00.0	346 43.3 +02.4	S	08 30.9 -00.1	17			
18	217 41.4 +02.5	N	21 29.8 +00.1	271 49.9 +02.9	N	22 03.9 -00.1	1 45.7 +02.4	S	08 30.8 +00.0	18			
19	232 43.9 +02.4	N	21 29.9 +00.1	286 52.8 +02.8	N	22 03.8 +00.0	16 48.1 +02.4	S	08 30.8 -00.1	19			
20	247 46.3 +02.5	N	21 30.0 +00.2	301 55.6 +02.8	N	22 03.8 +00.0	31 50.5 +02.3	S	08 30.7 +00.0	20			
21	262 48.8 +02.5	N	21 30.2 +00.1	316 58.4 +02.8	N	22 03.8 -00.1	46 52.8 +02.4	S	08 30.7 -00.1	21			
22	277 51.3 +02.4	N	21 30.3 +00.1	332 01.2 +02.9	N	22 03.7 +00.0	61 55.2 +02.4	S	08 30.6 +00.0	22			
23	292 53.7 +02.5	N	21 30.4 +00.1	347 04.1 +02.8	N	22 03.7 +00.0	76 57.6 +02.4	S	08 30.6 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22				UT 02 06 10 14 18 22					
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4				SD 00'1 00'1 00'1 00'1 00'1 00'1					
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0					
	SHA 231° 231° 231° 231° 231° 231°			SHA 285° 285° 285° 285° 285° 285°				SHA 015° 015° 015° 015° 015° 015°					
	Greenwich Culmination Time: 03:31			Greenwich Culmination Time: 23:51				Greenwich Culmination Time: 17:52					

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UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	182 01.9 -00.2	S	22 44.5 +00.3	133 36.7 -00.5	S	22 17.9 -00.6	96 38.8 -29.0	S	10 32.4 -15.5	00			
01	197 01.7 -00.3	S	22 44.8 +00.2	148 36.2 -00.6	S	22 17.3 -00.7	111 09.8 -28.9	S	10 16.9 -15.6	01			
02	212 01.4 -00.3	S	22 45.0 +00.3	163 35.6 -00.6	S	22 16.6 -00.7	125 40.9 -28.9	S	10 01.3 -15.6	02			
03	227 01.1 -00.3	S	22 45.3 +00.3	178 35.0 -00.5	S	22 15.9 -00.7	140 12.0 -28.9	S	09 45.7 -15.7	03			
04	242 00.8 -00.2	S	22 45.6 +00.2	193 34.5 -00.6	S	22 15.2 -00.6	154 43.1 -28.8	S	09 30.0 -15.8	04			
05	257 00.6 -00.3	S	22 45.8 +00.3	208 33.9 -00.6	S	22 14.6 -00.7	169 14.3 -28.8	S	09 14.2 -15.8	05			
06	272 00.3 -00.3	S	22 46.1 +00.2	223 33.3 -00.5	S	22 13.9 -00.7	183 45.5 -28.8	S	08 58.4 -15.8	06			
07	287 00.0 -00.3	S	22 46.3 +00.3	238 32.8 -00.6	S	22 13.2 -00.7	198 16.7 -28.8	S	08 42.6 -16.0	07			
08	301 59.7 -00.2	S	22 46.6 +00.2	253 32.2 -00.6	S	22 12.5 -00.7	212 47.9 -28.7	S	08 26.6 -15.9	08			
09	316 59.5 -00.3	S	22 46.8 +00.3	268 31.6 -00.5	S	22 11.8 -00.6	227 19.2 -28.8	S	08 10.7 -16.1	09			
10	331 59.2 -00.3	S	22 47.1 +00.2	283 31.1 -00.6	S	22 11.2 -00.7	241 50.4 -28.7	S	07 54.6 -16.0	10			
11	346 58.9 -00.3	S	22 47.3 +00.3	298 30.5 -00.5	S	22 10.5 -00.7	256 21.7 -28.7	S	07 38.6 -16.1	11			
12	1 58.6 -00.3	S	22 47.6 +00.2	313 30.0 -00.6	S	22 09.8 -00.7	270 53.0 -28.6	S	07 22.5 -16.2	12			
13	16 58.3 -00.2	S	22 47.8 +00.3	328 29.4 -00.5	S	22 09.1 -00.7	285 24.4 -28.7	S	07 06.3 -16.2	13			
14	31 58.1 -00.3	S	22 48.1 +00.2	343 28.9 -00.6	S	22 08.4 -00.7	299 55.7 -28.6	S	06 50.1 -16.3	14			
15	46 57.8 -00.3	S	22 48.3 +00.3	358 28.3 -00.6	S	22 07.7 -00.6	314 27.1 -28.7	S	06 33.8 -16.3	15			
16	61 57.5 -00.3	S	22 48.6 +00.2	13 27.7 -00.5	S	22 07.1 -00.7	328 58.4 -28.6	S	06 17.5 -16.3	16			
17	76 57.2 -00.2	S	22 48.8 +00.2	28 27.2 -00.6	S	22 06.4 -00.7	343 29.8 -28.6	S	06 01.2 -16.4	17			
18	91 57.0 -00.3	S	22 49.0 +00.3	43 26.6 -00.5	S	22 05.7 -00.7	358 01.2 -28.6	S	05 44.8 -16.4	18			
19	106 56.7 -00.3	S	22 49.3 +00.2	58 26.1 -00.6	S	22 05.0 -00.7	12 32.6 -28.6	S	05 28.4 -16.5	19			
20	121 56.4 -00.3	S	22 49.5 +00.3	73 25.5 -00.5	S	22 04.3 -00.7	27 04.0 -28.6	S	05 11.9 -16.5	20			
21	136 56.1 -00.3	S	22 49.8 +00.2	88 25.0 -00.6	S	22 03.6 -00.7	41 35.4 -28.5	S	04 55.4 -16.5	21			
22	151 55.8 -00.2	S	22 50.0 +00.3	103 24.4 -00.5	S	22 02.9 -00.7	56 06.9 -28.6	S	04 38.9 -16.6	22			
23	166 55.6 -00.3	S	22 50.3 +00.2	118 23.9 -00.6	S	22 02.2 -00.7	70 38.3 -28.6	S	04 22.3 -16.5	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 00'2 00'2 00'2 00'2 00'2 00'2			SD 16'0 16'0 16'0 16'0 16'1 16'1						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 58'6 58'7 58'8 58'8 58'9 59'0						
	SHA 105° 105° 104° 104° 104° 104°			SHA 056° 056° 056° 056° 055° 055°			SHA 018° 016° 014° 012° 010° 008°						
	Greenwich Culmination Time: 11:52			Greenwich Culmination Time: 15:06			Greenwich Culmination Time: 18:08						

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	307 56.2 +02.5	N	21 30.5 +00.1	2 06.9 +02.8	N	22 03.7 -00.1	91 60.0 +02.3	S	08 30.6 -00.1	00			
01	322 58.7 +02.4	N	21 30.6 +00.2	17 09.7 +02.9	N	22 03.6 +00.0	107 02.3 +02.4	S	08 30.5 +00.0	01			
02	338 01.1 +02.5	N	21 30.8 +00.1	32 12.6 +02.8	N	22 03.6 +00.0	122 04.7 +02.4	S	08 30.5 -00.1	02			
03	353 03.6 +02.5	N	21 30.9 +00.1	47 15.4 +02.8	N	22 03.6 +00.0	137 07.1 +02.4	S	08 30.4 +00.0	03			
04	8 06.1 +02.5	N	21 31.0 +00.1	62 18.2 +02.9	N	22 03.6 -00.1	152 09.5 +02.3	S	08 30.4 -00.1	04			
05	23 08.6 +02.4	N	21 31.1 +00.1	77 21.1 +02.8	N	22 03.5 +00.0	167 11.8 +02.4	S	08 30.3 +00.0	05			
06	38 11.0 +02.5	N	21 31.2 +00.2	92 23.9 +02.8	N	22 03.5 +00.0	182 14.2 +02.4	S	08 30.3 -00.1	06			
07	53 13.5 +02.5	N	21 31.4 +00.1	107 26.7 +02.9	N	22 03.5 -00.1	197 16.6 +02.4	S	08 30.2 +00.0	07			
08	68 16.0 +02.5	N	21 31.5 +00.1	122 29.6 +02.8	N	22 03.4 +00.0	212 19.0 +02.3	S	08 30.2 +00.0	08			
09	83 18.5 +02.5	N	21 31.6 +00.1	137 32.4 +02.8	N	22 03.4 +00.0	227 21.3 +02.4	S	08 30.2 -00.1	09			
10	98 21.0 +02.4	N	21 31.7 +00.2	152 35.2 +02.8	N	22 03.4 +00.0	242 23.7 +02.4	S	08 30.1 +00.0	10			
11	113 23.4 +02.5	N	21 31.9 +00.1	167 38.0 +02.9	N	22 03.4 -00.1	257 26.1 +02.4	S	08 30.1 -00.1	11			
12	128 25.9 +02.5	N	21 32.0 +00.1	182 40.9 +02.8	N	22 03.3 +00.0	272 28.5 +02.3	S	08 30.0 +00.0	12			
13	143 28.4 +02.5	N	21 32.1 +00.1	197 43.7 +02.8	N	22 03.3 +00.0	287 30.8 +02.4	S	08 30.0 -00.1	13			
14	158 30.9 +02.5	N	21 32.2 +00.2	212 46.5 +02.9	N	22 03.3 -00.1	302 33.2 +02.4	S	08 29.9 +00.0	14			
15	173 33.4 +02.5	N	21 32.4 +00.1	227 49.4 +02.8	N	22 03.2 +00.0	317 35.6 +02.3	S	08 29.9 -00.1	15			
16	188 35.9 +02.5	N	21 32.5 +00.1	242 52.2 +02.8	N	22 03.2 +00.0	332 37.9 +02.4	S	08 29.8 +00.0	16			
17	203 38.4 +02.5	N	21 32.6 +00.1	257 55.0 +02.9	N	22 03.2 +00.0	347 40.3 +02.4	S	08 29.8 +00.0	17			
18	218 40.9 +02.5	N	21 32.7 +00.2	272 57.9 +02.8	N	22 03.2 -00.1	2 42.7 +02.4	S	08 29.8 -00.1	18			
19	233 43.4 +02.5	N	21 32.9 +00.1	288 00.7 +02.8	N	22 03.1 +00.0	17 45.1 +02.3	S	08 29.7 +00.0	19			
20	248 45.9 +02.5	N	21 33.0 +00.1	303 03.5 +02.8	N	22 03.1 +00.0	32 47.4 +02.4	S	08 29.7 -00.1	20			
21	263 48.4 +02.5	N	21 33.1 +00.1	318 06.3 +02.9	N	22 03.1 -00.1	47 49.8 +02.4	S	08 29.6 +00.0	21			
22	278 50.9 +02.5	N	21 33.2 +00.2	333 09.2 +02.8	N	22 03.0 +00.0	62 52.2 +02.4	S	08 29.6 -00.1	22			
23	293 53.4 +02.5	N	21 33.4 +00.1	348 12.0 +02.8	N	22 03.0 +00.0	77 54.6 +02.3	S	08 29.5 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 231° 231° 231° 231° 231° 231°			SHA 285° 285° 285° 285° 285° 285°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 03:27			Greenwich Culmination Time: 23:47			Greenwich Culmination Time: 17:49						

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UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	181 55.3 -00.3	S	22 50.5 +00.2	133 23.3 -00.5	S	22 01.5 -00.7	85 09.7 -28.6	S	04 05.8 -16.7	00			
01	196 55.0 -00.3	S	22 50.7 +00.3	148 22.8 -00.6	S	22 00.8 -00.7	99 41.1 -28.5	S	03 49.1 -16.6	01			
02	211 54.7 -00.3	S	22 51.0 +00.2	163 22.2 -00.5	S	22 00.1 -00.7	114 12.6 -28.6	S	03 32.5 -16.7	02			
03	226 54.4 -00.2	S	22 51.2 +00.2	178 21.7 -00.6	S	21 59.4 -00.7	128 44.0 -28.6	S	03 15.8 -16.7	03			
04	241 54.2 -00.3	S	22 51.4 +00.3	193 21.1 -00.5	S	21 58.7 -00.7	143 15.4 -28.5	S	02 59.1 -16.7	04			
05	256 53.9 -00.3	S	22 51.7 +00.2	208 20.6 -00.6	S	21 58.0 -00.7	157 46.9 -28.6	S	02 42.4 -16.8	05			
06	271 53.6 -00.3	S	22 51.9 +00.3	223 20.0 -00.5	S	21 57.3 -00.7	172 18.3 -28.6	S	02 25.6 -16.8	06			
07	286 53.3 -00.3	S	22 52.2 +00.2	238 19.5 -00.5	S	21 56.6 -00.7	186 49.7 -28.6	S	02 08.8 -16.8	07			
08	301 53.0 -00.2	S	22 52.4 +00.2	253 19.0 -00.6	S	21 55.9 -00.7	201 21.1 -28.6	S	01 52.0 -16.8	08			
09	316 52.8 -00.3	S	22 52.6 +00.2	268 18.4 -00.5	S	21 55.2 -00.7	215 52.5 -28.6	S	01 35.2 -16.8	09			
10	331 52.5 -00.3	S	22 52.8 +00.3	283 17.9 -00.6	S	21 54.5 -00.7	230 23.9 -28.7	S	01 18.4 -16.9	10			
11	346 52.2 -00.3	S	22 53.1 +00.2	298 17.3 -00.5	S	21 53.8 -00.7	244 55.2 -28.6	S	01 01.5 -16.9	11			
12	1 51.9 -00.3	S	22 53.3 +00.2	313 16.8 -00.5	S	21 53.1 -00.7	259 26.6 -28.7	S	00 44.6 -16.9	12			
13	16 51.6 -00.2	S	22 53.5 +00.3	328 16.3 -00.6	S	21 52.4 -00.7	273 57.9 -28.7	S	00 27.7 -16.8	13			
14	31 51.4 -00.3	S	22 53.8 +00.2	343 15.7 -00.5	S	21 51.7 -00.7	288 29.2 -28.7	S	00 10.9 -17.0	14			
15	46 51.1 -00.3	S	22 54.0 +00.2	358 15.2 -00.6	S	21 51.0 -00.7	303 00.5 -28.7	N	00 06.1 +16.9	15			
16	61 50.8 -00.3	S	22 54.2 +00.2	13 14.6 -00.5	S	21 50.3 -00.7	317 31.8 -28.7	N	00 23.0 +16.9	16			
17	76 50.5 -00.3	S	22 54.4 +00.3	28 14.1 -00.5	S	21 49.6 -00.8	332 03.1 -28.8	N	00 39.9 +16.9	17			
18	91 50.2 -00.3	S	22 54.7 +00.2	43 13.6 -00.6	S	21 48.8 -00.7	346 34.3 -28.8	N	00 56.8 +17.0	18			
19	106 49.9 -00.2	S	22 54.9 +00.2	58 13.0 -00.5	S	21 48.1 -00.7	1 05.5 -28.8	N	01 13.8 +16.9	19			
20	121 49.7 -00.3	S	22 55.1 +00.2	73 12.5 -00.5	S	21 47.4 -00.7	15 36.7 -28.8	N	01 30.7 +17.0	20			
21	136 49.4 -00.3	S	22 55.3 +00.3	88 12.0 -00.6	S	21 46.7 -00.7	30 07.9 -28.9	N	01 47.7 +16.9	21			
22	151 49.1 -00.3	S	22 55.6 +00.2	103 11.4 -00.5	S	21 46.0 -00.7	44 39.0 -28.9	N	02 04.6 +17.0	22			
23	166 48.8 -00.3	S	22 55.8 +00.2	118 10.9 -00.5	S	21 45.3 -00.7	59 10.1 -28.9	N	02 21.6 +16.9	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 00'2 00'2 00'2 00'2 00'2 00'2			SD 16'1 16'1 16'1 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 59'1 59'1 59'2 59'3 59'3 59'4						
	SHA 104° 103° 103° 103° 103° 103°			SHA 055° 055° 055° 054° 054° 054°			SHA 006° 004° 002° 360° 358° 356°						
	Greenwich Culmination Time: 11:52			Greenwich Culmination Time: 15:06			Greenwich Culmination Time: 18:55						

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	308 55.9 +02.5	N	21 33.5 +00.1	3 14.8 +02.9	N	22 03.0 -00.1	92 56.9 +02.4	S	08 29.5 -00.1	00			
01	323 58.4 +02.5	N	21 33.6 +00.2	18 17.7 +02.8	N	22 02.9 +00.0	107 59.3 +02.4	S	08 29.4 +00.0	01			
02	339 00.9 +02.5	N	21 33.8 +00.1	33 20.5 +02.8	N	22 02.9 +00.0	123 01.7 +02.3	S	08 29.4 -00.1	02			
03	354 03.4 +02.5	N	21 33.9 +00.1	48 23.3 +02.9	N	22 02.9 +00.0	138 04.0 +02.4	S	08 29.3 +00.0	03			
04	9 05.9 +02.5	N	21 34.0 +00.2	63 26.2 +02.8	N	22 02.9 -00.1	153 06.4 +02.4	S	08 29.3 +00.0	04			
05	24 08.4 +02.5	N	21 34.2 +00.1	78 29.0 +02.8	N	22 02.8 +00.0	168 08.8 +02.4	S	08 29.3 -00.1	05			
06	39 10.9 +02.5	N	21 34.3 +00.1	93 31.8 +02.9	N	22 02.8 +00.0	183 11.2 +02.3	S	08 29.2 +00.0	06			
07	54 13.4 +02.5	N	21 34.4 +00.1	108 34.7 +02.8	N	22 02.8 -00.1	198 13.5 +02.4	S	08 29.2 -00.1	07			
08	69 15.9 +02.6	N	21 34.5 +00.2	123 37.5 +02.8	N	22 02.7 +00.0	213 15.9 +02.4	S	08 29.1 +00.0	08			
09	84 18.5 +02.5	N	21 34.7 +00.1	138 40.3 +02.8	N	22 02.7 +00.0	228 18.3 +02.3	S	08 29.1 -00.1	09			
10	99 21.0 +02.5	N	21 34.8 +00.1	153 43.1 +02.9	N	22 02.7 +00.0	243 20.6 +02.4	S	08 29.0 +00.0	10			
11	114 23.5 +02.5	N	21 34.9 +00.2	168 46.0 +02.8	N	22 02.7 -00.1	258 23.0 +02.4	S	08 29.0 -00.1	11			
12	129 26.0 +02.5	N	21 35.1 +00.1	183 48.8 +02.8	N	22 02.6 +00.0	273 25.4 +02.3	S	08 28.9 +00.0	12			
13	144 28.5 +02.6	N	21 35.2 +00.1	198 51.6 +02.9	N	22 02.6 +00.0	288 27.7 +02.4	S	08 28.9 -00.1	13			
14	159 31.1 +02.5	N	21 35.3 +00.2	213 54.5 +02.8	N	22 02.6 -00.1	303 30.1 +02.4	S	08 28.8 +00.0	14			
15	174 33.6 +02.5	N	21 35.5 +00.1	228 57.3 +02.8	N	22 02.5 +00.0	318 32.5 +02.4	S	08 28.8 -00.1	15			
16	189 36.1 +02.5	N	21 35.6 +00.1	244 00.1 +02.9	N	22 02.5 +00.0	333 34.9 +02.3	S	08 28.7 +00.0	16			
17	204 38.6 +02.6	N	21 35.7 +00.2	259 03.0 +02.8	N	22 02.5 -00.1	348 37.2 +02.4	S	08 28.7 +00.0	17			
18	219 41.2 +02.5	N	21 35.9 +00.1	274 05.8 +02.8	N	22 02.4 +00.0	3 39.6 +02.4	S	08 28.7 -00.1	18			
19	234 43.7 +02.5	N	21 36.0 +00.2	289 08.6 +02.8	N	22 02.4 +00.0	18 42.0 +02.3	S	08 28.6 +00.0	19			
20	249 46.2 +02.6	N	21 36.2 +00.1	304 11.4 +02.9	N	22 02.4 +00.0	33 44.3 +02.4	S	08 28.6 -00.1	20			
21	264 48.8 +02.5	N	21 36.3 +00.1	319 14.3 +02.8	N	22 02.4 -00.1	48 46.7 +02.4	S	08 28.5 +00.0	21			
22	279 51.3 +02.5	N	21 36.4 +00.2	334 17.1 +02.8	N	22 02.3 +00.0	63 49.1 +02.3	S	08 28.5 -00.1	22			
23	294 53.8 +02.6	N	21 36.6 +00.1	349 19.9 +02.9	N	22 02.3 +00.0	78 51.4 +02.4	S	08 28.4 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 231° 231° 231° 231° 231° 231°			SHA 285° 285° 285° 285° 285° 285°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 03:23			Greenwich Culmination Time: 23:42			Greenwich Culmination Time: 17:45						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	181 48.5 -00.3	S	22 56.0 +00.2	133 10.4 -00.6	S	21 44.6 -00.8	73 41.2 -28.9	N	02 38.5 +16.9	00			
01	196 48.2 -00.2	S	22 56.2 +00.2	148 09.8 -00.5	S	21 43.8 -00.7	88 12.3 -29.0	N	02 55.4 +17.0	01			
02	211 48.0 -00.3	S	22 56.4 +00.3	163 09.3 -00.5	S	21 43.1 -00.7	102 43.3 -29.0	N	03 12.4 +16.9	02			
03	226 47.7 -00.3	S	22 56.7 +00.2	178 08.8 -00.5	S	21 42.4 -00.7	117 14.3 -29.1	N	03 29.3 +16.9	03			
04	241 47.4 -00.3	S	22 56.9 +00.2	193 08.3 -00.6	S	21 41.7 -00.7	131 45.2 -29.1	N	03 46.2 +16.9	04			
05	256 47.1 -00.3	S	22 57.1 +00.2	208 07.7 -00.5	S	21 41.0 -00.8	146 16.1 -29.2	N	04 03.1 +16.9	05			
06	271 46.8 -00.3	S	22 57.3 +00.2	223 07.2 -00.5	S	21 40.2 -00.7	160 46.9 -29.1	N	04 20.0 +16.9	06			
07	286 46.5 -00.2	S	22 57.5 +00.2	238 06.7 -00.5	S	21 39.5 -00.7	175 17.8 -29.3	N	04 36.9 +16.9	07			
08	301 46.3 -00.3	S	22 57.7 +00.3	253 06.2 -00.6	S	21 38.8 -00.8	189 48.5 -29.2	N	04 53.8 +16.8	08			
09	316 46.0 -00.3	S	22 58.0 +00.2	268 05.6 -00.5	S	21 38.0 -00.7	204 19.3 -29.3	N	05 10.6 +16.9	09			
10	331 45.7 -00.3	S	22 58.2 +00.2	283 05.1 -00.5	S	21 37.3 -00.7	218 50.0 -29.4	N	05 27.5 +16.8	10			
11	346 45.4 -00.3	S	22 58.4 +00.2	298 04.6 -00.5	S	21 36.6 -00.7	233 20.6 -29.4	N	05 44.3 +16.8	11			
12	1 45.1 -00.3	S	22 58.6 +00.2	313 04.1 -00.6	S	21 35.9 -00.8	247 51.2 -29.5	N	06 01.1 +16.8	12			
13	16 44.8 -00.3	S	22 58.8 +00.2	328 03.5 -00.5	S	21 35.1 -00.7	262 21.7 -29.5	N	06 17.9 +16.7	13			
14	31 44.5 -00.2	S	22 59.0 +00.2	343 03.0 -00.5	S	21 34.4 -00.7	276 52.2 -29.5	N	06 34.6 +16.7	14			
15	46 44.3 -00.3	S	22 59.2 +00.2	358 02.5 -00.5	S	21 33.7 -00.8	291 22.7 -29.6	N	06 51.3 +16.7	15			
16	61 44.0 -00.3	S	22 59.4 +00.2	13 02.0 -00.5	S	21 32.9 -00.7	305 53.1 -29.7	N	07 08.0 +16.7	16			
17	76 43.7 -00.3	S	22 59.6 +00.2	28 01.5 -00.5	S	21 32.2 -00.7	320 23.4 -29.7	N	07 24.7 +16.7	17			
18	91 43.4 -00.3	S	22 59.8 +00.2	43 01.0 -00.6	S	21 31.5 -00.8	334 53.7 -29.8	N	07 41.4 +16.6	18			
19	106 43.1 -00.3	S	23 00.0 +00.3	58 00.4 -00.5	S	21 30.7 -00.7	349 23.9 -29.8	N	07 58.0 +16.5	19			
20	121 42.8 -00.3	S	23 00.3 +00.2	72 59.9 -00.5	S	21 30.0 -00.7	3 54.1 -29.9	N	08 14.5 +16.6	20			
21	136 42.5 -00.3	S	23 00.5 +00.2	87 59.4 -00.5	S	21 29.3 -00.8	18 24.2 -30.0	N	08 31.1 +16.5	21			
22	151 42.2 -00.2	S	23 00.7 +00.2	102 58.9 -00.5	S	21 28.5 -00.7	32 54.2 -30.0	N	08 47.6 +16.4	22			
23	166 42.0 -00.3	S	23 00.9 +00.2	117 58.4 -00.5	S	21 27.8 -00.8	47 24.2 -30.1	N	09 04.0 +16.5	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 00'2 00'2 00'2 00'2 00'2 00'2			SD 16'2 16'2 16'2 16'3 16'3 16'3						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 59'5 59'5 59'6 59'6 59'7 59'7						
	SHA 103° 102° 102° 102° 102° 102°			SHA 054° 054° 053° 053° 053° 053°			SHA 353° 351° 349° 347° 345° 343°						
	Greenwich Culmination Time: 11:52			Greenwich Culmination Time: 15:07			Greenwich Culmination Time: 19:43						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	309 56.4 +02.5	N	21 36.7 +00.1	4 22.8 +02.8	N	22 02.3 -00.1	93 53.8 +02.4	S	08 28.4 -00.1	00			
01	324 58.9 +02.6	N	21 36.8 +00.2	19 25.6 +02.8	N	22 02.2 +00.0	108 56.2 +02.3	S	08 28.3 +00.0	01			
02	340 01.5 +02.5	N	21 37.0 +00.1	34 28.4 +02.8	N	22 02.2 +00.0	123 58.5 +02.4	S	08 28.3 -00.1	02			
03	355 04.0 +02.5	N	21 37.1 +00.2	49 31.2 +02.9	N	22 02.2 +00.0	139 00.9 +02.4	S	08 28.2 +00.0	03			
04	10 06.5 +02.6	N	21 37.3 +00.1	64 34.1 +02.8	N	22 02.2 -00.1	154 03.3 +02.3	S	08 28.2 -00.1	04			
05	25 09.1 +02.5	N	21 37.4 +00.1	79 36.9 +02.8	N	22 02.1 +00.0	169 05.6 +02.4	S	08 28.1 +00.0	05			
06	40 11.6 +02.6	N	21 37.5 +00.2	94 39.7 +02.9	N	22 02.1 +00.0	184 08.0 +02.4	S	08 28.1 -00.1	06			
07	55 14.2 +02.5	N	21 37.7 +00.1	109 42.6 +02.8	N	22 02.1 -00.1	199 10.4 +02.3	S	08 28.0 +00.0	07			
08	70 16.7 +02.6	N	21 37.8 +00.2	124 45.4 +02.8	N	22 02.0 +00.0	214 12.7 +02.4	S	08 28.0 -00.1	08			
09	85 19.3 +02.5	N	21 38.0 +00.1	139 48.2 +02.9	N	22 02.0 +00.0	229 15.1 +02.4	S	08 27.9 +00.0	09			
10	100 21.8 +02.6	N	21 38.1 +00.1	154 51.1 +02.8	N	22 02.0 -00.1	244 17.5 +02.3	S	08 27.9 -00.1	10			
11	115 24.4 +02.6	N	21 38.2 +00.2	169 53.9 +02.8	N	22 01.9 +00.0	259 19.8 +02.4	S	08 27.8 +00.0	11			
12	130 27.0 +02.5	N	21 38.4 +00.1	184 56.7 +02.8	N	22 01.9 +00.0	274 22.2 +02.4	S	08 27.8 +00.0	12			
13	145 29.5 +02.6	N	21 38.5 +00.2	199 59.5 +02.9	N	22 01.9 +00.0	289 24.6 +02.3	S	08 27.8 -00.1	13			
14	160 32.1 +02.5	N	21 38.7 +00.1	215 02.4 +02.8	N	22 01.9 -00.1	304 26.9 +02.4	S	08 27.7 +00.0	14			
15	175 34.6 +02.6	N	21 38.8 +00.1	230 05.2 +02.8	N	22 01.8 +00.0	319 29.3 +02.4	S	08 27.7 -00.1	15			
16	190 37.2 +02.6	N	21 38.9 +00.2	245 08.0 +02.9	N	22 01.8 +00.0	334 31.7 +02.3	S	08 27.6 +00.0	16			
17	205 39.8 +02.5	N	21 39.1 +00.1	260 10.9 +02.8	N	22 01.8 -00.1	349 34.0 +02.4	S	08 27.6 -00.1	17			
18	220 42.3 +02.6	N	21 39.2 +00.2	275 13.7 +02.8	N	22 01.7 +00.0	4 36.4 +02.4	S	08 27.5 +00.0	18			
19	235 44.9 +02.6	N	21 39.4 +00.1	290 16.5 +02.8	N	22 01.7 +00.0	19 38.8 +02.3	S	08 27.5 -00.1	19			
20	250 47.5 +02.5	N	21 39.5 +00.2	305 19.3 +02.9	N	22 01.7 +00.0	34 41.1 +02.4	S	08 27.4 +00.0	20			
21	265 50.0 +02.6	N	21 39.7 +00.1	320 22.2 +02.8	N	22 01.7 -00.1	49 43.5 +02.4	S	08 27.4 -00.1	21			
22	280 52.6 +02.6	N	21 39.8 +00.2	335 25.0 +02.8	N	22 01.6 +00.0	64 45.9 +02.3	S	08 27.3 +00.0	22			
23	295 55.2 +02.5	N	21 40.0 +00.1	350 27.8 +02.9	N	22 01.6 +00.0	79 48.2 +02.4	S	08 27.3 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 231° 231° 231° 231° 231° 231°			SHA 285° 285° 285° 285° 285° 285°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 03:19			Greenwich Culmination Time: 23:38			Greenwich Culmination Time: 17:41						

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 41.7 -00.3	S	23 01.1 +00.2	132 57.9 -00.5	S	21 27.0 -00.7	61 54.1 -30.2	N	09 20.5 +16.3	00			
01	196 41.4 -00.3	S	23 01.3 +00.2	147 57.4 -00.5	S	21 26.3 -00.7	76 23.9 -30.2	N	09 36.8 +16.4	01			
02	211 41.1 -00.3	S	23 01.5 +00.2	162 56.9 -00.6	S	21 25.6 -00.8	90 53.7 -30.3	N	09 53.2 +16.3	02			
03	226 40.8 -00.3	S	23 01.7 +00.2	177 56.3 -00.5	S	21 24.8 -00.7	105 23.4 -30.3	N	10 09.5 +16.2	03			
04	241 40.5 -00.3	S	23 01.9 +00.2	192 55.8 -00.5	S	21 24.1 -00.8	119 53.1 -30.5	N	10 25.7 +16.2	04			
05	256 40.2 -00.3	S	23 02.1 +00.2	207 55.3 -00.5	S	21 23.3 -00.7	134 22.6 -30.5	N	10 41.9 +16.1	05			
06	271 39.9 -00.2	S	23 02.3 +00.2	222 54.8 -00.5	S	21 22.6 -00.8	148 52.1 -30.5	N	10 58.0 +16.1	06			
07	286 39.7 -00.3	S	23 02.5 +00.1	237 54.3 -00.5	S	21 21.8 -00.7	163 21.6 -30.7	N	11 14.1 +16.0	07			
08	301 39.4 -00.3	S	23 02.6 +00.2	252 53.8 -00.5	S	21 21.1 -00.8	177 50.9 -30.7	N	11 30.1 +16.0	08			
09	316 39.1 -00.3	S	23 02.8 +00.2	267 53.3 -00.5	S	21 20.3 -00.7	192 20.2 -30.8	N	11 46.1 +15.9	09			
10	331 38.8 -00.3	S	23 03.0 +00.2	282 52.8 -00.5	S	21 19.6 -00.8	206 49.4 -30.9	N	12 02.0 +15.9	10			
11	346 38.5 -00.3	S	23 03.2 +00.2	297 52.3 -00.5	S	21 18.8 -00.7	221 18.5 -31.0	N	12 17.9 +15.8	11			
12	1 38.2 -00.3	S	23 03.4 +00.2	312 51.8 -00.5	S	21 18.1 -00.8	235 47.5 -31.0	N	12 33.7 +15.7	12			
13	16 37.9 -00.3	S	23 03.6 +00.2	327 51.3 -00.5	S	21 17.3 -00.7	250 16.5 -31.1	N	12 49.4 +15.7	13			
14	31 37.6 -00.3	S	23 03.8 +00.2	342 50.8 -00.5	S	21 16.6 -00.8	264 45.4 -31.2	N	13 05.1 +15.6	14			
15	46 37.3 -00.2	S	23 04.0 +00.2	357 50.3 -00.5	S	21 15.8 -00.7	279 14.2 -31.3	N	13 20.7 +15.5	15			
16	61 37.1 -00.3	S	23 04.2 +00.2	12 49.8 -00.5	S	21 15.1 -00.8	293 42.9 -31.3	N	13 36.2 +15.4	16			
17	76 36.8 -00.3	S	23 04.4 +00.2	27 49.3 -00.5	S	21 14.3 -00.8	308 11.6 -31.5	N	13 51.6 +15.4	17			
18	91 36.5 -00.3	S	23 04.6 +00.1	42 48.8 -00.5	S	21 13.5 -00.7	322 40.1 -31.5	N	14 07.0 +15.3	18			
19	106 36.2 -00.3	S	23 04.7 +00.2	57 48.3 -00.5	S	21 12.8 -00.8	337 08.6 -31.7	N	14 22.3 +15.3	19			
20	121 35.9 -00.3	S	23 04.9 +00.2	72 47.8 -00.5	S	21 12.0 -00.7	351 36.9 -31.7	N	14 37.6 +15.1	20			
21	136 35.6 -00.3	S	23 05.1 +00.2	87 47.3 -00.5	S	21 11.3 -00.8	6 05.2 -31.8	N	14 52.7 +15.1	21			
22	151 35.3 -00.3	S	23 05.3 +00.2	102 46.8 -00.5	S	21 10.5 -00.8	20 33.4 -31.9	N	15 07.8 +15.0	22			
23	166 35.0 -00.3	S	23 05.5 +00.2	117 46.3 -00.5	S	21 09.7 -00.7	35 01.5 -31.9	N	15 22.8 +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 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'2 00'2 00'2 00'2 00'2 00'2			SD 16'3 16'3 16'3 16'3 16'3 16'3						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 59'8 59'8 59'9 59'9 59'9 59'9						
	SHA 101° 101° 101° 101° 101° 100°			SHA 053° 052° 052° 052° 052° 052°			SHA 341° 338° 336° 334° 332° 329°						
	Greenwich Culmination Time: 11:53			Greenwich Culmination Time: 15:08			Greenwich Culmination Time: 20:34						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	310 57.7 +02.6	N	21 40.1 +00.2	5 30.7 +02.8	N	22 01.6 -00.1	94 50.6 +02.4	S	08 27.2 +00.0	00			
01	326 00.3 +02.6	N	21 40.3 +00.1	20 33.5 +02.8	N	22 01.5 +00.0	109 53.0 +02.3	S	08 27.2 -00.1	01			
02	341 02.9 +02.6	N	21 40.4 +00.1	35 36.3 +02.8	N	22 01.5 +00.0	124 55.3 +02.4	S	08 27.1 +00.0	02			
03	356 05.5 +02.5	N	21 40.5 +00.2	50 39.1 +02.9	N	22 01.5 -00.1	139 57.7 +02.3	S	08 27.1 -00.1	03			
04	11 08.0 +02.6	N	21 40.7 +00.1	65 42.0 +02.8	N	22 01.4 +00.0	155 00.0 +02.4	S	08 27.0 +00.0	04			
05	26 10.6 +02.6	N	21 40.8 +00.2	80 44.8 +02.8	N	22 01.4 +00.0	170 02.4 +02.4	S	08 27.0 -00.1	05			
06	41 13.2 +02.6	N	21 41.0 +00.1	95 47.6 +02.9	N	22 01.4 +00.0	185 04.8 +02.3	S	08 26.9 +00.0	06			
07	56 15.8 +02.6	N	21 41.1 +00.2	110 50.5 +02.8	N	22 01.4 -00.1	200 07.1 +02.4	S	08 26.9 -00.1	07			
08	71 18.4 +02.6	N	21 41.3 +00.1	125 53.3 +02.8	N	22 01.3 +00.0	215 09.5 +02.4	S	08 26.8 +00.0	08			
09	86 21.0 +02.6	N	21 41.4 +00.2	140 56.1 +02.8	N	22 01.3 +00.0	230 11.9 +02.3	S	08 26.8 -00.1	09			
10	101 23.6 +02.5	N	21 41.6 +00.1	155 58.9 +02.9	N	22 01.3 -00.1	245 14.2 +02.4	S	08 26.7 +00.0	10			
11	116 26.1 +02.6	N	21 41.7 +00.2	171 01.8 +02.8	N	22 01.2 +00.0	260 16.6 +02.4	S	08 26.7 -00.1	11			
12	131 28.7 +02.6	N	21 41.9 +00.1	186 04.6 +02.8	N	22 01.2 +00.0	275 19.0 +02.3	S	08 26.6 +00.0	12			
13	146 31.3 +02.6	N	21 42.0 +00.2	201 07.4 +02.9	N	22 01.2 -00.1	290 21.3 +02.4	S	08 26.6 -00.1	13			
14	161 33.9 +02.6	N	21 42.2 +00.1	216 10.3 +02.8	N	22 01.1 +00.0	305 23.7 +02.3	S	08 26.5 +00.0	14			
15	176 36.5 +02.6	N	21 42.3 +00.2	231 13.1 +02.8	N	22 01.1 +00.0	320 26.0 +02.4	S	08 26.5 -00.1	15			
16	191 39.1 +02.6	N	21 42.5 +00.1	246 15.9 +02.8	N	22 01.1 +00.0	335 28.4 +02.4	S	08 26.4 +00.0	16			
17	206 41.7 +02.6	N	21 42.6 +00.2	261 18.7 +02.9	N	22 01.1 -00.1	350 30.8 +02.3	S	08 26.4 -00.1	17			
18	221 44.3 +02.6	N	21 42.8 +00.2	276 21.6 +02.8	N	22 01.0 +00.0	5 33.1 +02.4	S	08 26.3 +00.0	18			
19	236 46.9 +02.6	N	21 43.0 +00.1	291 24.4 +02.8	N	22 01.0 +00.0	20 35.5 +02.3	S	08 26.3 -00.1	19			
20	251 49.5 +02.6	N	21 43.1 +00.2	306 27.2 +02.9	N	22 01.0 -00.1	35 37.8 +02.4	S	08 26.2 +00.0	20			
21	266 52.1 +02.6	N	21 43.3 +00.1	321 30.1 +02.8	N	22 00.9 +00.0	50 40.2 +02.4	S	08 26.2 -00.1	21			
22	281 54.7 +02.6	N	21 43.4 +00.2	336 32.9 +02.8	N	22 00.9 +00.0	65 42.6 +02.3	S	08 26.1 +00.0	22			
23	296 57.3 +02.7	N	21 43.6 +00.1	351 35.7 +02.8	N	22 00.9 +00.0	80 44.9 +02.4	S	08 26.1 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 231° 231° 231° 231° 231° 231°			SHA 285° 285° 285° 285° 285° 285°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 03:15			Greenwich Culmination Time: 23:33			Greenwich Culmination Time: 17:37						



UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	181 34.7 -00.3	S	23 05.7 +00.1	132 45.8 -00.5	S	21 09.0 -00.8	49 29.6 -32.1	N	15 37.7 +14.8	00			
01	196 34.4 -00.3	S	23 05.8 +00.2	147 45.3 -00.4	S	21 08.2 -00.7	63 57.5 -32.2	N	15 52.5 +14.7	01			
02	211 34.1 -00.2	S	23 06.0 +00.2	162 44.9 -00.5	S	21 07.5 -00.8	78 25.3 -32.2	N	16 07.2 +14.6	02			
03	226 33.9 -00.3	S	23 06.2 +00.2	177 44.4 -00.5	S	21 06.7 -00.8	92 53.1 -32.4	N	16 21.8 +14.6	03			
04	241 33.6 -00.3	S	23 06.4 +00.2	192 43.9 -00.5	S	21 05.9 -00.7	107 20.7 -32.4	N	16 36.4 +14.4	04			
05	256 33.3 -00.3	S	23 06.6 +00.1	207 43.4 -00.5	S	21 05.2 -00.8	121 48.3 -32.5	N	16 50.8 +14.4	05			
06	271 33.0 -00.3	S	23 06.7 +00.2	222 42.9 -00.5	S	21 04.4 -00.8	136 15.8 -32.7	N	17 05.2 +14.2	06			
07	286 32.7 -00.3	S	23 06.9 +00.2	237 42.4 -00.5	S	21 03.6 -00.8	150 43.1 -32.7	N	17 19.4 +14.2	07			
08	301 32.4 -00.3	S	23 07.1 +00.2	252 41.9 -00.5	S	21 02.8 -00.7	165 10.4 -32.8	N	17 33.6 +14.0	08			
09	316 32.1 -00.3	S	23 07.3 +00.1	267 41.4 -00.4	S	21 02.1 -00.8	179 37.6 -33.0	N	17 47.6 +14.0	09			
10	331 31.8 -00.3	S	23 07.4 +00.2	282 41.0 -00.5	S	21 01.3 -00.8	194 04.6 -33.0	N	18 01.6 +13.8	10			
11	346 31.5 -00.3	S	23 07.6 +00.2	297 40.5 -00.5	S	21 00.5 -00.7	208 31.6 -33.1	N	18 15.4 +13.7	11			
12	1 31.2 -00.3	S	23 07.8 +00.2	312 40.0 -00.5	S	20 59.8 -00.8	222 58.5 -33.2	N	18 29.1 +13.6	12			
13	16 30.9 -00.3	S	23 08.0 +00.1	327 39.5 -00.5	S	20 59.0 -00.8	237 25.3 -33.3	N	18 42.7 +13.6	13			
14	31 30.6 -00.3	S	23 08.1 +00.2	342 39.0 -00.4	S	20 58.2 -00.8	251 52.0 -33.4	N	18 56.3 +13.3	14			
15	46 30.3 -00.2	S	23 08.3 +00.2	357 38.6 -00.5	S	20 57.4 -00.7	266 18.6 -33.5	N	19 09.6 +13.3	15			
16	61 30.1 -00.3	S	23 08.5 +00.1	12 38.1 -00.5	S	20 56.7 -00.8	280 45.1 -33.6	N	19 22.9 +13.2	16			
17	76 29.8 -00.3	S	23 08.6 +00.2	27 37.6 -00.5	S	20 55.9 -00.8	295 11.5 -33.8	N	19 36.1 +13.0	17			
18	91 29.5 -00.3	S	23 08.8 +00.2	42 37.1 -00.5	S	20 55.1 -00.8	309 37.7 -33.8	N	19 49.1 +12.9	18			
19	106 29.2 -00.3	S	23 09.0 +00.2	57 36.6 -00.4	S	20 54.3 -00.8	324 03.9 -33.9	N	20 02.0 +12.8	19			
20	121 28.9 -00.3	S	23 09.2 +00.1	72 36.2 -00.5	S	20 53.5 -00.7	338 30.0 -34.0	N	20 14.8 +12.7	20			
21	136 28.6 -00.3	S	23 09.3 +00.2	87 35.7 -00.5	S	20 52.8 -00.8	352 56.0 -34.1	N	20 27.5 +12.5	21			
22	151 28.3 -00.3	S	23 09.5 +00.1	102 35.2 -00.4	S	20 52.0 -00.8	7 21.9 -34.2	N	20 40.0 +12.5	22			
23	166 28.0 -00.3	S	23 09.6 +00.2	117 34.8 -00.5	S	20 51.2 -00.8	21 47.7 -34.3	N	20 52.5 +12.2	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'2 16'2 16'2 16'2 16'2 16'2			SD 00'2 00'2 00'2 00'2 00'2 00'2			SD 16'3 16'3 16'3 16'3 16'3 16'3						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 60'0 60'0 60'0 60'0 60'0 60'0						
	SHA 100° 100° 100° 100° 100° 099°			SHA 051° 051° 051° 051° 051° 050°			SHA 327° 325° 322° 320° 318° 315°						
	Greenwich Culmination Time: 11:53			Greenwich Culmination Time: 15:09			Greenwich Culmination Time: 21:29						

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	311 60.0 +02.6	N	21 43.7 +00.2	6 38.5 +02.9	N	22 00.9 -00.1	95 47.3 +02.3	S	08 26.0 +00.0	00			
01	327 02.6 +02.6	N	21 43.9 +00.1	21 41.4 +02.8	N	22 00.8 +00.0	110 49.6 +02.4	S	08 26.0 -00.1	01			
02	342 05.2 +02.6	N	21 44.0 +00.2	36 44.2 +02.8	N	22 00.8 +00.0	125 52.0 +02.4	S	08 25.9 +00.0	02			
03	357 07.8 +02.6	N	21 44.2 +00.1	51 47.0 +02.8	N	22 00.8 -00.1	140 54.4 +02.3	S	08 25.9 -00.1	03			
04	12 10.4 +02.6	N	21 44.3 +00.2	66 49.8 +02.9	N	22 00.7 +00.0	155 56.7 +02.4	S	08 25.8 +00.0	04			
05	27 13.0 +02.6	N	21 44.5 +00.2	81 52.7 +02.8	N	22 00.7 +00.0	170 59.1 +02.3	S	08 25.8 -00.1	05			
06	42 15.6 +02.7	N	21 44.7 +00.1	96 55.5 +02.8	N	22 00.7 -00.1	186 01.4 +02.4	S	08 25.7 +00.0	06			
07	57 18.3 +02.6	N	21 44.8 +00.2	111 58.3 +02.9	N	22 00.6 +00.0	201 03.8 +02.4	S	08 25.7 -00.1	07			
08	72 20.9 +02.6	N	21 45.0 +00.1	127 01.2 +02.8	N	22 00.6 +00.0	216 06.2 +02.3	S	08 25.6 +00.0	08			
09	87 23.5 +02.6	N	21 45.1 +00.2	142 04.0 +02.8	N	22 00.6 +00.0	231 08.5 +02.4	S	08 25.6 -00.1	09			
10	102 26.1 +02.7	N	21 45.3 +00.1	157 06.8 +02.8	N	22 00.6 -00.1	246 10.9 +02.3	S	08 25.5 +00.0	10			
11	117 28.8 +02.6	N	21 45.4 +00.2	172 09.6 +02.9	N	22 00.5 +00.0	261 13.2 +02.4	S	08 25.5 -00.1	11			
12	132 31.4 +02.6	N	21 45.6 +00.2	187 12.5 +02.8	N	22 00.5 +00.0	276 15.6 +02.4	S	08 25.4 +00.0	12			
13	147 34.0 +02.6	N	21 45.8 +00.1	202 15.3 +02.8	N	22 00.5 -00.1	291 18.0 +02.3	S	08 25.4 -00.1	13			
14	162 36.6 +02.7	N	21 45.9 +00.2	217 18.1 +02.8	N	22 00.4 +00.0	306 20.3 +02.4	S	08 25.3 +00.0	14			
15	177 39.3 +02.6	N	21 46.1 +00.1	232 20.9 +02.9	N	22 00.4 +00.0	321 22.7 +02.3	S	08 25.3 -00.1	15			
16	192 41.9 +02.6	N	21 46.2 +00.2	247 23.8 +02.8	N	22 00.4 -00.1	336 25.0 +02.4	S	08 25.2 +00.0	16			
17	207 44.5 +02.7	N	21 46.4 +00.2	262 26.6 +02.8	N	22 00.3 +00.0	351 27.4 +02.3	S	08 25.2 -00.1	17			
18	222 47.2 +02.6	N	21 46.6 +00.1	277 29.4 +02.8	N	22 00.3 +00.0	6 29.7 +02.4	S	08 25.1 +00.0	18			
19	237 49.8 +02.7	N	21 46.7 +00.2	292 32.2 +02.9	N	22 00.3 +00.0	21 32.1 +02.4	S	08 25.1 -00.1	19			
20	252 52.5 +02.6	N	21 46.9 +00.2	307 35.1 +02.8	N	22 00.3 -00.1	36 34.5 +02.3	S	08 25.0 +00.0	20			
21	267 55.1 +02.6	N	21 47.1 +00.1	322 37.9 +02.8	N	22 00.2 +00.0	51 36.8 +02.4	S	08 25.0 -00.1	21			
22	282 57.7 +02.7	N	21 47.2 +00.2	337 40.7 +02.9	N	22 00.2 +00.0	66 39.2 +02.3	S	08 24.9 +00.0	22			
23	298 00.4 +02.6	N	21 47.4 +00.1	352 43.6 +02.8	N	22 00.2 -00.1	81 41.5 +02.4	S	08 24.9 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 231° 231° 231° 231° 231° 231°			SHA 285° 285° 286° 286° 286° 286°			SHA 015° 015° 015° 015° 015° 015°						
	Greenwich Culmination Time: 03:11			Greenwich Culmination Time: 23:29			Greenwich Culmination Time: 17:34						

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 27.7 -00.3	S	23 09.8 +00.2	132 34.3 -00.5	S	20 50.4 -00.8	36 13.4 -34.4	N	21 04.7 +12.2	00										
01	196 27.4 -00.3	S	23 10.0 +00.1	147 33.8 -00.5	S	20 49.6 -00.8	50 39.0 -34.5	N	21 16.9 +12.0	01										
02	211 27.1 -00.3	S	23 10.1 +00.2	162 33.3 -00.4	S	20 48.8 -00.8	65 04.5 -34.6	N	21 28.9 +11.9	02										
03	226 26.8 -00.3	S	23 10.3 +00.2	177 32.9 -00.5	S	20 48.0 -00.7	79 29.9 -34.7	N	21 40.8 +11.7	03										
04	241 26.5 -00.3	S	23 10.5 +00.1	192 32.4 -00.5	S	20 47.3 -00.8	93 55.2 -34.8	N	21 52.5 +11.6	04										
05	256 26.2 -00.3	S	23 10.6 +00.2	207 31.9 -00.4	S	20 46.5 -00.8	108 20.4 -34.9	N	22 04.1 +11.4	05										
06	271 25.9 -00.3	S	23 10.8 +00.1	222 31.5 -00.5	S	20 45.7 -00.8	122 45.5 -35.0	N	22 15.5 +11.4	06										
07	286 25.6 -00.3	S	23 10.9 +00.2	237 31.0 -00.5	S	20 44.9 -00.8	137 10.5 -35.1	N	22 26.9 +11.1	07										
08	301 25.3 -00.2	S	23 11.1 +00.1	252 30.5 -00.4	S	20 44.1 -00.8	151 35.4 -35.1	N	22 38.0 +11.0	08										
09	316 25.1 -00.3	S	23 11.2 +00.2	267 30.1 -00.5	S	20 43.3 -00.8	166 00.3 -35.3	N	22 49.0 +10.9	09										
10	331 24.8 -00.3	S	23 11.4 +00.2	282 29.6 -00.5	S	20 42.5 -00.8	180 25.0 -35.4	N	22 59.9 +10.7	10										
11	346 24.5 -00.3	S	23 11.6 +00.1	297 29.1 -00.4	S	20 41.7 -00.8	194 49.6 -35.4	N	23 10.6 +10.6	11										
12	1 24.2 -00.3	S	23 11.7 +00.2	312 28.7 -00.5	S	20 40.9 -00.8	209 14.2 -35.6	N	23 21.2 +10.4	12										
13	16 23.9 -00.3	S	23 11.9 +00.1	327 28.2 -00.4	S	20 40.1 -00.8	223 38.6 -35.6	N	23 31.6 +10.2	13										
14	31 23.6 -00.3	S	23 12.0 +00.2	342 27.8 -00.5	S	20 39.3 -00.8	238 03.0 -35.8	N	23 41.8 +10.1	14										
15	46 23.3 -00.3	S	23 12.2 +00.1	357 27.3 -00.5	S	20 38.5 -00.8	252 27.2 -35.8	N	23 51.9 +09.9	15										
16	61 23.0 -00.3	S	23 12.3 +00.2	12 26.8 -00.4	S	20 37.7 -00.8	266 51.4 -35.9	N	24 01.8 +09.8	16										
17	76 22.7 -00.3	S	23 12.5 +00.1	27 26.4 -00.5	S	20 36.9 -00.8	281 15.5 -36.0	N	24 11.6 +09.6	17										
18	91 22.4 -00.3	S	23 12.6 +00.2	42 25.9 -00.4	S	20 36.1 -00.8	295 39.5 -36.1	N	24 21.2 +09.4	18										
19	106 22.1 -00.3	S	23 12.8 +00.1	57 25.5 -00.5	S	20 35.3 -00.8	310 03.4 -36.1	N	24 30.6 +09.3	19										
20	121 21.8 -00.3	S	23 12.9 +00.2	72 25.0 -00.4	S	20 34.5 -00.8	324 27.3 -36.3	N	24 39.9 +09.1	20										
21	136 21.5 -00.3	S	23 13.1 +00.1	87 24.6 -00.5	S	20 33.7 -00.8	338 51.0 -36.3	N	24 49.0 +08.9	21										
22	151 21.2 -00.3	S	23 13.2 +00.1	102 24.1 -00.5	S	20 32.9 -00.8	353 14.7 -36.4	N	24 57.9 +08.8	22										
23	166 20.9 -00.3	S	23 13.3 +00.2	117 23.6 -00.4	S	20 32.1 -00.8	7 38.3 -36.5	N	25 06.7 +08.5	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	16'2	16'2	16'2	16'2	16'2	16'2	SD	00'2	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	099°	099°	099°	099°	098°	098°	SHA	050°	050°	050°	050°	049°	049°	SHA						
Greenwich Culmination Time: 11:54							Greenwich Culmination Time: 15:10							Greenwich Culmination Time: 22:28						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT							
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec								
00	313 03.0 +02.7	N	21 47.5 +00.2	7 46.4 +02.8	N	22 00.1 +00.0	96 43.9 +02.3	S	08 24.8 +00.0	00										
01	328 05.7 +02.6	N	21 47.7 +00.2	22 49.2 +02.8	N	22 00.1 +00.0	111 46.2 +02.4	S	08 24.8 -00.1	01										
02	343 08.3 +02.7	N	21 47.9 +00.1	37 52.0 +02.9	N	22 00.1 +00.0	126 48.6 +02.4	S	08 24.7 +00.0	02										
03	358 11.0 +02.6	N	21 48.0 +00.2	52 54.9 +02.8	N	22 00.1 -00.1	141 51.0 +02.3	S	08 24.7 -00.1	03										
04	13 13.6 +02.7	N	21 48.2 +00.2	67 57.7 +02.8	N	22 00.0 +00.0	156 53.3 +02.4	S	08 24.6 +00.0	04										
05	28 16.3 +02.6	N	21 48.4 +00.1	83 00.5 +02.8	N	21 60.0 +00.0	171 55.7 +02.3	S	08 24.6 -00.1	05										
06	43 18.9 +02.7	N	21 48.5 +00.2	98 03.3 +02.9	N	21 60.0 -00.1	186 58.0 +02.4	S	08 24.5 +00.0	06										
07	58 21.6 +02.7	N	21 48.7 +00.2	113 06.2 +02.8	N	21 59.9 +00.0	202 00.4 +02.3	S	08 24.5 -00.1	07										
08	73 24.3 +02.6	N	21 48.9 +00.1	128 09.0 +02.8	N	21 59.9 +00.0	217 02.7 +02.4	S	08 24.4 -00.1	08										
09	88 26.9 +02.7	N	21 49.0 +00.2	143 11.8 +02.8	N	21 59.9 -00.1	232 05.1 +02.3	S	08 24.3 +00.0	09										
10	103 29.6 +02.6	N	21 49.2 +00.2	158 14.6 +02.9	N	21 59.8 +00.0	247 07.4 +02.4	S	08 24.3 -00.1	10										
11	118 32.2 +02.7	N	21 49.4 +00.1	173 17.5 +02.8	N	21 59.8 +00.0	262 09.8 +02.4	S	08 24.2 +00.0	11										
12	133 34.9 +02.7	N	21 49.5 +00.2	188 20.3 +02.8	N	21 59.8 +00.0	277 12.2 +02.3	S	08 24.2 -00.1	12										
13	148 37.6 +02.6	N	21 49.7 +00.2	203 23.1 +02.8	N	21 59.8 -00.1	292 14.5 +02.4	S	08 24.1 +00.0	13										
14	163 40.2 +02.7	N	21 49.9 +00.1	218 25.9 +02.9	N	21 59.7 +00.0	307 16.9 +02.3	S	08 24.1 -00.1	14										
15	178 42.9 +02.7	N	21 50.0 +00.2	233 28.8 +02.8	N	21 59.7 +00.0	322 19.2 +02.4	S	08 24.0 +00.0	15										
16	193 45.6 +02.6	N	21 50.2 +00.2	248 31.6 +02.8	N	21 59.7 -00.1	337 21.6 +02.3	S	08 24.0 -00.1	16										
17	208 48.2 +02.7	N	21 50.4 +00.1	263 34.4 +02.8	N	21 59.6 +00.0	352 23.9 +02.4	S	08 23.9 +00.0	17										
18	223 50.9 +02.7	N	21 50.5 +00.2	278 37.2 +02.9	N	21 59.6 +00.0	7 26.3 +02.3	S	08 23.9 -00.1	18										
19	238 53.6 +02.7	N	21 50.7 +00.2	293 40.1 +02.8	N	21 59.6 -00.1	22 28.6 +02.4	S	08 23.8 +00.0	19										
20	253 56.3 +02.6	N	21 50.9 +00.2	308 42.9 +02.8	N	21 59.5 +00.0	37 31.0 +02.3	S	08 23.8 -00.1	20										
21	268 58.9 +02.7	N	21 51.1 +00.1	323 45.7 +02.8	N	21 59.5 +00.0	52 33.3 +02.4	S	08 23.7 +00.0	21										
22	284 01.6 +02.7	N	21 51.2 +00.2	338 48.5 +02.9	N	21 59.5 +00.0	67 35.7 +02.4	S	08 23.7 -00.1	22										
23	299 04.3 +02.7	N	21 51.4 +00.2	353 51.4 +02.8	N	21 59.5 -00.1	82 38.1 +02.3	S	08 23.6 +00.0	23										
UT	02	06	10	14	18	22	UT	02	06	10	14	18	22	UT						
SD	00'1	00'1	00'1	00'1	00'1	00'1	SD	00'4	00'4	00'4	00'4	00'4	00'4	SD						
HP	00'2	00'2	00'2	00'2	00'2	00'2	HP	00'0	00'0	00'0	00'0	00'0	00'0	HP						
SHA	231°	231°	231°	231°	231°	231°	SHA	286°	286°	286°	286°	286°	286°	SHA						
Greenwich Culmination Time: 03:07							Greenwich Culmination Time: 23:24							Greenwich Culmination Time: 17:30						

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!

<b>Sun</b>					<b>Venus</b>					<b>Moon</b>					A: 46%				
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT						
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "							
00	181	20.6	-00.3	S 23	13.5	+00.1	132	23.2	-00.5	S 20	31.3	-00.8	22	01.8	-36.6	N 25	15.2	+08.5	00
01	196	20.3	-00.3	S 23	13.6	+00.2	147	22.7	-00.4	S 20	30.5	-00.8	36	25.2	-36.6	N 25	23.7	+08.2	01
02	211	20.0	-00.3	S 23	13.8	+00.1	162	22.3	-00.5	S 20	29.7	-00.8	50	48.6	-36.7	N 25	31.9	+08.1	02
03	226	19.7	-00.3	S 23	13.9	+00.2	177	21.8	-00.4	S 20	28.9	-00.8	65	11.9	-36.8	N 25	40.0	+07.8	03
04	241	19.4	-00.3	S 23	14.1	+00.1	192	21.4	-00.5	S 20	28.1	-00.8	79	35.1	-36.9	N 25	47.8	+07.7	04
05	256	19.1	-00.3	S 23	14.2	+00.1	207	20.9	-00.4	S 20	27.3	-00.8	93	58.2	-36.9	N 25	55.5	+07.6	05
06	271	18.8	-00.3	S 23	14.3	+00.2	222	20.5	-00.4	S 20	26.5	-00.8	108	21.3	-37.0	N 26	03.1	+07.3	06
07	286	18.5	-00.3	S 23	14.5	+00.1	237	20.1	-00.5	S 20	25.7	-00.9	122	44.3	-37.0	N 26	10.4	+07.1	07
08	301	18.2	-00.3	S 23	14.6	+00.2	252	19.6	-00.4	S 20	24.8	-00.8	137	07.3	-37.2	N 26	17.5	+07.0	08
09	316	17.9	-00.3	S 23	14.8	+00.1	267	19.2	-00.5	S 20	24.0	-00.8	151	30.1	-37.1	N 26	24.5	+06.8	09
10	331	17.6	-00.3	S 23	14.9	+00.1	282	18.7	-00.4	S 20	23.2	-00.8	165	53.0	-37.3	N 26	31.3	+06.6	10
11	346	17.3	-00.3	S 23	15.0	+00.2	297	18.3	-00.5	S 20	22.4	-00.8	180	15.7	-37.2	N 26	37.9	+06.4	11
12	1	17.0	-00.3	S 23	15.2	+00.1	312	17.8	-00.4	S 20	21.6	-00.8	194	38.5	-37.4	N 26	44.3	+06.2	12
13	16	16.7	-00.3	S 23	15.3	+00.1	327	17.4	-00.4	S 20	20.8	-00.9	209	01.1	-37.4	N 26	50.5	+06.1	13
14	31	16.4	-00.3	S 23	15.4	+00.2	342	17.0	-00.5	S 20	19.9	-00.8	223	23.7	-37.4	N 26	56.6	+05.8	14
15	46	16.1	-00.3	S 23	15.6	+00.1	357	16.5	-00.4	S 20	19.1	-00.8	237	46.3	-37.5	N 27	02.4	+05.6	15
16	61	15.8	-00.3	S 23	15.7	+00.1	12	16.1	-00.5	S 20	18.3	-00.8	252	08.8	-37.5	N 27	08.0	+05.5	16
17	76	15.5	-00.3	S 23	15.8	+00.2	27	15.6	-00.4	S 20	17.5	-00.8	266	31.3	-37.5	N 27	13.5	+05.3	17
18	91	15.2	-00.3	S 23	16.0	+00.1	42	15.2	-00.4	S 20	16.7	-00.9	280	53.8	-37.6	N 27	18.8	+05.0	18
19	106	14.9	-00.3	S 23	16.1	+00.1	57	14.8	-00.5	S 20	15.8	-00.8	295	16.2	-37.7	N 27	23.8	+04.9	19
20	121	14.6	-00.3	S 23	16.2	+00.1	72	14.3	-00.4	S 20	15.0	-00.8	309	38.5	-37.6	N 27	28.7	+04.7	20
21	136	14.3	-00.3	S 23	16.3	+00.2	87	13.9	-00.4	S 20	14.2	-00.8	324	00.9	-37.7	N 27	33.4	+04.5	21
22	151	14.0	-00.3	S 23	16.5	+00.1	102	13.5	-00.5	S 20	13.4	-00.8	338	23.2	-37.8	N 27	37.9	+04.3	22
23	166	13.7	-00.3	S 23	16.6	+00.1	117	13.0	-00.4	S 20	12.6	-00.9	352	45.4	-37.7	N 27	42.2	+04.1	23
UT 02 06 10 14 18 22					UT 02 06 10 14 18 22					UT 02 06 10 14 18 22									
SD 16'2 16'2 16'2 16'2 16'2 16'3					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 59'6 59'5 59'4									
SHA 098° 098° 098° 098° 097° 097°					SHA 049° 049° 049° 049° 048° 048°					SHA 298° 295° 292° 290° 287° 284°									
Greenwich Culmination Time: 11:54					Greenwich Culmination Time: 15:10					Greenwich Culmination Time: 23:30									

  

<b>Mars</b>					<b>Jupiter</b>					<b>Saturn</b>									
UT	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	UT						
	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "	° ' "	' "							
00	314	07.0	+02.7	N 21	51.6	+00.1	8	54.2	+02.8	N 21	59.4	+00.0	97	40.4	+02.4	S 08	23.6	-00.1	00
01	329	09.7	+02.7	N 21	51.7	+00.2	23	57.0	+02.8	N 21	59.4	+00.0	112	42.8	+02.3	S 08	23.5	-00.1	01
02	344	12.4	+02.6	N 21	51.9	+00.2	38	59.8	+02.9	N 21	59.4	-00.1	127	45.1	+02.4	S 08	23.4	+00.0	02
03	359	15.0	+02.7	N 21	52.1	+00.2	54	02.7	+02.8	N 21	59.3	+00.0	142	47.5	+02.3	S 08	23.4	-00.1	03
04	14	17.7	+02.7	N 21	52.3	+00.1	69	05.5	+02.8	N 21	59.3	+00.0	157	49.8	+02.4	S 08	23.3	+00.0	04
05	29	20.4	+02.7	N 21	52.4	+00.2	84	08.3	+02.8	N 21	59.3	-00.1	172	52.2	+02.3	S 08	23.3	-00.1	05
06	44	23.1	+02.7	N 21	52.6	+00.2	99	11.1	+02.8	N 21	59.2	+00.0	187	54.5	+02.4	S 08	23.2	+00.0	06
07	59	25.8	+02.7	N 21	52.8	+00.2	114	13.9	+02.9	N 21	59.2	+00.0	202	56.9	+02.3	S 08	23.2	-00.1	07
08	74	28.5	+02.7	N 21	53.0	+00.1	129	16.8	+02.8	N 21	59.2	+00.0	217	59.2	+02.4	S 08	23.1	+00.0	08
09	89	31.2	+02.7	N 21	53.1	+00.2	144	19.6	+02.8	N 21	59.2	-00.1	233	01.6	+02.3	S 08	23.1	-00.1	09
10	104	33.9	+02.7	N 21	53.3	+00.2	159	22.4	+02.8	N 21	59.1	+00.0	248	03.9	+02.4	S 08	23.0	+00.0	10
11	119	36.6	+02.7	N 21	53.5	+00.2	174	25.2	+02.9	N 21	59.1	+00.0	263	06.3	+02.3	S 08	23.0	-00.1	11
12	134	39.3	+02.7	N 21	53.7	+00.1	189	28.1	+02.8	N 21	59.1	-00.1	278	08.6	+02.4	S 08	22.9	+00.0	12
13	149	42.0	+02.7	N 21	53.8	+00.2	204	30.9	+02.8	N 21	59.0	+00.0	293	11.0	+02.3	S 08	22.9	-00.1	13
14	164	44.7	+02.7	N 21	54.0	+00.2	219	33.7	+02.8	N 21	59.0	+00.0	308	13.3	+02.4	S 08	22.8	-00.1	14
15	179	47.4	+02.7	N 21	54.2	+00.2	234	36.5	+02.9	N 21	59.0	-00.1	323	15.7	+02.3	S 08	22.7	+00.0	15
16	194	50.1	+02.7	N 21	54.4	+00.1	249	39.4	+02.8	N 21	58.9	+00.0	338	18.0	+02.4	S 08	22.7	-00.1	16
17	209	52.8	+02.7	N 21	54.5	+00.2	264	42.2	+02.8	N 21	58.9	+00.0	353	20.4	+02.3	S 08	22.6	+00.0	17
18	224	55.5	+02.7	N 21	54.7	+00.2	279	45.0	+02.8	N 21	58.9	+00.0	8	22.7	+02.4	S 08	22.6	-00.1	18
19	239	58.2	+02.7	N 21	54.9	+00.2	294	47.8	+02.9	N 21	58.9	-00.1	23	25.1	+02.3	S 08	22.5	+00.0	19
20	255	00.9	+02.8	N 21	55.1	+00.2	309	50.7	+02.8	N 21	58.8	+00.0	38	27.4	+02.4	S 08	22.5	-00.1	20
21	270	03.7	+02.7	N 21	55.3	+00.1	324	53.5	+02.8	N 21	58.8	+00.0	53	29.8	+02.3	S 08	22.4	+00.0	21
22	285	06.4	+02.7	N 21	55.4	+00.2	339	56.3	+02.8	N 21	58.8	-00.1	68	32.1	+02.4	S 08	22.4	-00.1	22
23	300	09.1	+02.7	N 21	55.6	+00.2	354	59.1	+02.8	N 21	58.7	+00.0	83	34.5	+02.3	S 08	22.3	+00.0	23
UT 02 06 10 14 18 22					UT 02 06 10 14 18 22					UT 02 06 10 14 18 22									
SD 00'1 00'1 00'1 00'1 00'1 00'1					SD 00'4 00'4 00'4 00'4 00'4 00'4					SD 00'1 00'1 00'1 00'1 00'1 00'1									
HP 00'2 00'2 00'2 00'2 00'2 00'2					HP 00'0 00'0 00'0 00'0 00'0 00'0					HP 00'0 00'0 00'0 00'0 00'0 00'0									
SHA 231° 231° 231° 231° 231° 231°					SHA 286° 286° 286° 286° 286° 286°					SHA 015° 015° 014° 014° 014° 014°									
Greenwich Culmination Time: 03:02					Greenwich Culmination Time: 23:19					Greenwich Culmination Time: 17:26									

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	181	13.4 -00.3	S 23	16.7 +00.1	132	12.6 -00.4	S 20	11.7 -00.8	7	07.7 -37.8	N 27	46.3 +03.8	00
01	196	13.1 -00.3	S 23	16.8 +00.2	147	12.2 -00.5	S 20	10.9 -00.8	21	29.9 -37.8	N 27	50.1 +03.7	01
02	211	12.8 -00.3	S 23	17.0 +00.1	162	11.7 -00.4	S 20	10.1 -00.9	35	52.1 -37.8	N 27	53.8 +03.5	02
03	226	12.5 -00.3	S 23	17.1 +00.1	177	11.3 -00.4	S 20	09.2 -00.8	50	14.3 -37.8	N 27	57.3 +03.3	03
04	241	12.2 -00.3	S 23	17.2 +00.1	192	10.9 -00.4	S 20	08.4 -00.8	64	36.5 -37.8	N 28	00.6 +03.1	04
05	256	11.9 -00.3	S 23	17.3 +00.1	207	10.5 -00.5	S 20	07.6 -00.8	78	58.7 -37.9	N 28	03.7 +02.9	05
06	271	11.6 -00.3	S 23	17.4 +00.2	222	10.0 -00.4	S 20	06.8 -00.9	93	20.8 -37.8	N 28	06.6 +02.8	06
07	286	11.3 -00.3	S 23	17.6 +00.1	237	09.6 -00.4	S 20	05.9 -00.8	107	43.0 -37.8	N 28	09.4 +02.5	07
08	301	11.0 -00.3	S 23	17.7 +00.1	252	09.2 -00.5	S 20	05.1 -00.8	122	05.2 -37.9	N 28	11.9 +02.3	08
09	316	10.7 -00.3	S 23	17.8 +00.1	267	08.7 -00.4	S 20	04.3 -00.9	136	27.3 -37.8	N 28	14.2 +02.1	09
10	331	10.4 -00.3	S 23	17.9 +00.1	282	08.3 -00.4	S 20	03.4 -00.8	150	49.5 -37.8	N 28	16.3 +01.9	10
11	346	10.1 -00.3	S 23	18.0 +00.2	297	07.9 -00.4	S 20	02.6 -00.9	165	11.7 -37.9	N 28	18.2 +01.7	11
12	1	09.8 -00.3	S 23	18.2 +00.1	312	07.5 -00.4	S 20	01.7 -00.8	179	33.8 -37.8	N 28	19.9 +01.5	12
13	16	09.5 -00.3	S 23	18.3 +00.1	327	07.1 -00.5	S 20	00.9 -00.8	193	56.0 -37.8	N 28	21.4 +01.3	13
14	31	09.2 -00.3	S 23	18.4 +00.1	342	06.6 -00.4	S 20	00.1 -00.9	208	18.2 -37.7	N 28	22.7 +01.1	14
15	46	08.9 -00.3	S 23	18.5 +00.1	357	06.2 -00.4	S 19	59.2 -00.8	222	40.5 -37.8	N 28	23.8 +00.9	15
16	61	08.6 -00.3	S 23	18.6 +00.1	12	05.8 -00.4	S 19	58.4 -00.8	237	02.7 -37.7	N 28	24.7 +00.7	16
17	76	08.3 -00.3	S 23	18.7 +00.1	27	05.4 -00.4	S 19	57.6 -00.9	251	25.0 -37.7	N 28	25.4 +00.6	17
18	91	08.0 -00.3	S 23	18.8 +00.1	42	05.0 -00.4	S 19	56.7 -00.8	265	47.3 -37.7	N 28	26.0 +00.3	18
19	106	07.7 -00.3	S 23	18.9 +00.1	57	04.6 -00.5	S 19	55.9 -00.9	280	09.6 -37.6	N 28	26.3 +00.1	19
20	121	07.4 -00.3	S 23	19.0 +00.2	72	04.1 -00.4	S 19	55.0 -00.8	294	32.0 -37.6	N 28	26.4 -00.1	20
21	136	07.1 -00.3	S 23	19.2 +00.1	87	03.7 -00.4	S 19	54.2 -00.9	308	54.4 -37.6	N 28	26.3 -00.2	21
22	151	06.8 -00.3	S 23	19.3 +00.1	102	03.3 -00.4	S 19	53.3 -00.8	323	16.8 -37.5	N 28	26.1 -00.5	22
23	166	06.5 -00.3	S 23	19.4 +00.1	117	02.9 -00.4	S 19	52.5 -00.8	337	39.3 -37.4	N 28	25.6 -00.6	23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 16'3 16'3 16'3 16'3 16'3 16'3				SD 00'2 00'2 00'2 00'2 00'2 00'2				SD 16'2 16'1 16'1 16'1 16'1 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 59'3 59'2 59'1 59'0 58'9 58'8				
	SHA 097° 097° 097° 096° 096° 096°				SHA 048° 048° 048° 047° 047° 047°				SHA 282° 279° 276° 274° 271° 268°				
	Greenwich Culmination Time: 11:55				Greenwich Culmination Time: 15:11				Greenwich Culmination Time: -1:00				

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	315	11.8 +02.7	N 21	55.8 +00.2	10	01.9 +02.9	N 21	58.7 +00.0	98	36.8 +02.4	S 08	22.3 -00.1	00
01	330	14.5 +02.8	N 21	56.0 +00.2	25	04.8 +02.8	N 21	58.7 +00.0	113	39.2 +02.3	S 08	22.2 -00.1	01
02	345	17.3 +02.7	N 21	56.2 +00.1	40	07.6 +02.8	N 21	58.7 -00.1	128	41.5 +02.4	S 08	22.1 +00.0	02
03	0	20.0 +02.7	N 21	56.3 +00.2	55	10.4 +02.8	N 21	58.6 +00.0	143	43.9 +02.3	S 08	22.1 -00.1	03
04	15	22.7 +02.7	N 21	56.5 +00.2	70	13.2 +02.9	N 21	58.6 +00.0	158	46.2 +02.4	S 08	22.0 +00.0	04
05	30	25.4 +02.8	N 21	56.7 +00.2	85	16.1 +02.8	N 21	58.6 -00.1	173	48.6 +02.3	S 08	22.0 -00.1	05
06	45	28.2 +02.7	N 21	56.9 +00.2	100	18.9 +02.8	N 21	58.5 +00.0	188	50.9 +02.4	S 08	21.9 +00.0	06
07	60	30.9 +02.7	N 21	57.1 +00.2	115	21.7 +02.8	N 21	58.5 +00.0	203	53.3 +02.3	S 08	21.9 -00.1	07
08	75	33.6 +02.7	N 21	57.3 +00.1	130	24.5 +02.8	N 21	58.5 -00.1	218	55.6 +02.4	S 08	21.8 +00.0	08
09	90	36.3 +02.8	N 21	57.4 +00.2	145	27.3 +02.9	N 21	58.4 +00.0	233	58.0 +02.3	S 08	21.8 -00.1	09
10	105	39.1 +02.7	N 21	57.6 +00.2	160	30.2 +02.8	N 21	58.4 +00.0	249	00.3 +02.4	S 08	21.7 +00.0	10
11	120	41.8 +02.8	N 21	57.8 +00.2	175	33.0 +02.8	N 21	58.4 +00.0	264	02.7 +02.3	S 08	21.7 -00.1	11
12	135	44.6 +02.7	N 21	58.0 +00.2	190	35.8 +02.8	N 21	58.4 -00.1	279	05.0 +02.4	S 08	21.6 -00.1	12
13	150	47.3 +02.7	N 21	58.2 +00.2	205	38.6 +02.8	N 21	58.3 +00.0	294	07.4 +02.3	S 08	21.5 +00.0	13
14	165	50.0 +02.8	N 21	58.4 +00.1	220	41.4 +02.9	N 21	58.3 +00.0	309	09.7 +02.3	S 08	21.5 -00.1	14
15	180	52.8 +02.7	N 21	58.5 +00.2	235	44.3 +02.8	N 21	58.3 -00.1	324	12.0 +02.4	S 08	21.4 +00.0	15
16	195	55.5 +02.8	N 21	58.7 +00.2	250	47.1 +02.8	N 21	58.2 +00.0	339	14.4 +02.3	S 08	21.4 -00.1	16
17	210	58.3 +02.7	N 21	58.9 +00.2	265	49.9 +02.8	N 21	58.2 +00.0	354	16.7 +02.4	S 08	21.3 +00.0	17
18	226	01.0 +02.8	N 21	59.1 +00.2	280	52.7 +02.8	N 21	58.2 -00.1	9	19.1 +02.3	S 08	21.3 -00.1	18
19	241	03.8 +02.7	N 21	59.3 +00.2	295	55.5 +02.9	N 21	58.1 +00.0	24	21.4 +02.4	S 08	21.2 +00.0	19
20	256	06.5 +02.8	N 21	59.5 +00.2	310	58.4 +02.8	N 21	58.1 +00.0	39	23.8 +02.3	S 08	21.2 -00.1	20
21	271	09.3 +02.7	N 21	59.7 +00.1	326	01.2 +02.8	N 21	58.1 +00.0	54	26.1 +02.4	S 08	21.1 -00.1	21
22	286	12.0 +02.8	N 21	59.8 +00.2	341	04.0 +02.8	N 21	58.1 -00.1	69	28.5 +02.3	S 08	21.0 +00.0	22
23	301	14.8 +02.7	N 22	00.0 +00.2	356	06.8 +02.8	N 21	58.0 +00.0	84	30.8 +02.4	S 08	21.0 -00.1	23
	<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				<b>UT 02 06 10 14 18 22</b>				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				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 00'2 00'2 00'2 00'2 00'2 00'2				HP 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 231° 231° 231° 231° 231° 231°				SHA 286° 286° 286° 286° 286° 286°				SHA 014° 014° 014° 014° 014° 014°				
	Greenwich Culmination Time: 02:58				Greenwich Culmination Time: 23:15				Greenwich Culmination Time: 17:22				

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

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	181 06.2 -00.3	S	23 19.5 +00.1	132 02.5 -00.4	S	19 51.7 -00.9	352 01.9 -37.5	N	28 25.0 -00.9	00			
01	196 05.9 -00.3	S	23 19.6 +00.1	147 02.1 -00.4	S	19 50.8 -00.8	6 24.4 -37.3	N	28 24.1 -01.0	01			
02	211 05.6 -00.3	S	23 19.7 +00.1	162 01.7 -00.4	S	19 50.0 -00.9	20 47.1 -37.3	N	28 23.1 -01.3	02			
03	226 05.3 -00.3	S	23 19.8 +00.1	177 01.3 -00.4	S	19 49.1 -00.8	35 09.8 -37.3	N	28 21.8 -01.4	03			
04	241 05.0 -00.3	S	23 19.9 +00.1	192 00.9 -00.5	S	19 48.3 -00.9	49 32.5 -37.2	N	28 20.4 -01.6	04			
05	256 04.7 -00.3	S	23 20.0 +00.1	207 00.4 -00.4	S	19 47.4 -00.8	63 55.3 -37.2	N	28 18.8 -01.8	05			
06	271 04.4 -00.3	S	23 20.1 +00.1	222 00.0 -00.4	S	19 46.6 -00.9	78 18.1 -37.0	N	28 17.0 -02.0	06			
07	286 04.1 -00.3	S	23 20.2 +00.1	236 59.6 -00.4	S	19 45.7 -00.8	92 41.1 -37.0	N	28 15.0 -02.2	07			
08	301 03.8 -00.3	S	23 20.3 +00.1	251 59.2 -00.4	S	19 44.9 -00.9	107 04.1 -37.0	N	28 12.8 -02.4	08			
09	316 03.5 -00.3	S	23 20.4 +00.1	266 58.8 -00.4	S	19 44.0 -00.9	121 27.1 -36.9	N	28 10.4 -02.5	09			
10	331 03.2 -00.3	S	23 20.5 +00.1	281 58.4 -00.4	S	19 43.1 -00.8	135 50.2 -36.8	N	28 07.9 -02.8	10			
11	346 02.9 -00.3	S	23 20.6 +00.1	296 58.0 -00.4	S	19 42.3 -00.9	150 13.4 -36.7	N	28 05.1 -02.9	11			
12	1 02.6 -00.3	S	23 20.7 +00.1	311 57.6 -00.4	S	19 41.4 -00.8	164 36.7 -36.6	N	28 02.2 -03.1	12			
13	16 02.3 -00.3	S	23 20.8 +00.1	326 57.2 -00.4	S	19 40.6 -00.9	179 00.1 -36.6	N	27 59.1 -03.3	13			
14	31 02.0 -00.3	S	23 20.9 +00.1	341 56.8 -00.4	S	19 39.7 -00.8	193 23.5 -36.5	N	27 55.8 -03.4	14			
15	46 01.7 -00.3	S	23 21.0 +00.1	356 56.4 -00.4	S	19 38.9 -00.9	207 47.0 -36.4	N	27 52.4 -03.7	15			
16	61 01.4 -00.4	S	23 21.1 +00.0	11 56.0 -00.4	S	19 38.0 -00.9	222 10.6 -36.3	N	27 48.7 -03.8	16			
17	76 01.0 -00.3	S	23 21.1 +00.1	26 55.6 -00.4	S	19 37.1 -00.8	236 34.3 -36.2	N	27 44.9 -04.0	17			
18	91 00.7 -00.3	S	23 21.2 +00.1	41 55.2 -00.4	S	19 36.3 -00.9	250 58.1 -36.1	N	27 40.9 -04.2	18			
19	106 00.4 -00.3	S	23 21.3 +00.1	56 54.8 -00.4	S	19 35.4 -00.8	265 22.0 -36.1	N	27 36.7 -04.3	19			
20	121 00.1 -00.3	S	23 21.4 +00.1	71 54.4 -00.3	S	19 34.6 -00.9	279 45.9 -35.9	N	27 32.4 -04.5	20			
21	135 59.8 -00.3	S	23 21.5 +00.1	86 54.1 -00.4	S	19 33.7 -00.9	294 10.0 -35.8	N	27 27.9 -04.7	21			
22	150 59.5 -00.3	S	23 21.6 +00.1	101 53.7 -00.4	S	19 32.8 -00.8	308 34.2 -35.8	N	27 23.2 -04.9	22			
23	165 59.2 -00.3	S	23 21.7 +00.1	116 53.3 -00.4	S	19 32.0 -00.9	322 58.4 -35.6	N	27 18.3 -05.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'2 00'2 00'2 00'2 00'2 00'2			SD 16'0 16'0 15'9 15'9 15'9 15'8						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 58'7 58'6 58'5 58'4 58'3 58'1						
	SHA 096° 096° 096° 095° 095° 095°			SHA 047° 047° 046° 046° 046° 046°			SHA 266° 263° 260° 258° 255° 253°						
	Greenwich Culmination Time: 11:55			Greenwich Culmination Time: 15:12			Greenwich Culmination Time: 00:33						

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	316 17.5 +02.8	N	22 00.2 +00.2	11 09.6 +02.9	N	21 58.0 +00.0	99 33.2 +02.3	S	08 20.9 +00.0	00			
01	331 20.3 +02.7	N	22 00.4 +00.2	26 12.5 +02.8	N	21 58.0 -00.1	114 35.5 +02.4	S	08 20.9 -00.1	01			
02	346 23.0 +02.8	N	22 00.6 +00.2	41 15.3 +02.8	N	21 57.9 +00.0	129 37.9 +02.3	S	08 20.8 +00.0	02			
03	1 25.8 +02.8	N	22 00.8 +00.2	56 18.1 +02.8	N	21 57.9 +00.0	144 40.2 +02.3	S	08 20.8 -00.1	03			
04	16 28.6 +02.7	N	22 01.0 +00.2	71 20.9 +02.8	N	21 57.9 -00.1	159 42.5 +02.4	S	08 20.7 -00.1	04			
05	31 31.3 +02.8	N	22 01.2 +00.2	86 23.7 +02.9	N	21 57.8 +00.0	174 44.9 +02.3	S	08 20.6 +00.0	05			
06	46 34.1 +02.7	N	22 01.4 +00.2	101 26.6 +02.8	N	21 57.8 +00.0	189 47.2 +02.4	S	08 20.6 -00.1	06			
07	61 36.8 +02.8	N	22 01.6 +00.1	116 29.4 +02.8	N	21 57.8 +00.0	204 49.6 +02.3	S	08 20.5 +00.0	07			
08	76 39.6 +02.8	N	22 01.7 +00.2	131 32.2 +02.8	N	21 57.8 -00.1	219 51.9 +02.4	S	08 20.5 -00.1	08			
09	91 42.4 +02.8	N	22 01.9 +00.2	146 35.0 +02.8	N	21 57.7 +00.0	234 54.3 +02.3	S	08 20.4 +00.0	09			
10	106 45.2 +02.7	N	22 02.1 +00.2	161 37.8 +02.9	N	21 57.7 +00.0	249 56.6 +02.4	S	08 20.4 -00.1	10			
11	121 47.9 +02.8	N	22 02.3 +00.2	176 40.7 +02.8	N	21 57.7 -00.1	264 59.0 +02.3	S	08 20.3 -00.1	11			
12	136 50.7 +02.8	N	22 02.5 +00.2	191 43.5 +02.8	N	21 57.6 +00.0	280 01.3 +02.3	S	08 20.2 +00.0	12			
13	151 53.5 +02.7	N	22 02.7 +00.2	206 46.3 +02.8	N	21 57.6 +00.0	295 03.6 +02.4	S	08 20.2 -00.1	13			
14	166 56.2 +02.8	N	22 02.9 +00.2	221 49.1 +02.8	N	21 57.6 +00.0	310 06.0 +02.3	S	08 20.1 +00.0	14			
15	181 59.0 +02.8	N	22 03.1 +00.2	236 51.9 +02.9	N	21 57.6 -00.1	325 08.3 +02.4	S	08 20.1 -00.1	15			
16	197 01.8 +02.8	N	22 03.3 +00.2	251 54.8 +02.8	N	21 57.5 +00.0	340 10.7 +02.3	S	08 20.0 +00.0	16			
17	212 04.6 +02.8	N	22 03.5 +00.2	266 57.6 +02.8	N	21 57.5 +00.0	355 13.0 +02.4	S	08 20.0 -00.1	17			
18	227 07.4 +02.8	N	22 03.7 +00.2	282 00.4 +02.8	N	21 57.5 -00.1	10 15.4 +02.3	S	08 19.9 -00.1	18			
19	242 10.2 +02.7	N	22 03.9 +00.2	297 03.2 +02.8	N	21 57.4 +00.0	25 17.7 +02.3	S	08 19.8 +00.0	19			
20	257 12.9 +02.8	N	22 04.1 +00.2	312 06.0 +02.8	N	21 57.4 +00.0	40 20.0 +02.4	S	08 19.8 -00.1	20			
21	272 15.7 +02.8	N	22 04.3 +00.2	327 08.8 +02.9	N	21 57.4 -00.1	55 22.4 +02.3	S	08 19.7 +00.0	21			
22	287 18.5 +02.8	N	22 04.5 +00.2	342 11.7 +02.8	N	21 57.3 +00.0	70 24.7 +02.4	S	08 19.7 -00.1	22			
23	302 21.3 +02.8	N	22 04.7 +00.1	357 14.5 +02.8	N	21 57.3 +00.0	85 27.1 +02.3	S	08 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 00'1 00'1 00'1 00'1 00'1 00'1			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 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 231° 231° 231° 231° 231° 231°			SHA 286° 286° 286° 286° 286° 286°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 02:54			Greenwich Culmination Time: 23:11			Greenwich Culmination Time: 17:19						

UT	<i>Sun</i>				<i>Venus</i>				<i>Moon</i> <span style="float:right">A: 58%</span>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	180 58.9 -00.3	S	23 21.8 +00.1	131 52.9 -00.4	S	19 31.1 -00.9	337 22.8 -35.6	N	27 13.3 -05.2	00			
01	195 58.6 -00.3	S	23 21.9 +00.0	146 52.5 -00.4	S	19 30.2 -00.8	351 47.2 -35.4	N	27 08.1 -05.4	01			
02	210 58.3 -00.3	S	23 21.9 +00.1	161 52.1 -00.4	S	19 29.4 -00.9	6 11.8 -35.4	N	27 02.7 -05.5	02			
03	225 58.0 -00.3	S	23 22.0 +00.1	176 51.7 -00.4	S	19 28.5 -00.9	20 36.4 -35.2	N	26 57.2 -05.7	03			
04	240 57.7 -00.3	S	23 22.1 +00.1	191 51.3 -00.4	S	19 27.6 -00.8	35 01.2 -35.1	N	26 51.5 -05.8	04			
05	255 57.4 -00.3	S	23 22.2 +00.1	206 50.9 -00.3	S	19 26.8 -00.9	49 26.1 -35.0	N	26 45.7 -06.0	05			
06	270 57.1 -00.3	S	23 22.3 +00.0	221 50.6 -00.4	S	19 25.9 -00.9	63 51.1 -34.9	N	26 39.7 -06.1	06			
07	285 56.8 -00.3	S	23 22.3 +00.1	236 50.2 -00.4	S	19 25.0 -00.8	78 16.2 -34.8	N	26 33.6 -06.4	07			
08	300 56.5 -00.3	S	23 22.4 +00.1	251 49.8 -00.4	S	19 24.2 -00.9	92 41.4 -34.7	N	26 27.2 -06.4	08			
09	315 56.2 -00.3	S	23 22.5 +00.1	266 49.4 -00.4	S	19 23.3 -00.9	107 06.7 -34.5	N	26 20.8 -06.6	09			
10	330 55.9 -00.3	S	23 22.6 +00.1	281 49.0 -00.4	S	19 22.4 -00.9	121 32.2 -34.5	N	26 14.2 -06.8	10			
11	345 55.6 -00.3	S	23 22.7 +00.0	296 48.6 -00.3	S	19 21.5 -00.8	135 57.7 -34.3	N	26 07.4 -06.9	11			
12	0 55.3 -00.4	S	23 22.7 +00.1	311 48.3 -00.4	S	19 20.7 -00.9	150 23.4 -34.2	N	26 00.5 -07.1	12			
13	15 54.9 -00.3	S	23 22.8 +00.1	326 47.9 -00.4	S	19 19.8 -00.9	164 49.2 -34.1	N	25 53.4 -07.2	13			
14	30 54.6 -00.3	S	23 22.9 +00.1	341 47.5 -00.4	S	19 18.9 -00.9	179 15.1 -34.0	N	25 46.2 -07.3	14			
15	45 54.3 -00.3	S	23 23.0 +00.0	356 47.1 -00.4	S	19 18.0 -00.8	193 41.1 -33.8	N	25 38.9 -07.5	15			
16	60 54.0 -00.3	S	23 23.0 +00.1	11 46.7 -00.3	S	19 17.2 -00.9	208 07.3 -33.8	N	25 31.4 -07.6	16			
17	75 53.7 -00.3	S	23 23.1 +00.1	26 46.4 -00.4	S	19 16.3 -00.9	222 33.5 -33.6	N	25 23.8 -07.8	17			
18	90 53.4 -00.3	S	23 23.2 +00.1	41 46.0 -00.4	S	19 15.4 -00.9	236 59.9 -33.5	N	25 16.0 -07.9	18			
19	105 53.1 -00.3	S	23 23.3 +00.0	56 45.6 -00.4	S	19 14.5 -00.9	251 26.4 -33.3	N	25 08.1 -08.0	19			
20	120 52.8 -00.3	S	23 23.3 +00.1	71 45.2 -00.3	S	19 13.6 -00.8	265 53.1 -33.3	N	25 00.1 -08.2	20			
21	135 52.5 -00.3	S	23 23.4 +00.1	86 44.9 -00.4	S	19 12.8 -00.9	280 19.8 -33.1	N	24 51.9 -08.3	21			
22	150 52.2 -00.3	S	23 23.5 +00.0	101 44.5 -00.4	S	19 11.9 -00.9	294 46.7 -33.0	N	24 43.6 -08.4	22			
23	165 51.9 -00.3	S	23 23.5 +00.1	116 44.1 -00.3	S	19 11.0 -00.9	309 13.7 -32.9	N	24 35.2 -08.6	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 00'2 00'2 00'2 00'2 00'2 00'2			SD 15'8 15'8 15'7 15'7 15'7 15'6						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 58'0 57'9 57'7 57'6 57'5 57'3						
	SHA 095° 095° 094° 094° 094° 094°			SHA 046° 045° 045° 045° 045° 045°			SHA 250° 247° 245° 243° 240° 238°						
	Greenwich Culmination Time: 11:56			Greenwich Culmination Time: 15:12			Greenwich Culmination Time: 01:34						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	317 24.1 +02.8	N	22 04.8 +00.2	12 17.3 +02.8	N	21 57.3 +00.0	100 29.4 +02.3	S	08 19.6 -00.1	00			
01	332 26.9 +02.8	N	22 05.0 +00.2	27 20.1 +02.8	N	21 57.3 -00.1	115 31.7 +02.4	S	08 19.5 -00.1	01			
02	347 29.7 +02.8	N	22 05.2 +00.2	42 22.9 +02.9	N	21 57.2 +00.0	130 34.1 +02.3	S	08 19.4 +00.0	02			
03	2 32.5 +02.8	N	22 05.4 +00.2	57 25.8 +02.8	N	21 57.2 +00.0	145 36.4 +02.4	S	08 19.4 -00.1	03			
04	17 35.3 +02.8	N	22 05.6 +00.2	72 28.6 +02.8	N	21 57.2 -00.1	160 38.8 +02.3	S	08 19.3 +00.0	04			
05	32 38.1 +02.8	N	22 05.8 +00.2	87 31.4 +02.8	N	21 57.1 +00.0	175 41.1 +02.4	S	08 19.3 -00.1	05			
06	47 40.9 +02.8	N	22 06.0 +00.2	102 34.2 +02.8	N	21 57.1 +00.0	190 43.5 +02.3	S	08 19.2 +00.0	06			
07	62 43.7 +02.8	N	22 06.2 +00.2	117 37.0 +02.8	N	21 57.1 -00.1	205 45.8 +02.3	S	08 19.2 -00.1	07			
08	77 46.5 +02.8	N	22 06.4 +00.2	132 39.8 +02.9	N	21 57.0 +00.0	220 48.1 +02.4	S	08 19.1 -00.1	08			
09	92 49.3 +02.8	N	22 06.6 +00.2	147 42.7 +02.8	N	21 57.0 +00.0	235 50.5 +02.3	S	08 19.0 +00.0	09			
10	107 52.1 +02.8	N	22 06.8 +00.2	162 45.5 +02.8	N	21 57.0 +00.0	250 52.8 +02.4	S	08 19.0 -00.1	10			
11	122 54.9 +02.8	N	22 07.0 +00.2	177 48.3 +02.8	N	21 57.0 -00.1	265 55.2 +02.3	S	08 18.9 +00.0	11			
12	137 57.7 +02.8	N	22 07.2 +00.2	192 51.1 +02.8	N	21 56.9 +00.0	280 57.5 +02.3	S	08 18.9 -00.1	12			
13	153 00.5 +02.9	N	22 07.4 +00.2	207 53.9 +02.8	N	21 56.9 +00.0	295 59.8 +02.4	S	08 18.8 -00.1	13			
14	168 03.4 +02.8	N	22 07.6 +00.2	222 56.7 +02.8	N	21 56.9 -00.1	311 02.2 +02.3	S	08 18.7 +00.0	14			
15	183 06.2 +02.8	N	22 07.8 +00.2	237 59.5 +02.9	N	21 56.8 +00.0	326 04.5 +02.4	S	08 18.7 -00.1	15			
16	198 09.0 +02.8	N	22 08.0 +00.2	253 02.4 +02.8	N	21 56.8 +00.0	341 06.9 +02.3	S	08 18.6 +00.0	16			
17	213 11.8 +02.8	N	22 08.2 +00.2	268 05.2 +02.8	N	21 56.8 +00.0	356 09.2 +02.3	S	08 18.6 -00.1	17			
18	228 14.6 +02.8	N	22 08.4 +00.2	283 08.0 +02.8	N	21 56.8 -00.1	11 11.5 +02.4	S	08 18.5 +00.0	18			
19	243 17.4 +02.9	N	22 08.6 +00.2	298 10.8 +02.8	N	21 56.7 +00.0	26 13.9 +02.3	S	08 18.5 -00.1	19			
20	258 20.3 +02.8	N	22 08.8 +00.3	313 13.6 +02.8	N	21 56.7 +00.0	41 16.2 +02.4	S	08 18.4 -00.1	20			
21	273 23.1 +02.8	N	22 09.1 +00.2	328 16.4 +02.9	N	21 56.7 -00.1	56 18.6 +02.3	S	08 18.3 +00.0	21			
22	288 25.9 +02.8	N	22 09.3 +00.2	343 19.3 +02.8	N	21 56.6 +00.0	71 20.9 +02.3	S	08 18.3 -00.1	22			
23	303 28.7 +02.9	N	22 09.5 +00.2	358 22.1 +02.8	N	21 56.6 +00.0	86 23.2 +02.4	S	08 18.2 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 231° 231° 231° 231° 231° 231°			SHA 286° 286° 286° 286° 286° 286°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 02:49			Greenwich Culmination Time: 23:06			Greenwich Culmination Time: 17:15						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	180	51.6 -00.3	S 23 23.6	+00.1	131	43.8 -00.4	S 19 10.1	-00.9	323	40.8 -32.7	N 24 26.6	-08.7	00
01	195	51.3 -00.3	S 23 23.7	+00.0	146	43.4 -00.4	S 19 09.2	-00.9	338	08.1 -32.7	N 24 17.9	-08.8	01
02	210	51.0 -00.3	S 23 23.7	+00.1	161	43.0 -00.3	S 19 08.3	-00.9	352	35.4 -32.5	N 24 09.1	-08.9	02
03	225	50.7 -00.3	S 23 23.8	+00.1	176	42.7 -00.4	S 19 07.4	-00.8	7	02.9 -32.3	N 24 00.2	-09.1	03
04	240	50.4 -00.4	S 23 23.9	+00.0	191	42.3 -00.4	S 19 06.6	-00.9	21	30.6 -32.3	N 23 51.1	-09.1	04
05	255	50.0 -00.3	S 23 23.9	+00.1	206	41.9 -00.3	S 19 05.7	-00.9	35	58.3 -32.1	N 23 42.0	-09.3	05
06	270	49.7 -00.3	S 23 24.0	+00.0	221	41.6 -00.4	S 19 04.8	-00.9	50	26.2 -32.0	N 23 32.7	-09.4	06
07	285	49.4 -00.3	S 23 24.0	+00.1	236	41.2 -00.4	S 19 03.9	-00.9	64	54.2 -31.9	N 23 23.3	-09.6	07
08	300	49.1 -00.3	S 23 24.1	+00.1	251	40.8 -00.3	S 19 03.0	-00.9	79	22.3 -31.7	N 23 13.7	-09.6	08
09	315	48.8 -00.3	S 23 24.2	+00.0	266	40.5 -00.4	S 19 02.1	-00.9	93	50.6 -31.7	N 23 04.1	-09.7	09
10	330	48.5 -00.3	S 23 24.2	+00.1	281	40.1 -00.3	S 19 01.2	-00.9	108	18.9 -31.5	N 22 54.4	-09.9	10
11	345	48.2 -00.3	S 23 24.3	+00.0	296	39.8 -00.4	S 19 00.3	-00.9	122	47.4 -31.4	N 22 44.5	-09.9	11
12	0	47.9 -00.3	S 23 24.3	+00.1	311	39.4 -00.4	S 18 59.4	-00.9	137	16.0 -31.2	N 22 34.6	-10.1	12
13	15	47.6 -00.3	S 23 24.4	+00.0	326	39.0 -00.3	S 18 58.5	-00.9	151	44.8 -31.1	N 22 24.5	-10.2	13
14	30	47.3 -00.3	S 23 24.4	+00.1	341	38.7 -00.4	S 18 57.6	-00.9	166	13.7 -31.0	N 22 14.3	-10.2	14
15	45	47.0 -00.3	S 23 24.5	+00.1	356	38.3 -00.3	S 18 56.7	-00.9	180	42.7 -30.9	N 22 04.1	-10.4	15
16	60	46.7 -00.3	S 23 24.6	+00.0	11	38.0 -00.4	S 18 55.8	-00.8	195	11.8 -30.8	N 21 53.7	-10.5	16
17	75	46.4 -00.3	S 23 24.6	+00.1	26	37.6 -00.3	S 18 55.0	-00.9	209	41.0 -30.6	N 21 43.2	-10.5	17
18	90	46.1 -00.4	S 23 24.7	+00.0	41	37.3 -00.4	S 18 54.1	-00.9	224	10.4 -30.5	N 21 32.7	-10.7	18
19	105	45.7 -00.3	S 23 24.7	+00.1	56	36.9 -00.3	S 18 53.2	-00.9	238	39.9 -30.4	N 21 22.0	-10.8	19
20	120	45.4 -00.3	S 23 24.8	+00.0	71	36.6 -00.4	S 18 52.3	-00.9	253	09.5 -30.3	N 21 11.2	-10.8	20
21	135	45.1 -00.3	S 23 24.8	+00.1	86	36.2 -00.4	S 18 51.4	-00.9	267	39.2 -30.2	N 21 00.4	-10.9	21
22	150	44.8 -00.3	S 23 24.9	+00.0	101	35.8 -00.3	S 18 50.5	-00.9	282	09.0 -30.0	N 20 49.5	-11.1	22
23	165	44.5 -00.3	S 23 24.9	+00.1	116	35.5 -00.3	S 18 49.6	-01.0	296	39.0 -29.9	N 20 38.4	-11.1	23
	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 15'6 15'6 15'5 15'5 15'4 15'4				
	HP 00'1 00'1 00'1 00'1 00'1 00'1								HP 57'2 57'1 56'9 56'8 56'7 56'6				
	SHA 094° 093° 093° 093° 093° 093°								SHA 235° 233° 231° 229° 226° 224°				
	Greenwich Culmination Time: 11:56								Greenwich Culmination Time: 15:13				
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	318	31.6 +02.8	N 22 09.7	+00.2	13	24.9 +02.8	N 21 56.6	-00.1	101	25.6 +02.3	S 08 18.2	-00.1	00
01	333	34.4 +02.8	N 22 09.9	+00.2	28	27.7 +02.8	N 21 56.5	+00.0	116	27.9 +02.3	S 08 18.1	-00.1	01
02	348	37.2 +02.9	N 22 10.1	+00.2	43	30.5 +02.8	N 21 56.5	+00.0	131	30.2 +02.4	S 08 18.0	+00.0	02
03	3	40.1 +02.8	N 22 10.3	+00.2	58	33.3 +02.8	N 21 56.5	+00.0	146	32.6 +02.3	S 08 18.0	-00.1	03
04	18	42.9 +02.8	N 22 10.5	+00.2	73	36.1 +02.9	N 21 56.5	-00.1	161	34.9 +02.4	S 08 17.9	+00.0	04
05	33	45.7 +02.9	N 22 10.7	+00.2	88	39.0 +02.8	N 21 56.4	+00.0	176	37.3 +02.3	S 08 17.9	-00.1	05
06	48	48.6 +02.8	N 22 10.9	+00.2	103	41.8 +02.8	N 21 56.4	+00.0	191	39.6 +02.3	S 08 17.8	-00.1	06
07	63	51.4 +02.9	N 22 11.1	+00.2	118	44.6 +02.8	N 21 56.4	-00.1	206	41.9 +02.4	S 08 17.7	+00.0	07
08	78	54.3 +02.8	N 22 11.3	+00.2	133	47.4 +02.8	N 21 56.3	+00.0	221	44.3 +02.3	S 08 17.7	-00.1	08
09	93	57.1 +02.8	N 22 11.5	+00.2	148	50.2 +02.8	N 21 56.3	+00.0	236	46.6 +02.3	S 08 17.6	+00.0	09
10	108	59.9 +02.9	N 22 11.7	+00.2	163	53.0 +02.8	N 21 56.3	-00.1	251	48.9 +02.4	S 08 17.6	-00.1	10
11	124	02.8 +02.8	N 22 11.9	+00.2	178	55.8 +02.9	N 21 56.2	+00.0	266	51.3 +02.3	S 08 17.5	-00.1	11
12	139	05.6 +02.9	N 22 12.1	+00.2	193	58.7 +02.8	N 21 56.2	+00.0	281	53.6 +02.3	S 08 17.4	+00.0	12
13	154	08.5 +02.8	N 22 12.3	+00.3	209	01.5 +02.8	N 21 56.2	+00.0	296	55.9 +02.4	S 08 17.4	-00.1	13
14	169	11.3 +02.9	N 22 12.6	+00.2	224	04.3 +02.8	N 21 56.2	-00.1	311	58.3 +02.3	S 08 17.3	+00.0	14
15	184	14.2 +02.8	N 22 12.8	+00.2	239	07.1 +02.8	N 21 56.1	+00.0	327	00.6 +02.4	S 08 17.3	-00.1	15
16	199	17.0 +02.9	N 22 13.0	+00.2	254	09.9 +02.8	N 21 56.1	+00.0	342	03.0 +02.3	S 08 17.2	-00.1	16
17	214	19.9 +02.9	N 22 13.2	+00.2	269	12.7 +02.8	N 21 56.1	-00.1	357	05.3 +02.3	S 08 17.1	+00.0	17
18	229	22.8 +02.8	N 22 13.4	+00.2	284	15.5 +02.8	N 21 56.0	+00.0	12	07.6 +02.4	S 08 17.1	-00.1	18
19	244	25.6 +02.9	N 22 13.6	+00.2	299	18.3 +02.9	N 21 56.0	+00.0	27	10.0 +02.3	S 08 17.0	+00.0	19
20	259	28.5 +02.8	N 22 13.8	+00.2	314	21.2 +02.8	N 21 56.0	+00.0	42	12.3 +02.3	S 08 17.0	-00.1	20
21	274	31.3 +02.9	N 22 14.0	+00.2	329	24.0 +02.8	N 21 56.0	-00.1	57	14.6 +02.4	S 08 16.9	-00.1	21
22	289	34.2 +02.9	N 22 14.2	+00.3	344	26.8 +02.8	N 21 55.9	+00.0	72	17.0 +02.3	S 08 16.8	+00.0	22
23	304	37.1 +02.8	N 22 14.5	+00.2	359	29.6 +02.8	N 21 55.9	+00.0	87	19.3 +02.3	S 08 16.8	-00.1	23
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 00'4 00'4 00'4 00'4 00'4 00'4				SD 00'1 00'1 00'1 00'1 00'1 00'1				
	HP 00'2 00'2 00'2 00'2 00'2 00'2				HP 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 231° 231° 231° 232° 232° 232°				SHA 286° 286° 286° 286° 286° 286°				SHA 014° 014° 014° 014° 014° 014°				
	Greenwich Culmination Time: 02:45				Greenwich Culmination Time: 23:02				Greenwich Culmination Time: 17:11				

UT	<b>Sun</b>				<b>Venus</b>				<b>Moon</b>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	180 44.2 -00.3	S	23 25.0 +00.0	131 35.2 -00.4	S	18 48.6 -00.9	311 09.1 -29.8	N	20 27.3 -11.2	00			
01	195 43.9 -00.3	S	23 25.0 +00.0	146 34.8 -00.3	S	18 47.7 -00.9	325 39.3 -29.7	N	20 16.1 -11.3	01			
02	210 43.6 -00.3	S	23 25.0 +00.1	161 34.5 -00.4	S	18 46.8 -00.9	340 09.6 -29.6	N	20 04.8 -11.4	02			
03	225 43.3 -00.3	S	23 25.1 +00.0	176 34.1 -00.3	S	18 45.9 -00.9	354 40.0 -29.4	N	19 53.4 -11.4	03			
04	240 43.0 -00.3	S	23 25.1 +00.1	191 33.8 -00.4	S	18 45.0 -00.9	9 10.6 -29.4	N	19 42.0 -11.5	04			
05	255 42.7 -00.3	S	23 25.2 +00.0	206 33.4 -00.3	S	18 44.1 -00.9	23 41.2 -29.2	N	19 30.5 -11.7	05			
06	270 42.4 -00.4	S	23 25.2 +00.1	221 33.1 -00.4	S	18 43.2 -00.9	38 12.0 -29.1	N	19 18.8 -11.6	06			
07	285 42.0 -00.3	S	23 25.3 +00.0	236 32.7 -00.3	S	18 42.3 -00.9	52 42.9 -29.0	N	19 07.2 -11.8	07			
08	300 41.7 -00.3	S	23 25.3 +00.0	251 32.4 -00.3	S	18 41.4 -00.9	67 13.9 -28.9	N	18 55.4 -11.8	08			
09	315 41.4 -00.3	S	23 25.3 +00.1	266 32.1 -00.4	S	18 40.5 -00.9	81 45.0 -28.8	N	18 43.6 -12.0	09			
10	330 41.1 -00.3	S	23 25.4 +00.0	281 31.7 -00.3	S	18 39.6 -00.9	96 16.2 -28.6	N	18 31.6 -11.9	10			
11	345 40.8 -00.3	S	23 25.4 +00.1	296 31.4 -00.4	S	18 38.7 -00.9	110 47.6 -28.6	N	18 19.7 -12.1	11			
12	0 40.5 -00.3	S	23 25.5 +00.0	311 31.0 -00.3	S	18 37.8 -01.0	125 19.0 -28.4	N	18 07.6 -12.1	12			
13	15 40.2 -00.3	S	23 25.5 +00.0	326 30.7 -00.3	S	18 36.8 -00.9	139 50.6 -28.4	N	17 55.5 -12.2	13			
14	30 39.9 -00.3	S	23 25.5 +00.1	341 30.4 -00.4	S	18 35.9 -00.9	154 22.2 -28.2	N	17 43.3 -12.2	14			
15	45 39.6 -00.3	S	23 25.6 +00.0	356 30.0 -00.3	S	18 35.0 -00.9	168 54.0 -28.1	N	17 31.1 -12.4	15			
16	60 39.3 -00.3	S	23 25.6 +00.0	11 29.7 -00.3	S	18 34.1 -00.9	183 25.9 -28.1	N	17 18.7 -12.3	16			
17	75 39.0 -00.4	S	23 25.6 +00.1	26 29.4 -00.4	S	18 33.2 -00.9	197 57.8 -27.9	N	17 06.4 -12.5	17			
18	90 38.6 -00.3	S	23 25.7 +00.0	41 29.0 -00.3	S	18 32.3 -00.9	212 29.9 -27.8	N	16 53.9 -12.5	18			
19	105 38.3 -00.3	S	23 25.7 +00.0	56 28.7 -00.3	S	18 31.4 -01.0	227 02.1 -27.7	N	16 41.4 -12.6	19			
20	120 38.0 -00.3	S	23 25.7 +00.1	71 28.4 -00.4	S	18 30.4 -00.9	241 34.4 -27.7	N	16 28.8 -12.6	20			
21	135 37.7 -00.3	S	23 25.8 +00.0	86 28.0 -00.3	S	18 29.5 -00.9	256 06.7 -27.5	N	16 16.2 -12.7	21			
22	150 37.4 -00.3	S	23 25.8 +00.0	101 27.7 -00.3	S	18 28.6 -00.9	270 39.2 -27.4	N	16 03.5 -12.7	22			
23	165 37.1 -00.3	S	23 25.8 +00.0	116 27.4 -00.4	S	18 27.7 -00.9	285 11.8 -27.3	N	15 50.8 -12.8	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'2 00'2 00'2 00'2 00'2 00'2			SD 15'4 15'3 15'3 15'3 15'2 15'2						
	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 56'4 56'3 56'2 56'1 55'9 55'8						
	SHA 093° 092° 092° 092° 092° 092°			SHA 043° 043° 043° 043° 043° 042°			SHA 222° 220° 218° 216° 214° 212°						
	Greenwich Culmination Time: 11:57			Greenwich Culmination Time: 15:14			Greenwich Culmination Time: 03:22						

  

UT	<b>Mars</b>				<b>Jupiter</b>				<b>Saturn</b>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	319 39.9 +02.9	N	22 14.7 +00.2	14 32.4 +02.8	N	21 55.9 -00.1	102 21.6 +02.4	S	08 16.7 +00.0	00			
01	334 42.8 +02.9	N	22 14.9 +00.2	29 35.2 +02.8	N	21 55.8 +00.0	117 24.0 +02.3	S	08 16.7 -00.1	01			
02	349 45.7 +02.8	N	22 15.1 +00.2	44 38.0 +02.8	N	21 55.8 +00.0	132 26.3 +02.3	S	08 16.6 -00.1	02			
03	4 48.5 +02.9	N	22 15.3 +00.2	59 40.8 +02.8	N	21 55.8 -00.1	147 28.6 +02.4	S	08 16.5 +00.0	03			
04	19 51.4 +02.9	N	22 15.5 +00.2	74 43.6 +02.9	N	21 55.7 +00.0	162 31.0 +02.3	S	08 16.5 -00.1	04			
05	34 54.3 +02.9	N	22 15.7 +00.2	89 46.5 +02.8	N	21 55.7 +00.0	177 33.3 +02.3	S	08 16.4 +00.0	05			
06	49 57.2 +02.8	N	22 15.9 +00.3	104 49.3 +02.8	N	21 55.7 +00.0	192 35.6 +02.4	S	08 16.4 -00.1	06			
07	65 00.0 +02.9	N	22 16.2 +00.2	119 52.1 +02.8	N	21 55.7 -00.1	207 38.0 +02.3	S	08 16.3 -00.1	07			
08	80 02.9 +02.9	N	22 16.4 +00.2	134 54.9 +02.8	N	21 55.6 +00.0	222 40.3 +02.3	S	08 16.2 +00.0	08			
09	95 05.8 +02.9	N	22 16.6 +00.2	149 57.7 +02.8	N	21 55.6 +00.0	237 42.6 +02.4	S	08 16.2 -00.1	09			
10	110 08.7 +02.9	N	22 16.8 +00.2	165 00.5 +02.8	N	21 55.6 -00.1	252 45.0 +02.3	S	08 16.1 +00.0	10			
11	125 11.6 +02.8	N	22 17.0 +00.2	180 03.3 +02.8	N	21 55.5 +00.0	267 47.3 +02.3	S	08 16.1 -00.1	11			
12	140 14.4 +02.9	N	22 17.2 +00.2	195 06.1 +02.8	N	21 55.5 +00.0	282 49.6 +02.4	S	08 16.0 -00.1	12			
13	155 17.3 +02.9	N	22 17.4 +00.3	210 08.9 +02.9	N	21 55.5 +00.0	297 52.0 +02.3	S	08 15.9 +00.0	13			
14	170 20.2 +02.9	N	22 17.7 +00.2	225 11.8 +02.8	N	21 55.5 -00.1	312 54.3 +02.3	S	08 15.9 -00.1	14			
15	185 23.1 +02.9	N	22 17.9 +00.2	240 14.6 +02.8	N	21 55.4 +00.0	327 56.6 +02.4	S	08 15.8 -00.1	15			
16	200 26.0 +02.9	N	22 18.1 +00.2	255 17.4 +02.8	N	21 55.4 +00.0	342 59.0 +02.3	S	08 15.7 +00.0	16			
17	215 28.9 +02.9	N	22 18.3 +00.2	270 20.2 +02.8	N	21 55.4 -00.1	358 01.3 +02.3	S	08 15.7 -00.1	17			
18	230 31.8 +02.9	N	22 18.5 +00.2	285 23.0 +02.8	N	21 55.3 +00.0	13 03.6 +02.4	S	08 15.6 +00.0	18			
19	245 34.7 +02.9	N	22 18.7 +00.3	300 25.8 +02.8	N	21 55.3 +00.0	28 06.0 +02.3	S	08 15.6 -00.1	19			
20	260 37.6 +02.9	N	22 19.0 +00.2	315 28.6 +02.8	N	21 55.3 -00.1	43 08.3 +02.3	S	08 15.5 -00.1	20			
21	275 40.5 +02.9	N	22 19.2 +00.2	330 31.4 +02.8	N	21 55.2 +00.0	58 10.6 +02.4	S	08 15.4 +00.0	21			
22	290 43.4 +02.9	N	22 19.4 +00.2	345 34.2 +02.8	N	21 55.2 +00.0	73 13.0 +02.3	S	08 15.4 -00.1	22			
23	305 46.3 +02.9	N	22 19.6 +00.2	0 37.0 +02.8	N	21 55.2 +00.0	88 15.3 +02.3	S	08 15.3 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 232° 232° 232° 232° 232° 232°			SHA 286° 286° 287° 287° 287° 287°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 02:40			Greenwich Culmination Time: 22:57			Greenwich Culmination Time: 17:07						



UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	180 36.8 -00.3	S	23 25.8 +00.1	131 27.0 -00.3	S	18 26.8 -01.0	299 44.5 -27.3	N	15 38.0 -12.8	00			
01	195 36.5 -00.3	S	23 25.9 +00.0	146 26.7 -00.3	S	18 25.8 -00.9	314 17.2 -27.1	N	15 25.2 -12.9	01			
02	210 36.2 -00.3	S	23 25.9 +00.0	161 26.4 -00.3	S	18 24.9 -00.9	328 50.1 -27.1	N	15 12.3 -12.9	02			
03	225 35.9 -00.3	S	23 25.9 +00.0	176 26.1 -00.4	S	18 24.0 -00.9	343 23.0 -26.9	N	14 59.4 -13.0	03			
04	240 35.6 -00.4	S	23 25.9 +00.1	191 25.7 -00.3	S	18 23.1 -00.9	357 56.1 -26.9	N	14 46.4 -13.1	04			
05	255 35.2 -00.3	S	23 26.0 +00.0	206 25.4 -00.3	S	18 22.2 -01.0	12 29.2 -26.8	N	14 33.3 -13.1	05			
06	270 34.9 -00.3	S	23 26.0 +00.0	221 25.1 -00.3	S	18 21.2 -00.9	27 02.4 -26.7	N	14 20.2 -13.1	06			
07	285 34.6 -00.3	S	23 26.0 +00.0	236 24.8 -00.3	S	18 20.3 -00.9	41 35.7 -26.6	N	14 07.1 -13.2	07			
08	300 34.3 -00.3	S	23 26.0 +00.1	251 24.5 -00.4	S	18 19.4 -01.0	56 09.1 -26.5	N	13 53.9 -13.2	08			
09	315 34.0 -00.3	S	23 26.1 +00.0	266 24.1 -00.3	S	18 18.4 -00.9	70 42.6 -26.4	N	13 40.7 -13.2	09			
10	330 33.7 -00.3	S	23 26.1 +00.0	281 23.8 -00.3	S	18 17.5 -00.9	85 16.2 -26.4	N	13 27.5 -13.3	10			
11	345 33.4 -00.3	S	23 26.1 +00.0	296 23.5 -00.3	S	18 16.6 -00.9	99 49.8 -26.2	N	13 14.2 -13.4	11			
12	0 33.1 -00.3	S	23 26.1 +00.0	311 23.2 -00.3	S	18 15.7 -01.0	114 23.6 -26.2	N	13 00.8 -13.4	12			
13	15 32.8 -00.3	S	23 26.1 +00.0	326 22.9 -00.3	S	18 14.7 -00.9	128 57.4 -26.1	N	12 47.4 -13.4	13			
14	30 32.5 -00.3	S	23 26.1 +00.1	341 22.6 -00.4	S	18 13.8 -00.9	143 31.3 -26.1	N	12 34.0 -13.5	14			
15	45 32.2 -00.4	S	23 26.2 +00.0	356 22.2 -00.3	S	18 12.9 -01.0	158 05.2 -25.9	N	12 20.5 -13.4	15			
16	60 31.8 -00.3	S	23 26.2 +00.0	11 21.9 -00.3	S	18 11.9 -00.9	172 39.3 -25.9	N	12 07.1 -13.6	16			
17	75 31.5 -00.3	S	23 26.2 +00.0	26 21.6 -00.3	S	18 11.0 -00.9	187 13.4 -25.8	N	11 53.5 -13.5	17			
18	90 31.2 -00.3	S	23 26.2 +00.0	41 21.3 -00.3	S	18 10.1 -01.0	201 47.6 -25.7	N	11 40.0 -13.6	18			
19	105 30.9 -00.3	S	23 26.2 +00.0	56 21.0 -00.3	S	18 09.1 -00.9	216 21.9 -25.7	N	11 26.4 -13.7	19			
20	120 30.6 -00.3	S	23 26.2 +00.0	71 20.7 -00.3	S	18 08.2 -00.9	230 56.2 -25.6	N	11 12.7 -13.6	20			
21	135 30.3 -00.3	S	23 26.2 +00.0	86 20.4 -00.3	S	18 07.3 -01.0	245 30.6 -25.5	N	10 59.1 -13.7	21			
22	150 30.0 -00.3	S	23 26.2 +00.1	101 20.1 -00.3	S	18 06.3 -00.9	260 05.1 -25.4	N	10 45.4 -13.7	22			
23	165 29.7 -00.3	S	23 26.3 +00.0	116 19.8 -00.4	S	18 05.4 -00.9	274 39.7 -25.4	N	10 31.7 -13.8	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'2 00'2 00'2 00'2 00'2 00'2			SD 15'2 15'1 15'1 15'1 15'1 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 55'7 55'6 55'5 55'4 55'3 55'2						
	SHA 091° 091° 091° 091° 091° 091°			SHA 042° 042° 042° 042° 042° 041°			SHA 210° 208° 206° 204° 202° 200°						
	Greenwich Culmination Time: 11:57			Greenwich Culmination Time: 15:14			Greenwich Culmination Time: 04:08						

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	320 49.2 +02.9	N	22 19.8 +00.3	15 39.8 +02.9	N	21 55.2 -00.1	103 17.6 +02.4	S	08 15.3 -00.1	00			
01	335 52.1 +02.9	N	22 20.1 +00.2	30 42.7 +02.8	N	21 55.1 +00.0	118 20.0 +02.3	S	08 15.2 -00.1	01			
02	350 55.0 +02.9	N	22 20.3 +00.2	45 45.5 +02.8	N	21 55.1 +00.0	133 22.3 +02.3	S	08 15.1 +00.0	02			
03	5 57.9 +02.9	N	22 20.5 +00.2	60 48.3 +02.8	N	21 55.1 -00.1	148 24.6 +02.3	S	08 15.1 -00.1	03			
04	21 00.8 +02.9	N	22 20.7 +00.2	75 51.1 +02.8	N	21 55.0 +00.0	163 26.9 +02.4	S	08 15.0 -00.1	04			
05	36 03.7 +02.9	N	22 20.9 +00.3	90 53.9 +02.8	N	21 55.0 +00.0	178 29.3 +02.3	S	08 14.9 +00.0	05			
06	51 06.6 +02.9	N	22 21.2 +00.2	105 56.7 +02.8	N	21 55.0 +00.0	193 31.6 +02.3	S	08 14.9 -00.1	06			
07	66 09.5 +03.0	N	22 21.4 +00.2	120 59.5 +02.8	N	21 55.0 -00.1	208 33.9 +02.4	S	08 14.8 +00.0	07			
08	81 12.5 +02.9	N	22 21.6 +00.2	136 02.3 +02.8	N	21 54.9 +00.0	223 36.3 +02.3	S	08 14.8 -00.1	08			
09	96 15.4 +02.9	N	22 21.8 +00.3	151 05.1 +02.8	N	21 54.9 +00.0	238 38.6 +02.3	S	08 14.7 -00.1	09			
10	111 18.3 +02.9	N	22 22.1 +00.2	166 07.9 +02.8	N	21 54.9 -00.1	253 40.9 +02.4	S	08 14.6 +00.0	10			
11	126 21.2 +02.9	N	22 22.3 +00.2	181 10.7 +02.8	N	21 54.8 +00.0	268 43.3 +02.3	S	08 14.6 -00.1	11			
12	141 24.1 +03.0	N	22 22.5 +00.2	196 13.5 +02.8	N	21 54.8 +00.0	283 45.6 +02.3	S	08 14.5 -00.1	12			
13	156 27.1 +02.9	N	22 22.7 +00.2	211 16.3 +02.8	N	21 54.8 -00.1	298 47.9 +02.3	S	08 14.4 +00.0	13			
14	171 30.0 +02.9	N	22 22.9 +00.3	226 19.1 +02.9	N	21 54.7 +00.0	313 50.2 +02.4	S	08 14.4 -00.1	14			
15	186 32.9 +02.9	N	22 23.2 +00.2	241 22.0 +02.8	N	21 54.7 +00.0	328 52.6 +02.3	S	08 14.3 +00.0	15			
16	201 35.8 +03.0	N	22 23.4 +00.2	256 24.8 +02.8	N	21 54.7 +00.0	343 54.9 +02.3	S	08 14.3 -00.1	16			
17	216 38.8 +02.9	N	22 23.6 +00.2	271 27.6 +02.8	N	21 54.7 -00.1	358 57.2 +02.4	S	08 14.2 -00.1	17			
18	231 41.7 +02.9	N	22 23.8 +00.3	286 30.4 +02.8	N	21 54.6 +00.0	13 59.6 +02.3	S	08 14.1 +00.0	18			
19	246 44.6 +03.0	N	22 24.1 +00.2	301 33.2 +02.8	N	21 54.6 +00.0	29 01.9 +02.3	S	08 14.1 -00.1	19			
20	261 47.6 +02.9	N	22 24.3 +00.2	316 36.0 +02.8	N	21 54.6 -00.1	44 04.2 +02.3	S	08 14.0 -00.1	20			
21	276 50.5 +02.9	N	22 24.5 +00.2	331 38.8 +02.8	N	21 54.5 +00.0	59 06.5 +02.4	S	08 13.9 +00.0	21			
22	291 53.4 +03.0	N	22 24.7 +00.3	346 41.6 +02.8	N	21 54.5 +00.0	74 08.9 +02.3	S	08 13.9 -00.1	22			
23	306 56.4 +02.9	N	22 25.0 +00.2	1 44.4 +02.8	N	21 54.5 +00.0	89 11.2 +02.3	S	08 13.8 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 232° 232° 232° 232° 232° 232°			SHA 287° 287° 287° 287° 287° 287°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 02:36			Greenwich Culmination Time: 22:53			Greenwich Culmination Time: 17:04						

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UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	180 29.4 -00.3	S	23 26.3 +00.0	131 19.4 -00.3	S	18 04.5 -01.0	289 14.3 -25.3	N	10 17.9 -13.8	00			
01	195 29.1 -00.4	S	23 26.3 +00.0	146 19.1 -00.3	S	18 03.5 -00.9	303 49.0 -25.3	N	10 04.1 -13.8	01			
02	210 28.7 -00.3	S	23 26.3 +00.0	161 18.8 -00.3	S	18 02.6 -01.0	318 23.7 -25.1	N	09 50.3 -13.8	02			
03	225 28.4 -00.3	S	23 26.3 +00.0	176 18.5 -00.3	S	18 01.6 -00.9	332 58.6 -25.2	N	09 36.5 -13.8	03			
04	240 28.1 -00.3	S	23 26.3 +00.0	191 18.2 -00.3	S	18 00.7 -00.9	347 33.4 -25.0	N	09 22.7 -13.9	04			
05	255 27.8 -00.3	S	23 26.3 +00.0	206 17.9 -00.3	S	17 59.8 -01.0	2 08.4 -25.0	N	09 08.8 -13.9	05			
06	270 27.5 -00.3	S	23 26.3 +00.0	221 17.6 -00.3	S	17 58.8 -00.9	16 43.4 -25.0	N	08 54.9 -13.9	06			
07	285 27.2 -00.3	S	23 26.3 +00.0	236 17.3 -00.3	S	17 57.9 -01.0	31 18.4 -24.9	N	08 41.0 -14.0	07			
08	300 26.9 -00.3	S	23 26.3 +00.0	251 17.0 -00.3	S	17 56.9 -00.9	45 53.5 -24.8	N	08 27.0 -13.9	08			
09	315 26.6 -00.3	S	23 26.3 +00.0	266 16.7 -00.3	S	17 56.0 -01.0	60 28.7 -24.8	N	08 13.1 -14.0	09			
10	330 26.3 -00.4	S	23 26.3 +00.0	281 16.4 -00.3	S	17 55.0 -00.9	75 03.9 -24.7	N	07 59.1 -14.0	10			
11	345 25.9 -00.3	S	23 26.3 +00.0	296 16.1 -00.3	S	17 54.1 -00.9	89 39.2 -24.7	N	07 45.1 -14.0	11			
12	0 25.6 -00.3	S	23 26.3 +00.0	311 15.8 -00.3	S	17 53.2 -01.0	104 14.5 -24.6	N	07 31.1 -14.0	12			
13	15 25.3 -00.3	S	23 26.3 +00.0	326 15.5 -00.2	S	17 52.2 -00.9	118 49.9 -24.6	N	07 17.1 -14.1	13			
14	30 25.0 -00.3	S	23 26.3 +00.0	341 15.3 -00.3	S	17 51.3 -01.0	133 25.3 -24.5	N	07 03.0 -14.1	14			
15	45 24.7 -00.3	S	23 26.3 +00.0	356 15.0 -00.3	S	17 50.3 -00.9	148 00.8 -24.5	N	06 48.9 -14.0	15			
16	60 24.4 -00.3	S	23 26.3 +00.0	11 14.7 -00.3	S	17 49.4 -01.0	162 36.3 -24.4	N	06 34.9 -14.1	16			
17	75 24.1 -00.3	S	23 26.3 +00.0	26 14.4 -00.3	S	17 48.4 -00.9	177 11.9 -24.4	N	06 20.8 -14.1	17			
18	90 23.8 -00.3	S	23 26.3 +00.0	41 14.1 -00.3	S	17 47.5 -01.0	191 47.5 -24.4	N	06 06.7 -14.1	18			
19	105 23.5 -00.3	S	23 26.3 +00.0	56 13.8 -00.3	S	17 46.5 -00.9	206 23.1 -24.3	N	05 52.6 -14.2	19			
20	120 23.2 -00.4	S	23 26.3 -00.1	71 13.5 -00.3	S	17 45.6 -01.0	220 58.8 -24.3	N	05 38.4 -14.1	20			
21	135 22.8 -00.3	S	23 26.2 +00.0	86 13.2 -00.3	S	17 44.6 -00.9	235 34.5 -24.2	N	05 24.3 -14.2	21			
22	150 22.5 -00.3	S	23 26.2 +00.0	101 12.9 -00.2	S	17 43.7 -01.0	250 10.3 -24.2	N	05 10.1 -14.1	22			
23	165 22.2 -00.3	S	23 26.2 +00.0	116 12.7 -00.3	S	17 42.7 -01.0	264 46.1 -24.1	N	04 56.0 -14.2	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° 090° 090° 090° 090° 089° Greenwich Culmination Time: 11:58	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 041° 041° 041° 041° 040° 040° Greenwich Culmination Time: 15:15	UT 02 06 10 14 18 22 SD 15'0 15'0 15'0 14'9 14'9 14'9 HP 55'1 55'0 54'9 54'8 54'8 54'7 SHA 198° 196° 195° 193° 191° 189° Greenwich Culmination Time: 04:51										
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	321 59.3 +02.9	N	22 25.2 +00.2	16 47.2 +02.8	N	21 54.5 -00.1	104 13.5 +02.4	S	08 13.7 +00.0	00			
01	337 02.2 +03.0	N	22 25.4 +00.2	31 50.0 +02.8	N	21 54.4 +00.0	119 15.9 +02.3	S	08 13.7 -00.1	01			
02	352 05.2 +02.9	N	22 25.6 +00.3	46 52.8 +02.8	N	21 54.4 +00.0	134 18.2 +02.3	S	08 13.6 +00.0	02			
03	7 08.1 +03.0	N	22 25.9 +00.2	61 55.6 +02.8	N	21 54.4 -00.1	149 20.5 +02.3	S	08 13.6 -00.1	03			
04	22 11.1 +02.9	N	22 26.1 +00.2	76 58.4 +02.8	N	21 54.3 +00.0	164 22.8 +02.4	S	08 13.5 -00.1	04			
05	37 14.0 +03.0	N	22 26.3 +00.3	92 01.2 +02.8	N	21 54.3 +00.0	179 25.2 +02.3	S	08 13.4 +00.0	05			
06	52 17.0 +02.9	N	22 26.6 +00.2	107 04.0 +02.8	N	21 54.3 +00.0	194 27.5 +02.3	S	08 13.4 -00.1	06			
07	67 19.9 +03.0	N	22 26.8 +00.2	122 06.8 +02.8	N	21 54.3 -00.1	209 29.8 +02.3	S	08 13.3 -00.1	07			
08	82 22.9 +02.9	N	22 27.0 +00.2	137 09.6 +02.8	N	21 54.2 +00.0	224 32.1 +02.4	S	08 13.2 +00.0	08			
09	97 25.8 +03.0	N	22 27.2 +00.3	152 12.4 +02.8	N	21 54.2 +00.0	239 34.5 +02.3	S	08 13.2 -00.1	09			
10	112 28.8 +02.9	N	22 27.5 +00.2	167 15.2 +02.8	N	21 54.2 -00.1	254 36.8 +02.3	S	08 13.1 -00.1	10			
11	127 31.7 +03.0	N	22 27.7 +00.2	182 18.0 +02.9	N	21 54.1 +00.0	269 39.1 +02.3	S	08 13.0 +00.0	11			
12	142 34.7 +03.0	N	22 27.9 +00.3	197 20.9 +02.8	N	21 54.1 +00.0	284 41.4 +02.4	S	08 13.0 -00.1	12			
13	157 37.7 +02.9	N	22 28.2 +00.2	212 23.7 +02.8	N	21 54.1 +00.0	299 43.8 +02.3	S	08 12.9 +00.0	13			
14	172 40.6 +03.0	N	22 28.4 +00.2	227 26.5 +02.8	N	21 54.1 -00.1	314 46.1 +02.3	S	08 12.9 -00.1	14			
15	187 43.6 +02.9	N	22 28.6 +00.3	242 29.3 +02.8	N	21 54.0 +00.0	329 48.4 +02.3	S	08 12.8 -00.1	15			
16	202 46.5 +03.0	N	22 28.9 +00.2	257 32.1 +02.8	N	21 54.0 +00.0	344 50.7 +02.4	S	08 12.7 +00.0	16			
17	217 49.5 +03.0	N	22 29.1 +00.2	272 34.9 +02.8	N	21 54.0 -00.1	359 53.1 +02.3	S	08 12.7 -00.1	17			
18	232 52.5 +02.9	N	22 29.3 +00.2	287 37.7 +02.8	N	21 53.9 +00.0	14 55.4 +02.3	S	08 12.6 -00.1	18			
19	247 55.4 +03.0	N	22 29.5 +00.3	302 40.5 +02.8	N	21 53.9 +00.0	29 57.7 +02.3	S	08 12.5 +00.0	19			
20	262 58.4 +03.0	N	22 29.8 +00.2	317 43.3 +02.8	N	21 53.9 -00.1	45 00.0 +02.4	S	08 12.5 -00.1	20			
21	278 01.4 +03.0	N	22 30.0 +00.2	332 46.1 +02.8	N	21 53.8 +00.0	60 02.4 +02.3	S	08 12.4 -00.1	21			
22	293 04.4 +02.9	N	22 30.2 +00.3	347 48.9 +02.8	N	21 53.8 +00.0	75 04.7 +02.3	S	08 12.3 +00.0	22			
23	308 07.3 +03.0	N	22 30.5 +00.2	2 51.7 +02.8	N	21 53.8 +00.0	90 07.0 +02.3	S	08 12.3 -00.1	23			
	UT 02 06 10 14 18 22 SD 00'1 00'1 00'1 00'1 00'1 00'1 HP 00'2 00'2 00'2 00'2 00'2 00'2 SHA 232° 232° 232° 232° 232° 232° Greenwich Culmination Time: 02:31	UT 02 06 10 14 18 22 SD 00'4 00'4 00'4 00'4 00'4 00'4 HP 00'0 00'0 00'0 00'0 00'0 00'0 SHA 287° 287° 287° 287° 287° 287° Greenwich Culmination Time: 22:48	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 014° 014° 014° 014° 014° 014° Greenwich Culmination Time: 17:00										

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	180	21.9 -00.3	S 23 26.2	+00.0	131	12.4 -00.3	S 17 41.7	-00.9	279	22.0 -24.2	N 04 41.8	-14.2	00
01	195	21.6 -00.3	S 23 26.2	+00.0	146	12.1 -00.3	S 17 40.8	-01.0	293	57.8 -24.0	N 04 27.6	-14.1	01
02	210	21.3 -00.3	S 23 26.2	+00.0	161	11.8 -00.3	S 17 39.8	-00.9	308	33.8 -24.1	N 04 13.5	-14.2	02
03	225	21.0 -00.3	S 23 26.2	+00.0	176	11.5 -00.3	S 17 38.9	-01.0	323	09.7 -24.0	N 03 59.3	-14.2	03
04	240	20.7 -00.3	S 23 26.2	-00.1	191	11.2 -00.2	S 17 37.9	-00.9	337	45.7 -24.0	N 03 45.1	-14.2	04
05	255	20.4 -00.4	S 23 26.1	+00.0	206	11.0 -00.3	S 17 37.0	-01.0	352	21.7 -24.0	N 03 30.9	-14.2	05
06	270	20.0 -00.3	S 23 26.1	+00.0	221	10.7 -00.3	S 17 36.0	-01.0	6	57.7 -23.9	N 03 16.7	-14.2	06
07	285	19.7 -00.3	S 23 26.1	+00.0	236	10.4 -00.3	S 17 35.0	-00.9	21	33.8 -23.9	N 03 02.5	-14.2	07
08	300	19.4 -00.3	S 23 26.1	+00.0	251	10.1 -00.3	S 17 34.1	-01.0	36	09.9 -23.9	N 02 48.3	-14.2	08
09	315	19.1 -00.3	S 23 26.1	+00.0	266	09.8 -00.2	S 17 33.1	-00.9	50	46.0 -23.8	N 02 34.1	-14.3	09
10	330	18.8 -00.3	S 23 26.1	-00.1	281	09.6 -00.3	S 17 32.2	-01.0	65	22.2 -23.9	N 02 19.8	-14.2	10
11	345	18.5 -00.3	S 23 26.0	+00.0	296	09.3 -00.3	S 17 31.2	-01.0	79	58.3 -23.8	N 02 05.6	-14.2	11
12	0	18.2 -00.3	S 23 26.0	+00.0	311	09.0 -00.3	S 17 30.2	-00.9	94	34.5 -23.8	N 01 51.4	-14.2	12
13	15	17.9 -00.3	S 23 26.0	+00.0	326	08.7 -00.2	S 17 29.3	-01.0	109	10.7 -23.8	N 01 37.2	-14.2	13
14	30	17.6 -00.4	S 23 26.0	-00.1	341	08.5 -00.3	S 17 28.3	-01.0	123	46.9 -23.7	N 01 23.0	-14.2	14
15	45	17.2 -00.3	S 23 25.9	+00.0	356	08.2 -00.3	S 17 27.3	-00.9	138	23.2 -23.8	N 01 08.8	-14.2	15
16	60	16.9 -00.3	S 23 25.9	+00.0	11	07.9 -00.2	S 17 26.4	-01.0	152	59.4 -23.7	N 00 54.6	-14.2	16
17	75	16.6 -00.3	S 23 25.9	+00.0	26	07.7 -00.3	S 17 25.4	-01.0	167	35.7 -23.7	N 00 40.4	-14.2	17
18	90	16.3 -00.3	S 23 25.9	-00.1	41	07.4 -00.3	S 17 24.4	-00.9	182	12.0 -23.7	N 00 26.2	-14.2	18
19	105	16.0 -00.3	S 23 25.8	+00.0	56	07.1 -00.2	S 17 23.5	-01.0	196	48.3 -23.7	N 00 12.0	-14.2	19
20	120	15.7 -00.3	S 23 25.8	+00.0	71	06.9 -00.3	S 17 22.5	-01.0	211	24.6 -23.7	S 00 02.2	+14.2	20
21	135	15.4 -00.3	S 23 25.8	+00.0	86	06.6 -00.3	S 17 21.5	-00.9	226	00.9 -23.6	S 00 16.4	+14.2	21
22	150	15.1 -00.3	S 23 25.8	-00.1	101	06.3 -00.2	S 17 20.6	-01.0	240	37.3 -23.7	S 00 30.6	+14.1	22
23	165	14.8 -00.4	S 23 25.7	+00.0	116	06.1 -00.3	S 17 19.6	-01.0	255	13.6 -23.7	S 00 44.7	+14.2	23
	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 14'9 14'9 14'8 14'8 14'8 14'8				
	HP 00'1 00'1 00'1 00'1 00'1 00'1								HP 54'6 54'6 54'5 54'4 54'4 54'4				
	SHA 089° 089° 089° 089° 088° 088°								SHA 187° 186° 184° 182° 180° 179°				
	Greenwich Culmination Time: 11:58								Greenwich Culmination Time: 15:15				
UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	323	10.3 +03.0	N 22 30.7	+00.2	17	54.5 +02.8	N 21 53.8	-00.1	105	09.3 +02.4	S 08 12.2	-00.1	00
01	338	13.3 +03.0	N 22 30.9	+00.3	32	57.3 +02.8	N 21 53.7	+00.0	120	11.7 +02.3	S 08 12.1	+00.0	01
02	353	16.3 +03.0	N 22 31.2	+00.2	48	00.1 +02.8	N 21 53.7	+00.0	135	14.0 +02.3	S 08 12.1	-00.1	02
03	8	19.3 +02.9	N 22 31.4	+00.2	63	02.9 +02.8	N 21 53.7	-00.1	150	16.3 +02.3	S 08 12.0	-00.1	03
04	23	22.2 +03.0	N 22 31.6	+00.3	78	05.7 +02.8	N 21 53.6	+00.0	165	18.6 +02.4	S 08 11.9	+00.0	04
05	38	25.2 +03.0	N 22 31.9	+00.2	93	08.5 +02.8	N 21 53.6	+00.0	180	21.0 +02.3	S 08 11.9	-00.1	05
06	53	28.2 +03.0	N 22 32.1	+00.2	108	11.3 +02.8	N 21 53.6	+00.0	195	23.3 +02.3	S 08 11.8	+00.0	06
07	68	31.2 +03.0	N 22 32.3	+00.3	123	14.1 +02.8	N 21 53.6	-00.1	210	25.6 +02.3	S 08 11.8	-00.1	07
08	83	34.2 +03.0	N 22 32.6	+00.2	138	16.9 +02.8	N 21 53.5	+00.0	225	27.9 +02.3	S 08 11.7	-00.1	08
09	98	37.2 +03.0	N 22 32.8	+00.3	153	19.7 +02.8	N 21 53.5	+00.0	240	30.2 +02.4	S 08 11.6	+00.0	09
10	113	40.2 +03.0	N 22 33.1	+00.2	168	22.5 +02.8	N 21 53.5	-00.1	255	32.6 +02.3	S 08 11.6	-00.1	10
11	128	43.2 +03.0	N 22 33.3	+00.2	183	25.3 +02.8	N 21 53.4	+00.0	270	34.9 +02.3	S 08 11.5	-00.1	11
12	143	46.2 +02.9	N 22 33.5	+00.3	198	28.1 +02.8	N 21 53.4	+00.0	285	37.2 +02.3	S 08 11.4	+00.0	12
13	158	49.1 +03.0	N 22 33.8	+00.2	213	30.9 +02.8	N 21 53.4	+00.0	300	39.5 +02.4	S 08 11.4	-00.1	13
14	173	52.1 +03.0	N 22 34.0	+00.2	228	33.7 +02.8	N 21 53.4	-00.1	315	41.9 +02.3	S 08 11.3	-00.1	14
15	188	55.1 +03.0	N 22 34.2	+00.3	243	36.5 +02.8	N 21 53.3	+00.0	330	44.2 +02.3	S 08 11.2	+00.0	15
16	203	58.1 +03.0	N 22 34.5	+00.2	258	39.3 +02.8	N 21 53.3	+00.0	345	46.5 +02.3	S 08 11.2	-00.1	16
17	219	01.1 +03.0	N 22 34.7	+00.3	273	42.1 +02.8	N 21 53.3	-00.1	0	48.8 +02.3	S 08 11.1	-00.1	17
18	234	04.1 +03.1	N 22 35.0	+00.2	288	44.9 +02.8	N 21 53.2	+00.0	15	51.1 +02.4	S 08 11.0	+00.0	18
19	249	07.2 +03.0	N 22 35.2	+00.2	303	47.7 +02.8	N 21 53.2	+00.0	30	53.5 +02.3	S 08 11.0	-00.1	19
20	264	10.2 +03.0	N 22 35.4	+00.3	318	50.5 +02.8	N 21 53.2	+00.0	45	55.8 +02.3	S 08 10.9	-00.1	20
21	279	13.2 +03.0	N 22 35.7	+00.2	333	53.3 +02.8	N 21 53.2	-00.1	60	58.1 +02.3	S 08 10.8	+00.0	21
22	294	16.2 +03.0	N 22 35.9	+00.2	348	56.1 +02.8	N 21 53.1	+00.0	76	00.4 +02.3	S 08 10.8	-00.1	22
23	309	19.2 +03.0	N 22 36.1	+00.3	3	58.9 +02.8	N 21 53.1	+00.0	91	02.7 +02.4	S 08 10.7	-00.1	23
	UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				UT 02 06 10 14 18 22				
	SD 00'1 00'1 00'1 00'1 00'1 00'1				SD 00'4 00'4 00'4 00'4 00'4 00'4				SD 00'1 00'1 00'1 00'1 00'1 00'1				
	HP 00'2 00'2 00'2 00'2 00'2 00'2				HP 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 232° 232° 232° 232° 232° 232°				SHA 287° 287° 287° 287° 287° 287°				SHA 014° 014° 014° 014° 014° 014°				
	Greenwich Culmination Time: 02:26				Greenwich Culmination Time: 22:44				Greenwich Culmination Time: 16:56				

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 14.4 -00.3	S	23 25.7 +00.0	131 05.8 -00.3	S	17 18.6 -00.9	269 49.9 -23.6	S	00 58.9 +14.2	00			
01	195 14.1 -00.3	S	23 25.7 -00.1	146 05.5 -00.2	S	17 17.7 -01.0	284 26.3 -23.6	S	01 13.1 +14.1	01			
02	210 13.8 -00.3	S	23 25.6 +00.0	161 05.3 -00.3	S	17 16.7 -01.0	299 02.7 -23.7	S	01 27.2 +14.1	02			
03	225 13.5 -00.3	S	23 25.6 +00.0	176 05.0 -00.2	S	17 15.7 -01.0	313 39.0 -23.6	S	01 41.3 +14.2	03			
04	240 13.2 -00.3	S	23 25.6 -00.1	191 04.8 -00.3	S	17 14.7 -00.9	328 15.4 -23.7	S	01 55.5 +14.1	04			
05	255 12.9 -00.3	S	23 25.5 +00.0	206 04.5 -00.3	S	17 13.8 -01.0	342 51.7 -23.6	S	02 09.6 +14.1	05			
06	270 12.6 -00.3	S	23 25.5 +00.0	221 04.2 -00.2	S	17 12.8 -01.0	357 28.1 -23.6	S	02 23.7 +14.1	06			
07	285 12.3 -00.3	S	23 25.5 -00.1	236 04.0 -00.3	S	17 11.8 -01.0	12 04.5 -23.7	S	02 37.8 +14.1	07			
08	300 12.0 -00.3	S	23 25.4 +00.0	251 03.7 -00.2	S	17 10.8 -00.9	26 40.8 -23.6	S	02 51.9 +14.0	08			
09	315 11.7 -00.4	S	23 25.4 -00.1	266 03.5 -00.3	S	17 09.9 -01.0	41 17.2 -23.7	S	03 05.9 +14.1	09			
10	330 11.3 -00.3	S	23 25.3 +00.0	281 03.2 -00.2	S	17 08.9 -01.0	55 53.5 -23.6	S	03 20.0 +14.0	10			
11	345 11.0 -00.3	S	23 25.3 +00.0	296 03.0 -00.3	S	17 07.9 -01.0	70 29.9 -23.7	S	03 34.0 +14.0	11			
12	0 10.7 -00.3	S	23 25.3 -00.1	311 02.7 -00.2	S	17 06.9 -00.9	85 06.2 -23.7	S	03 48.0 +14.0	12			
13	15 10.4 -00.3	S	23 25.2 +00.0	326 02.5 -00.3	S	17 06.0 -01.0	99 42.5 -23.7	S	04 02.0 +14.0	13			
14	30 10.1 -00.3	S	23 25.2 -00.1	341 02.2 -00.2	S	17 05.0 -01.0	114 18.8 -23.7	S	04 16.0 +14.0	14			
15	45 09.8 -00.3	S	23 25.1 +00.0	356 02.0 -00.3	S	17 04.0 -01.0	128 55.1 -23.7	S	04 30.0 +13.9	15			
16	60 09.5 -00.3	S	23 25.1 -00.1	11 01.7 -00.2	S	17 03.0 -01.0	143 31.4 -23.7	S	04 43.9 +14.0	16			
17	75 09.2 -00.3	S	23 25.0 +00.0	26 01.5 -00.3	S	17 02.0 -00.9	158 07.7 -23.7	S	04 57.9 +13.9	17			
18	90 08.9 -00.4	S	23 25.0 +00.0	41 01.2 -00.2	S	17 01.1 -01.0	172 44.0 -23.8	S	05 11.8 +13.9	18			
19	105 08.5 -00.3	S	23 25.0 -00.1	56 01.0 -00.3	S	17 00.1 -01.0	187 20.2 -23.8	S	05 25.7 +13.9	19			
20	120 08.2 -00.3	S	23 24.9 +00.0	71 00.7 -00.2	S	16 59.1 -01.0	201 56.4 -23.8	S	05 39.6 +13.8	20			
21	135 07.9 -00.3	S	23 24.9 -00.1	86 00.5 -00.3	S	16 58.1 -01.0	216 32.6 -23.8	S	05 53.4 +13.9	21			
22	150 07.6 -00.3	S	23 24.8 +00.0	101 00.2 -00.2	S	16 57.1 -01.0	231 08.8 -23.8	S	06 07.3 +13.8	22			
23	165 07.3 -00.3	S	23 24.8 -00.1	115 60.0 -00.3	S	16 56.1 -01.0	245 45.0 -23.9	S	06 21.1 +13.8	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'3 16'3 16'3 16'3 16'3 16'3			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 54'3 54'3 54'3 54'2 54'2 54'2						
	SHA 088° 088° 088° 088° 087° 087°			SHA 039° 039° 039° 038° 038° 038°			SHA 177° 175° 173° 172° 170° 168°						
	Greenwich Culmination Time: 11:59			Greenwich Culmination Time: 15:15			Greenwich Culmination Time: 06:10						
UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	324 22.2 +03.0	N	22 36.4 +00.2	19 01.7 +02.8	N	21 53.1 -00.1	106 05.1 +02.3	S	08 10.6 +00.0	00			
01	339 25.2 +03.0	N	22 36.6 +00.3	34 04.5 +02.7	N	21 53.0 +00.0	121 07.4 +02.3	S	08 10.6 -00.1	01			
02	354 28.2 +03.1	N	22 36.9 +00.2	49 07.2 +02.8	N	21 53.0 +00.0	136 09.7 +02.3	S	08 10.5 -00.1	02			
03	9 31.3 +03.0	N	22 37.1 +00.2	64 10.0 +02.8	N	21 53.0 +00.0	151 12.0 +02.3	S	08 10.4 +00.0	03			
04	24 34.3 +03.0	N	22 37.3 +00.3	79 12.8 +02.8	N	21 53.0 -00.1	166 14.3 +02.4	S	08 10.4 -00.1	04			
05	39 37.3 +03.0	N	22 37.6 +00.2	94 15.6 +02.8	N	21 52.9 +00.0	181 16.7 +02.3	S	08 10.3 -00.1	05			
06	54 40.3 +03.0	N	22 37.8 +00.3	109 18.4 +02.8	N	21 52.9 +00.0	196 19.0 +02.3	S	08 10.2 +00.0	06			
07	69 43.3 +03.1	N	22 38.1 +00.2	124 21.2 +02.8	N	21 52.9 -00.1	211 21.3 +02.3	S	08 10.2 -00.1	07			
08	84 46.4 +03.0	N	22 38.3 +00.2	139 24.0 +02.8	N	21 52.8 +00.0	226 23.6 +02.3	S	08 10.1 -00.1	08			
09	99 49.4 +03.0	N	22 38.5 +00.3	154 26.8 +02.8	N	21 52.8 +00.0	241 25.9 +02.4	S	08 10.0 +00.0	09			
10	114 52.4 +03.0	N	22 38.8 +00.2	169 29.6 +02.8	N	21 52.8 +00.0	256 28.3 +02.3	S	08 10.0 -00.1	10			
11	129 55.4 +03.1	N	22 39.0 +00.3	184 32.4 +02.8	N	21 52.8 -00.1	271 30.6 +02.3	S	08 09.9 -00.1	11			
12	144 58.5 +03.0	N	22 39.3 +00.2	199 35.2 +02.8	N	21 52.7 +00.0	286 32.9 +02.3	S	08 09.8 +00.0	12			
13	160 01.5 +03.0	N	22 39.5 +00.3	214 38.0 +02.8	N	21 52.7 +00.0	301 35.2 +02.3	S	08 09.8 -00.1	13			
14	175 04.5 +03.1	N	22 39.8 +00.2	229 40.8 +02.8	N	21 52.7 -00.1	316 37.5 +02.4	S	08 09.7 -00.1	14			
15	190 07.6 +03.0	N	22 40.0 +00.2	244 43.6 +02.8	N	21 52.6 +00.0	331 39.9 +02.3	S	08 09.6 +00.0	15			
16	205 10.6 +03.0	N	22 40.2 +00.3	259 46.4 +02.8	N	21 52.6 +00.0	346 42.2 +02.3	S	08 09.6 -00.1	16			
17	220 13.6 +03.1	N	22 40.5 +00.2	274 49.2 +02.8	N	21 52.6 +00.0	1 44.5 +02.3	S	08 09.5 -00.1	17			
18	235 16.7 +03.0	N	22 40.7 +00.3	289 52.0 +02.8	N	21 52.6 -00.1	16 46.8 +02.3	S	08 09.4 +00.0	18			
19	250 19.7 +03.1	N	22 41.0 +00.2	304 54.8 +02.8	N	21 52.5 +00.0	31 49.1 +02.3	S	08 09.4 -00.1	19			
20	265 22.8 +03.0	N	22 41.2 +00.3	319 57.6 +02.8	N	21 52.5 +00.0	46 51.4 +02.4	S	08 09.3 -00.1	20			
21	280 25.8 +03.1	N	22 41.5 +00.2	335 00.4 +02.7	N	21 52.5 -00.1	61 53.8 +02.3	S	08 09.2 +00.0	21			
22	295 28.9 +03.0	N	22 41.7 +00.3	350 03.1 +02.8	N	21 52.4 +00.0	76 56.1 +02.3	S	08 09.2 -00.1	22			
23	310 31.9 +03.1	N	22 42.0 +00.2	5 05.9 +02.8	N	21 52.4 +00.0	91 58.4 +02.3	S	08 09.1 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 232° 232° 232° 232° 233° 233°			SHA 287° 287° 287° 287° 287° 287°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 02:22			Greenwich Culmination Time: 22:39			Greenwich Culmination Time: 16:53						

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	07.0	-00.3	S 23 24.7	+00.0	130	59.7	-00.2	S 16 55.1	-00.9	260	21.1	-23.8	S 06 34.9	+13.7	00
01	195	06.7	-00.3	S 23 24.7	-00.1	145	59.5	-00.2	S 16 54.2	-01.0	274	57.3	-23.9	S 06 48.6	+13.8	01
02	210	06.4	-00.3	S 23 24.6	-00.1	160	59.3	-00.3	S 16 53.2	-01.0	289	33.4	-24.0	S 07 02.4	+13.7	02
03	225	06.1	-00.4	S 23 24.5	+00.0	175	59.0	-00.2	S 16 52.2	-01.0	304	09.4	-23.9	S 07 16.1	+13.7	03
04	240	05.7	-00.3	S 23 24.5	-00.1	190	58.8	-00.2	S 16 51.2	-01.0	318	45.5	-24.0	S 07 29.8	+13.6	04
05	255	05.4	-00.3	S 23 24.4	+00.0	205	58.6	-00.3	S 16 50.2	-01.0	333	21.5	-24.0	S 07 43.4	+13.7	05
06	270	05.1	-00.3	S 23 24.4	-00.1	220	58.3	-00.2	S 16 49.2	-01.0	347	57.5	-24.1	S 07 57.1	+13.6	06
07	285	04.8	-00.3	S 23 24.3	+00.0	235	58.1	-00.3	S 16 48.2	-01.0	2	33.4	-24.0	S 08 10.7	+13.5	07
08	300	04.5	-00.3	S 23 24.3	-00.1	250	57.8	-00.2	S 16 47.2	-01.0	17	09.4	-24.1	S 08 24.2	+13.6	08
09	315	04.2	-00.3	S 23 24.2	+00.0	265	57.6	-00.2	S 16 46.2	-00.9	31	45.3	-24.2	S 08 37.8	+13.5	09
10	330	03.9	-00.3	S 23 24.2	-00.1	280	57.4	-00.3	S 16 45.3	-01.0	46	21.1	-24.1	S 08 51.3	+13.5	10
11	345	03.6	-00.3	S 23 24.1	-00.1	295	57.1	-00.2	S 16 44.3	-01.0	60	57.0	-24.3	S 09 04.8	+13.5	11
12	0	03.3	-00.3	S 23 24.0	+00.0	310	56.9	-00.2	S 16 43.3	-01.0	75	32.7	-24.2	S 09 18.3	+13.4	12
13	15	03.0	-00.4	S 23 24.0	-00.1	325	56.7	-00.2	S 16 42.3	-01.0	90	08.5	-24.3	S 09 31.7	+13.4	13
14	30	02.6	-00.3	S 23 23.9	-00.1	340	56.5	-00.3	S 16 41.3	-01.0	104	44.2	-24.3	S 09 45.1	+13.3	14
15	45	02.3	-00.3	S 23 23.8	+00.0	355	56.2	-00.2	S 16 40.3	-01.0	119	19.9	-24.4	S 09 58.4	+13.4	15
16	60	02.0	-00.3	S 23 23.8	-00.1	10	56.0	-00.2	S 16 39.3	-01.0	133	55.5	-24.4	S 10 11.8	+13.3	16
17	75	01.7	-00.3	S 23 23.7	+00.0	25	55.8	-00.3	S 16 38.3	-01.0	148	31.1	-24.4	S 10 25.1	+13.2	17
18	90	01.4	-00.3	S 23 23.7	-00.1	40	55.5	-00.2	S 16 37.3	-01.0	163	06.7	-24.5	S 10 38.3	+13.2	18
19	105	01.1	-00.3	S 23 23.6	-00.1	55	55.3	-00.2	S 16 36.3	-01.0	177	42.2	-24.6	S 10 51.5	+13.2	19
20	120	00.8	-00.3	S 23 23.5	+00.0	70	55.1	-00.2	S 16 35.3	-01.0	192	17.6	-24.5	S 11 04.7	+13.2	20
21	135	00.5	-00.3	S 23 23.5	-00.1	85	54.9	-00.2	S 16 34.3	-01.0	206	53.1	-24.7	S 11 17.9	+13.1	21
22	150	00.2	-00.4	S 23 23.4	-00.1	100	54.7	-00.3	S 16 33.3	-01.0	221	28.4	-24.6	S 11 31.0	+13.1	22
23	164	59.8	-00.3	S 23 23.3	-00.1	115	54.4	-00.2	S 16 32.3	-01.0	236	03.8	-24.8	S 11 44.1	+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 16'3 16'3 16'3 16'3 16'3 16'3					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 54'2 54'2 54'2 54'2					
	SHA 087° 087° 087° 086° 086° 086°					SHA 038° 038° 038° 037° 037° 037°					SHA 166° 165° 163° 161° 159° 158°					
	Greenwich Culmination Time: 11:59					Greenwich Culmination Time: 15:16					Greenwich Culmination Time: 06:49					

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT			
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec				
00	325	35.0	+03.0	N 22 42.2	+00.2	20	08.7	+02.8	N 21 52.4	+00.0	107	00.7	+02.3	S 08 09.0	+00.0	00
01	340	38.0	+03.1	N 22 42.4	+00.3	35	11.5	+02.8	N 21 52.4	-00.1	122	03.0	+02.4	S 08 09.0	-00.1	01
02	355	41.1	+03.0	N 22 42.7	+00.2	50	14.3	+02.8	N 21 52.3	+00.0	137	05.4	+02.3	S 08 08.9	-00.1	02
03	10	44.1	+03.1	N 22 42.9	+00.3	65	17.1	+02.8	N 21 52.3	+00.0	152	07.7	+02.3	S 08 08.8	+00.0	03
04	25	47.2	+03.0	N 22 43.2	+00.2	80	19.9	+02.8	N 21 52.3	-00.1	167	10.0	+02.3	S 08 08.8	-00.1	04
05	40	50.2	+03.1	N 22 43.4	+00.3	95	22.7	+02.8	N 21 52.2	+00.0	182	12.3	+02.3	S 08 08.7	-00.1	05
06	55	53.3	+03.0	N 22 43.7	+00.2	110	25.5	+02.8	N 21 52.2	+00.0	197	14.6	+02.3	S 08 08.6	+00.0	06
07	70	56.3	+03.1	N 22 43.9	+00.3	125	28.3	+02.8	N 21 52.2	+00.0	212	16.9	+02.3	S 08 08.6	-00.1	07
08	85	59.4	+03.1	N 22 44.2	+00.2	140	31.1	+02.8	N 21 52.2	-00.1	227	19.2	+02.4	S 08 08.5	-00.1	08
09	101	02.5	+03.0	N 22 44.4	+00.3	155	33.9	+02.7	N 21 52.1	+00.0	242	21.6	+02.3	S 08 08.4	-00.1	09
10	116	05.5	+03.1	N 22 44.7	+00.2	170	36.6	+02.8	N 21 52.1	+00.0	257	23.9	+02.3	S 08 08.3	+00.0	10
11	131	08.6	+03.1	N 22 44.9	+00.3	185	39.4	+02.8	N 21 52.1	-00.1	272	26.2	+02.3	S 08 08.3	-00.1	11
12	146	11.7	+03.0	N 22 45.2	+00.2	200	42.2	+02.8	N 21 52.0	+00.0	287	28.5	+02.3	S 08 08.2	-00.1	12
13	161	14.7	+03.1	N 22 45.4	+00.3	215	45.0	+02.8	N 21 52.0	+00.0	302	30.8	+02.3	S 08 08.1	+00.0	13
14	176	17.8	+03.1	N 22 45.7	+00.2	230	47.8	+02.8	N 21 52.0	+00.0	317	33.1	+02.4	S 08 08.1	-00.1	14
15	191	20.9	+03.0	N 22 45.9	+00.3	245	50.6	+02.8	N 21 52.0	-00.1	332	35.5	+02.3	S 08 08.0	-00.1	15
16	206	23.9	+03.1	N 22 46.2	+00.2	260	53.4	+02.8	N 21 51.9	+00.0	347	37.8	+02.3	S 08 07.9	+00.0	16
17	221	27.0	+03.1	N 22 46.4	+00.3	275	56.2	+02.8	N 21 51.9	+00.0	2	40.1	+02.3	S 08 07.9	-00.1	17
18	236	30.1	+03.1	N 22 46.7	+00.2	290	59.0	+02.8	N 21 51.9	-00.1	17	42.4	+02.3	S 08 07.8	-00.1	18
19	251	33.2	+03.0	N 22 46.9	+00.3	306	01.8	+02.7	N 21 51.8	+00.0	32	44.7	+02.3	S 08 07.7	+00.0	19
20	266	36.2	+03.1	N 22 47.2	+00.2	321	04.5	+02.8	N 21 51.8	+00.0	47	47.0	+02.3	S 08 07.7	-00.1	20
21	281	39.3	+03.1	N 22 47.4	+00.3	336	07.3	+02.8	N 21 51.8	+00.0	62	49.3	+02.4	S 08 07.6	-00.1	21
22	296	42.4	+03.1	N 22 47.7	+00.2	351	10.1	+02.8	N 21 51.8	-00.1	77	51.7	+02.3	S 08 07.5	+00.0	22
23	311	45.5	+03.1	N 22 47.9	+00.3	6	12.9	+02.8	N 21 51.7	+00.0	92	54.0	+02.3	S 08 07.5	-00.1	23
	UT 02 06 10 14 18 22					UT 02 06 10 14 18 22					UT 02 06 10 14 18 22					
	SD 00'1 00'1 00'1 00'1 00'1 00'1					SD 00'4 00'4 00'4 00'4 00'4 00'4					SD 00'1 00'1 00'1 00'1 00'1 00'1					
	HP 00'2 00'2 00'2 00'2 00'2 00'2					HP 00'0 00'0 00'0 00'0 00'0 00'0					HP 00'0 00'0 00'0 00'0 00'0 00'0					
	SHA 233° 233° 233° 233° 233° 233°					SHA 287° 287° 287° 287° 287° 287°					SHA 014° 014° 014° 014° 014° 014°					
	Greenwich Culmination Time: 02:17					Greenwich Culmination Time: 22:35					Greenwich Culmination Time: 16:49					

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	179 59.5 -00.3	S	23 23.2 +00.0	130 54.2 -00.2	S	16 31.3 -01.0	250 39.0 -24.7	S	11 57.1 +13.0	00			
01	194 59.2 -00.3	S	23 23.2 -00.1	145 54.0 -00.2	S	16 30.3 -01.0	265 14.3 -24.9	S	12 10.1 +12.9	01			
02	209 58.9 -00.3	S	23 23.1 -00.1	160 53.8 -00.2	S	16 29.3 -01.0	279 49.4 -24.9	S	12 23.0 +12.9	02			
03	224 58.6 -00.3	S	23 23.0 +00.0	175 53.6 -00.3	S	16 28.3 -01.0	294 24.5 -24.9	S	12 35.9 +12.9	03			
04	239 58.3 -00.3	S	23 23.0 -00.1	190 53.3 -00.2	S	16 27.3 -01.0	308 59.6 -25.0	S	12 48.8 +12.8	04			
05	254 58.0 -00.3	S	23 22.9 -00.1	205 53.1 -00.2	S	16 26.3 -01.0	323 34.6 -25.0	S	13 01.6 +12.8	05			
06	269 57.7 -00.3	S	23 22.8 -00.1	220 52.9 -00.2	S	16 25.3 -01.0	338 09.6 -25.1	S	13 14.4 +12.7	06			
07	284 57.4 -00.3	S	23 22.7 -00.1	235 52.7 -00.2	S	16 24.3 -01.0	352 44.5 -25.2	S	13 27.1 +12.7	07			
08	299 57.1 -00.4	S	23 22.6 +00.0	250 52.5 -00.2	S	16 23.3 -01.0	7 19.3 -25.2	S	13 39.8 +12.6	08			
09	314 56.7 -00.3	S	23 22.6 -00.1	265 52.3 -00.2	S	16 22.3 -01.1	21 54.1 -25.3	S	13 52.4 +12.6	09			
10	329 56.4 -00.3	S	23 22.5 -00.1	280 52.1 -00.2	S	16 21.2 -01.0	36 28.8 -25.3	S	14 05.0 +12.6	10			
11	344 56.1 -00.3	S	23 22.4 -00.1	295 51.9 -00.3	S	16 20.2 -01.0	51 03.5 -25.4	S	14 17.6 +12.4	11			
12	359 55.8 -00.3	S	23 22.3 +00.0	310 51.6 -00.2	S	16 19.2 -01.0	65 38.1 -25.5	S	14 30.0 +12.5	12			
13	14 55.5 -00.3	S	23 22.3 -00.1	325 51.4 -00.2	S	16 18.2 -01.0	80 12.6 -25.5	S	14 42.5 +12.4	13			
14	29 55.2 -00.3	S	23 22.2 -00.1	340 51.2 -00.2	S	16 17.2 -01.0	94 47.1 -25.6	S	14 54.9 +12.3	14			
15	44 54.9 -00.3	S	23 22.1 -00.1	355 51.0 -00.2	S	16 16.2 -01.0	109 21.5 -25.7	S	15 07.2 +12.3	15			
16	59 54.6 -00.3	S	23 22.0 -00.1	10 50.8 -00.2	S	16 15.2 -01.0	123 55.8 -25.7	S	15 19.5 +12.2	16			
17	74 54.3 -00.3	S	23 21.9 -00.1	25 50.6 -00.2	S	16 14.2 -01.0	138 30.1 -25.8	S	15 31.7 +12.2	17			
18	89 54.0 -00.3	S	23 21.8 +00.0	40 50.4 -00.2	S	16 13.2 -01.0	153 04.3 -25.8	S	15 43.9 +12.1	18			
19	104 53.7 -00.4	S	23 21.8 -00.1	55 50.2 -00.2	S	16 12.2 -01.1	167 38.5 -26.0	S	15 56.0 +12.1	19			
20	119 53.3 -00.3	S	23 21.7 -00.1	70 50.0 -00.2	S	16 11.1 -01.0	182 12.5 -26.0	S	16 08.1 +12.0	20			
21	134 53.0 -00.3	S	23 21.6 -00.1	85 49.8 -00.2	S	16 10.1 -01.0	196 46.5 -26.0	S	16 20.1 +11.9	21			
22	149 52.7 -00.3	S	23 21.5 -00.1	100 49.6 -00.2	S	16 09.1 -01.0	211 20.5 -26.2	S	16 32.0 +11.9	22			
23	164 52.4 -00.3	S	23 21.4 -00.1	115 49.4 -00.2	S	16 08.1 -01.0	225 54.3 -26.2	S	16 43.9 +11.8	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 00'2 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 54'3 54'3 54'3 54'4 54'4						
	SHA 086° 086° 086° 085° 085° 085°			SHA 037° 037° 036° 036° 036° 036°			SHA 156° 154° 152° 150° 148° 146°						
	Greenwich Culmination Time: 12:00			Greenwich Culmination Time: 15:16			Greenwich Culmination Time: 07:29						

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	326 48.6 +03.1	N	22 48.2 +00.2	21 15.7 +02.8	N	21 51.7 +00.0	107 56.3 +02.3	S	08 07.4 -00.1	00			
01	341 51.7 +03.0	N	22 48.4 +00.3	36 18.5 +02.8	N	21 51.7 -00.1	122 58.6 +02.3	S	08 07.3 +00.0	01			
02	356 54.7 +03.1	N	22 48.7 +00.2	51 21.3 +02.8	N	21 51.6 +00.0	138 00.9 +02.3	S	08 07.3 -00.1	02			
03	11 57.8 +03.1	N	22 48.9 +00.3	66 24.1 +02.8	N	21 51.6 +00.0	153 03.2 +02.3	S	08 07.2 -00.1	03			
04	27 00.9 +03.1	N	22 49.2 +00.2	81 26.9 +02.7	N	21 51.6 +00.0	168 05.5 +02.3	S	08 07.1 -00.1	04			
05	42 04.0 +03.1	N	22 49.4 +00.3	96 29.6 +02.8	N	21 51.6 -00.1	183 07.8 +02.4	S	08 07.0 +00.0	05			
06	57 07.1 +03.1	N	22 49.7 +00.2	111 32.4 +02.8	N	21 51.5 +00.0	198 10.2 +02.3	S	08 07.0 -00.1	06			
07	72 10.2 +03.1	N	22 49.9 +00.3	126 35.2 +02.8	N	21 51.5 +00.0	213 12.5 +02.3	S	08 06.9 -00.1	07			
08	87 13.3 +03.1	N	22 50.2 +00.2	141 38.0 +02.8	N	21 51.5 +00.0	228 14.8 +02.3	S	08 06.8 +00.0	08			
09	102 16.4 +03.1	N	22 50.4 +00.3	156 40.8 +02.8	N	21 51.5 -00.1	243 17.1 +02.3	S	08 06.8 -00.1	09			
10	117 19.5 +03.1	N	22 50.7 +00.2	171 43.6 +02.8	N	21 51.4 +00.0	258 19.4 +02.3	S	08 06.7 -00.1	10			
11	132 22.6 +03.1	N	22 50.9 +00.3	186 46.4 +02.7	N	21 51.4 +00.0	273 21.7 +02.3	S	08 06.6 +00.0	11			
12	147 25.7 +03.1	N	22 51.2 +00.2	201 49.1 +02.8	N	21 51.4 -00.1	288 24.0 +02.3	S	08 06.6 -00.1	12			
13	162 28.8 +03.1	N	22 51.4 +00.3	216 51.9 +02.8	N	21 51.3 +00.0	303 26.3 +02.4	S	08 06.5 -00.1	13			
14	177 31.9 +03.1	N	22 51.7 +00.3	231 54.7 +02.8	N	21 51.3 +00.0	318 28.7 +02.3	S	08 06.4 -00.1	14			
15	192 35.0 +03.1	N	22 52.0 +00.2	246 57.5 +02.8	N	21 51.3 +00.0	333 31.0 +02.3	S	08 06.3 +00.0	15			
16	207 38.1 +03.1	N	22 52.2 +00.3	262 00.3 +02.8	N	21 51.3 -00.1	348 33.3 +02.3	S	08 06.3 -00.1	16			
17	222 41.2 +03.1	N	22 52.5 +00.2	277 03.1 +02.8	N	21 51.2 +00.0	3 35.6 +02.3	S	08 06.2 -00.1	17			
18	237 44.3 +03.1	N	22 52.7 +00.3	292 05.9 +02.7	N	21 51.2 +00.0	18 37.9 +02.3	S	08 06.1 +00.0	18			
19	252 47.4 +03.2	N	22 53.0 +00.2	307 08.6 +02.8	N	21 51.2 -00.1	33 40.2 +02.3	S	08 06.1 -00.1	19			
20	267 50.6 +03.1	N	22 53.2 +00.3	322 11.4 +02.8	N	21 51.1 +00.0	48 42.5 +02.3	S	08 06.0 -00.1	20			
21	282 53.7 +03.1	N	22 53.5 +00.2	337 14.2 +02.8	N	21 51.1 +00.0	63 44.8 +02.3	S	08 05.9 +00.0	21			
22	297 56.8 +03.1	N	22 53.7 +00.3	352 17.0 +02.8	N	21 51.1 +00.0	78 47.1 +02.4	S	08 05.9 -00.1	22			
23	312 59.9 +03.1	N	22 54.0 +00.2	7 19.8 +02.8	N	21 51.1 -00.1	93 49.5 +02.3	S	08 05.8 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 233° 233° 233° 233° 233° 233°			SHA 287° 287° 287° 287° 287° 287°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 02:12			Greenwich Culmination Time: 22:30			Greenwich Culmination Time: 16:45						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	179 52.1 -00.3	S	23 21.3 -00.1	130 49.2 -00.2	S	16 07.1 -01.0	240 28.1 -26.3	S	16 55.7 +11.8	00			
01	194 51.8 -00.3	S	23 21.2 -00.1	145 49.0 -00.2	S	16 06.1 -01.0	255 01.8 -26.4	S	17 07.5 +11.7	01			
02	209 51.5 -00.3	S	23 21.1 -00.1	160 48.8 -00.2	S	16 05.1 -01.1	269 35.4 -26.4	S	17 19.2 +11.6	02			
03	224 51.2 -00.3	S	23 21.0 -00.1	175 48.6 -00.2	S	16 04.0 -01.0	284 09.0 -26.5	S	17 30.8 +11.6	03			
04	239 50.9 -00.3	S	23 20.9 -00.1	190 48.4 -00.2	S	16 03.0 -01.0	298 42.5 -26.6	S	17 42.4 +11.5	04			
05	254 50.6 -00.3	S	23 20.8 +00.0	205 48.2 -00.2	S	16 02.0 -01.0	313 15.9 -26.7	S	17 53.9 +11.5	05			
06	269 50.3 -00.4	S	23 20.8 -00.1	220 48.0 -00.2	S	16 01.0 -01.0	327 49.2 -26.8	S	18 05.4 +11.3	06			
07	284 49.9 -00.3	S	23 20.7 -00.1	235 47.8 -00.1	S	15 60.0 -01.1	342 22.4 -26.8	S	18 16.7 +11.3	07			
08	299 49.6 -00.3	S	23 20.6 -00.1	250 47.7 -00.2	S	15 58.9 -01.0	356 55.6 -26.9	S	18 28.0 +11.3	08			
09	314 49.3 -00.3	S	23 20.5 -00.1	265 47.5 -00.2	S	15 57.9 -01.0	11 28.7 -27.0	S	18 39.3 +11.2	09			
10	329 49.0 -00.3	S	23 20.4 -00.1	280 47.3 -00.2	S	15 56.9 -01.0	26 01.7 -27.1	S	18 50.5 +11.1	10			
11	344 48.7 -00.3	S	23 20.3 -00.1	295 47.1 -00.2	S	15 55.9 -01.0	40 34.6 -27.2	S	19 01.6 +11.0	11			
12	359 48.4 -00.3	S	23 20.2 -00.1	310 46.9 -00.2	S	15 54.9 -01.1	55 07.4 -27.3	S	19 12.6 +10.9	12			
13	14 48.1 -00.3	S	23 20.1 -00.1	325 46.7 -00.2	S	15 53.8 -01.0	69 40.1 -27.3	S	19 23.5 +10.9	13			
14	29 47.8 -00.3	S	23 20.0 -00.1	340 46.5 -00.2	S	15 52.8 -01.0	84 12.8 -27.4	S	19 34.4 +10.8	14			
15	44 47.5 -00.3	S	23 19.9 -00.1	355 46.3 -00.1	S	15 51.8 -01.0	98 45.4 -27.5	S	19 45.2 +10.7	15			
16	59 47.2 -00.3	S	23 19.8 -00.1	10 46.2 -00.2	S	15 50.8 -01.1	113 17.9 -27.6	S	19 55.9 +10.7	16			
17	74 46.9 -00.4	S	23 19.7 -00.1	25 46.0 -00.2	S	15 49.7 -01.0	127 50.3 -27.7	S	20 06.6 +10.6	17			
18	89 46.5 -00.3	S	23 19.6 -00.2	40 45.8 -00.2	S	15 48.7 -01.0	142 22.6 -27.8	S	20 17.2 +10.5	18			
19	104 46.2 -00.3	S	23 19.4 -00.1	55 45.6 -00.2	S	15 47.7 -01.0	156 54.8 -27.8	S	20 27.7 +10.4	19			
20	119 45.9 -00.3	S	23 19.3 -00.1	70 45.4 -00.1	S	15 46.7 -01.1	171 27.0 -28.0	S	20 38.1 +10.3	20			
21	134 45.6 -00.3	S	23 19.2 -00.1	85 45.3 -00.2	S	15 45.6 -01.0	185 59.0 -28.0	S	20 48.4 +10.2	21			
22	149 45.3 -00.3	S	23 19.1 -00.1	100 45.1 -00.2	S	15 44.6 -01.0	200 31.0 -28.2	S	20 58.6 +10.2	22			
23	164 45.0 -00.3	S	23 19.0 -00.1	115 44.9 -00.2	S	15 43.6 -01.1	215 02.8 -28.2	S	21 08.8 +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 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'2 00'2 00'2 00'2 00'2 00'2				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 00'2 00'2 00'2 00'2 00'2 00'2				HP 54'4 54'5 54'5 54'6 54'7 54'7					
	SHA 085° 085° 084° 084° 084° 084°			SHA 036° 036° 035° 035° 035° 035°				SHA 145° 143° 141° 139° 137° 135°					
	Greenwich Culmination Time: 12:00			Greenwich Culmination Time: 15:16				Greenwich Culmination Time: 08:12					

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	328 03.0 +03.1	N	22 54.2 +00.3	22 22.6 +02.7	N	21 51.0 +00.0	108 51.8 +02.3	S	08 05.7 -00.1	00			
01	343 06.1 +03.2	N	22 54.5 +00.3	37 25.3 +02.8	N	21 51.0 +00.0	123 54.1 +02.3	S	08 05.6 +00.0	01			
02	358 09.3 +03.1	N	22 54.8 +00.2	52 28.1 +02.8	N	21 51.0 +00.0	138 56.4 +02.3	S	08 05.6 -00.1	02			
03	13 12.4 +03.1	N	22 55.0 +00.3	67 30.9 +02.8	N	21 51.0 -00.1	153 58.7 +02.3	S	08 05.5 -00.1	03			
04	28 15.5 +03.1	N	22 55.3 +00.2	82 33.7 +02.8	N	21 50.9 +00.0	169 01.0 +02.3	S	08 05.4 +00.0	04			
05	43 18.6 +03.2	N	22 55.5 +00.3	97 36.5 +02.8	N	21 50.9 +00.0	184 03.3 +02.3	S	08 05.4 -00.1	05			
06	58 21.8 +03.1	N	22 55.8 +00.2	112 39.3 +02.7	N	21 50.9 -00.1	199 05.6 +02.3	S	08 05.3 -00.1	06			
07	73 24.9 +03.1	N	22 56.0 +00.3	127 42.0 +02.8	N	21 50.8 +00.0	214 07.9 +02.3	S	08 05.2 +00.0	07			
08	88 28.0 +03.2	N	22 56.3 +00.3	142 44.8 +02.8	N	21 50.8 +00.0	229 10.2 +02.4	S	08 05.2 -00.1	08			
09	103 31.2 +03.1	N	22 56.6 +00.2	157 47.6 +02.8	N	21 50.8 +00.0	244 12.6 +02.3	S	08 05.1 -00.1	09			
10	118 34.3 +03.1	N	22 56.8 +00.3	172 50.4 +02.8	N	21 50.8 -00.1	259 14.9 +02.3	S	08 05.0 -00.1	10			
11	133 37.4 +03.2	N	22 57.1 +00.2	187 53.2 +02.7	N	21 50.7 +00.0	274 17.2 +02.3	S	08 04.9 +00.0	11			
12	148 40.6 +03.1	N	22 57.3 +00.3	202 55.9 +02.8	N	21 50.7 +00.0	289 19.5 +02.3	S	08 04.9 -00.1	12			
13	163 43.7 +03.1	N	22 57.6 +00.2	217 58.7 +02.8	N	21 50.7 -00.1	304 21.8 +02.3	S	08 04.8 -00.1	13			
14	178 46.8 +03.2	N	22 57.8 +00.3	233 01.5 +02.8	N	21 50.6 +00.0	319 24.1 +02.3	S	08 04.7 +00.0	14			
15	193 50.0 +03.1	N	22 58.1 +00.3	248 04.3 +02.8	N	21 50.6 +00.0	334 26.4 +02.3	S	08 04.7 -00.1	15			
16	208 53.1 +03.2	N	22 58.4 +00.2	263 07.1 +02.7	N	21 50.6 +00.0	349 28.7 +02.3	S	08 04.6 -00.1	16			
17	223 56.3 +03.1	N	22 58.6 +00.3	278 09.8 +02.8	N	21 50.6 -00.1	4 31.0 +02.3	S	08 04.5 -00.1	17			
18	238 59.4 +03.2	N	22 58.9 +00.2	293 12.6 +02.8	N	21 50.5 +00.0	19 33.3 +02.3	S	08 04.4 +00.0	18			
19	254 02.6 +03.1	N	22 59.1 +00.3	308 15.4 +02.8	N	21 50.5 +00.0	34 35.6 +02.3	S	08 04.4 -00.1	19			
20	269 05.7 +03.2	N	22 59.4 +00.3	323 18.2 +02.8	N	21 50.5 +00.0	49 37.9 +02.3	S	08 04.3 -00.1	20			
21	284 08.9 +03.1	N	22 59.7 +00.2	338 21.0 +02.7	N	21 50.5 -00.1	64 40.2 +02.4	S	08 04.2 +00.0	21			
22	299 12.0 +03.2	N	22 59.9 +00.3	353 23.7 +02.8	N	21 50.4 +00.0	79 42.6 +02.3	S	08 04.2 -00.1	22			
23	314 15.2 +03.1	N	23 00.2 +00.2	8 26.5 +02.8	N	21 50.4 +00.0	94 44.9 +02.3	S	08 04.1 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22				UT 02 06 10 14 18 22					
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4				SD 00'1 00'1 00'1 00'1 00'1 00'1					
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0				HP 00'0 00'0 00'0 00'0 00'0 00'0					
	SHA 233° 233° 233° 233° 233° 233°			SHA 287° 287° 287° 287° 287° 288°				SHA 014° 014° 014° 014° 014° 014°					
	Greenwich Culmination Time: 02:07			Greenwich Culmination Time: 22:26				Greenwich Culmination Time: 16:41					

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 44.7 -00.3	S	23 18.9 -00.1	130 44.7 -00.1	S	15 42.5 -01.0	229 34.6 -28.3	S	21 18.9 +10.0	00			
01	194 44.4 -00.3	S	23 18.8 -00.1	145 44.6 -00.2	S	15 41.5 -01.0	244 06.3 -28.4	S	21 28.9 +09.9	01			
02	209 44.1 -00.3	S	23 18.7 -00.1	160 44.4 -00.2	S	15 40.5 -01.1	258 37.9 -28.5	S	21 38.8 +09.8	02			
03	224 43.8 -00.3	S	23 18.6 -00.1	175 44.2 -00.2	S	15 39.4 -01.0	273 09.4 -28.6	S	21 48.6 +09.7	03			
04	239 43.5 -00.3	S	23 18.5 -00.2	190 44.0 -00.1	S	15 38.4 -01.0	287 40.8 -28.7	S	21 58.3 +09.6	04			
05	254 43.2 -00.3	S	23 18.3 -00.1	205 43.9 -00.2	S	15 37.4 -01.1	302 12.1 -28.8	S	22 07.9 +09.6	05			
06	269 42.9 -00.4	S	23 18.2 -00.1	220 43.7 -00.2	S	15 36.3 -01.0	316 43.3 -28.8	S	22 17.5 +09.4	06			
07	284 42.5 -00.3	S	23 18.1 -00.1	235 43.5 -00.2	S	15 35.3 -01.0	331 14.5 -29.0	S	22 26.9 +09.4	07			
08	299 42.2 -00.3	S	23 18.0 -00.1	250 43.3 -00.1	S	15 34.3 -01.1	345 45.5 -29.0	S	22 36.3 +09.2	08			
09	314 41.9 -00.3	S	23 17.9 -00.1	265 43.2 -00.2	S	15 33.2 -01.0	0 16.5 -29.2	S	22 45.5 +09.2	09			
10	329 41.6 -00.3	S	23 17.8 -00.2	280 43.0 -00.2	S	15 32.2 -01.0	14 47.3 -29.3	S	22 54.7 +09.1	10			
11	344 41.3 -00.3	S	23 17.6 -00.1	295 42.8 -00.1	S	15 31.2 -01.1	29 18.0 -29.3	S	23 03.8 +08.9	11			
12	359 41.0 -00.3	S	23 17.5 -00.1	310 42.7 -00.2	S	15 30.1 -01.0	43 48.7 -29.4	S	23 12.7 +08.9	12			
13	14 40.7 -00.3	S	23 17.4 -00.1	325 42.5 -00.1	S	15 29.1 -01.0	58 19.3 -29.6	S	23 21.6 +08.8	13			
14	29 40.4 -00.3	S	23 17.3 -00.1	340 42.4 -00.2	S	15 28.1 -01.1	72 49.7 -29.6	S	23 30.4 +08.6	14			
15	44 40.1 -00.3	S	23 17.2 -00.2	355 42.2 -00.2	S	15 27.0 -01.0	87 20.1 -29.7	S	23 39.0 +08.6	15			
16	59 39.8 -00.3	S	23 17.0 -00.1	10 42.0 -00.1	S	15 26.0 -01.1	101 50.4 -29.9	S	23 47.6 +08.4	16			
17	74 39.5 -00.3	S	23 16.9 -00.1	25 41.9 -00.2	S	15 24.9 -01.0	116 20.5 -29.9	S	23 56.0 +08.4	17			
18	89 39.2 -00.3	S	23 16.8 -00.1	40 41.7 -00.1	S	15 23.9 -01.0	130 50.6 -30.0	S	24 04.4 +08.2	18			
19	104 38.9 -00.3	S	23 16.7 -00.2	55 41.6 -00.2	S	15 22.9 -01.1	145 20.6 -30.1	S	24 12.6 +08.1	19			
20	119 38.6 -00.4	S	23 16.5 -00.1	70 41.4 -00.2	S	15 21.8 -01.0	159 50.5 -30.2	S	24 20.7 +08.0	20			
21	134 38.2 -00.3	S	23 16.4 -00.1	85 41.2 -00.1	S	15 20.8 -01.1	174 20.3 -30.3	S	24 28.7 +07.9	21			
22	149 37.9 -00.3	S	23 16.3 -00.1	100 41.1 -00.2	S	15 19.7 -01.0	188 50.0 -30.4	S	24 36.6 +07.8	22			
23	164 37.6 -00.3	S	23 16.2 -00.2	115 40.9 -00.1	S	15 18.7 -01.0	203 19.6 -30.5	S	24 44.4 +07.7	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 00'2 00'2 00'2 00'2 00'2 00'2			SD 14'9 14'9 15'0 15'0 15'0 15'0						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 54'8 54'9 54'9 55'0 55'1 55'2						
	SHA 084° 083° 083° 083° 083° 083°			SHA 035° 035° 034° 034° 034° 034°			SHA 133° 131° 128° 126° 124° 122°						
	Greenwich Culmination Time: 12:01			Greenwich Culmination Time: 15:17			Greenwich Culmination Time: 08:58						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	329 18.3 +03.2	N	23 00.4 +00.3	23 29.3 +02.8	N	21 50.4 -00.1	109 47.2 +02.3	S	08 04.0 -00.1	00			
01	344 21.5 +03.1	N	23 00.7 +00.3	38 32.1 +02.8	N	21 50.3 +00.0	124 49.5 +02.3	S	08 03.9 +00.0	01			
02	359 24.6 +03.2	N	23 01.0 +00.2	53 34.9 +02.7	N	21 50.3 +00.0	139 51.8 +02.3	S	08 03.9 -00.1	02			
03	14 27.8 +03.1	N	23 01.2 +00.3	68 37.6 +02.8	N	21 50.3 +00.0	154 54.1 +02.3	S	08 03.8 -00.1	03			
04	29 30.9 +03.2	N	23 01.5 +00.3	83 40.4 +02.8	N	21 50.3 -00.1	169 56.4 +02.3	S	08 03.7 +00.0	04			
05	44 34.1 +03.2	N	23 01.8 +00.2	98 43.2 +02.8	N	21 50.2 +00.0	184 58.7 +02.3	S	08 03.7 -00.1	05			
06	59 37.3 +03.1	N	23 02.0 +00.3	113 46.0 +02.7	N	21 50.2 +00.0	200 01.0 +02.3	S	08 03.6 -00.1	06			
07	74 40.4 +03.2	N	23 02.3 +00.2	128 48.7 +02.8	N	21 50.2 +00.0	215 03.3 +02.3	S	08 03.5 -00.1	07			
08	89 43.6 +03.1	N	23 02.5 +00.3	143 51.5 +02.8	N	21 50.2 -00.1	230 05.6 +02.3	S	08 03.4 +00.0	08			
09	104 46.7 +03.2	N	23 02.8 +00.3	158 54.3 +02.8	N	21 50.1 +00.0	245 07.9 +02.3	S	08 03.4 -00.1	09			
10	119 49.9 +03.2	N	23 03.1 +00.2	173 57.1 +02.8	N	21 50.1 +00.0	260 10.2 +02.3	S	08 03.3 -00.1	10			
11	134 53.1 +03.2	N	23 03.3 +00.3	188 59.9 +02.7	N	21 50.1 -00.1	275 12.5 +02.3	S	08 03.2 -00.1	11			
12	149 56.3 +03.1	N	23 03.6 +00.2	204 02.6 +02.8	N	21 50.0 +00.0	290 14.8 +02.3	S	08 03.1 +00.0	12			
13	164 59.4 +03.2	N	23 03.8 +00.3	219 05.4 +02.8	N	21 50.0 +00.0	305 17.1 +02.3	S	08 03.1 -00.1	13			
14	180 02.6 +03.2	N	23 04.1 +00.3	234 08.2 +02.8	N	21 50.0 +00.0	320 19.4 +02.4	S	08 03.0 -00.1	14			
15	195 05.8 +03.1	N	23 04.4 +00.2	249 11.0 +02.7	N	21 50.0 -00.1	335 21.8 +02.3	S	08 02.9 +00.0	15			
16	210 08.9 +03.2	N	23 04.6 +00.3	264 13.7 +02.8	N	21 49.9 +00.0	350 24.1 +02.3	S	08 02.9 -00.1	16			
17	225 12.1 +03.2	N	23 04.9 +00.3	279 16.5 +02.8	N	21 49.9 +00.0	5 26.4 +02.3	S	08 02.8 -00.1	17			
18	240 15.3 +03.2	N	23 05.2 +00.2	294 19.3 +02.8	N	21 49.9 +00.0	20 28.7 +02.3	S	08 02.7 -00.1	18			
19	255 18.5 +03.2	N	23 05.4 +00.3	309 22.1 +02.7	N	21 49.9 -00.1	35 31.0 +02.3	S	08 02.6 +00.0	19			
20	270 21.7 +03.1	N	23 05.7 +00.3	324 24.8 +02.8	N	21 49.8 +00.0	50 33.3 +02.3	S	08 02.6 -00.1	20			
21	285 24.8 +03.2	N	23 06.0 +00.2	339 27.6 +02.8	N	21 49.8 +00.0	65 35.6 +02.3	S	08 02.5 -00.1	21			
22	300 28.0 +03.2	N	23 06.2 +00.3	354 30.4 +02.7	N	21 49.8 +00.0	80 37.9 +02.3	S	08 02.4 -00.1	22			
23	315 31.2 +03.2	N	23 06.5 +00.2	9 33.1 +02.8	N	21 49.8 -00.1	95 40.2 +02.3	S	08 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 00'1 00'1 00'1 00'1 00'1 00'1			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 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 233° 233° 233° 233° 234° 234°			SHA 288° 288° 288° 288° 288° 288°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 02:02			Greenwich Culmination Time: 22:21			Greenwich Culmination Time: 16:38						



UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	179 37.3 -00.3	S	23 16.0 -00.1	130 40.8 -00.2	S	15 17.7 -01.1	217 49.1 -30.6	S	24 52.1 +07.6	00			
01	194 37.0 -00.3	S	23 15.9 -00.1	145 40.6 -00.1	S	15 16.6 -01.0	232 18.5 -30.7	S	24 59.7 +07.4	01			
02	209 36.7 -00.3	S	23 15.8 -00.2	160 40.5 -00.2	S	15 15.6 -01.1	246 47.8 -30.8	S	25 07.1 +07.4	02			
03	224 36.4 -00.3	S	23 15.6 -00.1	175 40.3 -00.1	S	15 14.5 -01.0	261 17.0 -30.9	S	25 14.5 +07.2	03			
04	239 36.1 -00.3	S	23 15.5 -00.1	190 40.2 -00.2	S	15 13.5 -01.1	275 46.1 -30.9	S	25 21.7 +07.1	04			
05	254 35.8 -00.3	S	23 15.4 -00.2	205 40.0 -00.1	S	15 12.4 -01.0	290 15.2 -31.1	S	25 28.8 +06.9	05			
06	269 35.5 -00.3	S	23 15.2 -00.1	220 39.9 -00.2	S	15 11.4 -01.1	304 44.1 -31.2	S	25 35.7 +06.9	06			
07	284 35.2 -00.3	S	23 15.1 -00.1	235 39.7 -00.1	S	15 10.3 -01.0	319 12.9 -31.2	S	25 42.6 +06.7	07			
08	299 34.9 -00.3	S	23 15.0 -00.2	250 39.6 -00.2	S	15 09.3 -01.0	333 41.7 -31.4	S	25 49.3 +06.6	08			
09	314 34.6 -00.3	S	23 14.8 -00.1	265 39.4 -00.1	S	15 08.3 -01.1	348 10.3 -31.4	S	25 55.9 +06.5	09			
10	329 34.3 -00.3	S	23 14.7 -00.1	280 39.3 -00.2	S	15 07.2 -01.0	2 38.9 -31.5	S	26 02.4 +06.3	10			
11	344 34.0 -00.3	S	23 14.6 -00.2	295 39.1 -00.1	S	15 06.2 -01.1	17 07.4 -31.6	S	26 08.7 +06.2	11			
12	359 33.7 -00.4	S	23 14.4 -00.1	310 39.0 -00.1	S	15 05.1 -01.0	31 35.8 -31.8	S	26 14.9 +06.1	12			
13	14 33.3 -00.3	S	23 14.3 -00.2	325 38.9 -00.2	S	15 04.1 -01.1	46 04.0 -31.8	S	26 21.0 +06.0	13			
14	29 33.0 -00.3	S	23 14.1 -00.1	340 38.7 -00.1	S	15 03.0 -01.0	60 32.2 -31.8	S	26 27.0 +05.8	14			
15	44 32.7 -00.3	S	23 14.0 -00.1	355 38.6 -00.2	S	15 02.0 -01.1	75 00.4 -32.0	S	26 32.8 +05.7	15			
16	59 32.4 -00.3	S	23 13.9 -00.2	10 38.4 -00.1	S	15 00.9 -01.0	89 28.4 -32.1	S	26 38.5 +05.6	16			
17	74 32.1 -00.3	S	23 13.7 -00.1	25 38.3 -00.1	S	14 59.9 -01.1	103 56.3 -32.1	S	26 44.1 +05.4	17			
18	89 31.8 -00.3	S	23 13.6 -00.2	40 38.2 -00.2	S	14 58.8 -01.1	118 24.2 -32.3	S	26 49.5 +05.3	18			
19	104 31.5 -00.3	S	23 13.4 -00.1	55 38.0 -00.1	S	14 57.7 -01.0	132 51.9 -32.3	S	26 54.8 +05.1	19			
20	119 31.2 -00.3	S	23 13.3 -00.2	70 37.9 -00.2	S	14 56.7 -01.1	147 19.6 -32.4	S	26 59.9 +05.1	20			
21	134 30.9 -00.3	S	23 13.1 -00.1	85 37.7 -00.1	S	14 55.6 -01.0	161 47.2 -32.5	S	27 05.0 +04.8	21			
22	149 30.6 -00.3	S	23 13.0 -00.2	100 37.6 -00.1	S	14 54.6 -01.1	176 14.7 -32.5	S	27 09.8 +04.8	22			
23	164 30.3 -00.3	S	23 12.8 -00.1	115 37.5 -00.2	S	14 53.5 -01.0	190 42.2 -32.7	S	27 14.6 +04.6	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 00'2 00'2 00'2 00'2 00'2 00'2			SD 15'1 15'1 15'1 15'1 15'1 15'2						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 55'2 55'3 55'4 55'5 55'6 55'7						
	SHA 083° 082° 082° 082° 082° 082°			SHA 034° 033° 033° 033° 033° 033°			SHA 120° 118° 115° 113° 111° 108°						
	Greenwich Culmination Time: 12:01			Greenwich Culmination Time: 15:17			Greenwich Culmination Time: 09:49						

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	330 34.4 +03.2	N	23 06.7 +00.3	24 35.9 +02.8	N	21 49.7 +00.0	110 42.5 +02.3	S	08 02.3 -00.1	00			
01	345 37.6 +03.2	N	23 07.0 +00.3	39 38.7 +02.8	N	21 49.7 +00.0	125 44.8 +02.3	S	08 02.2 -00.1	01			
02	0 40.8 +03.2	N	23 07.3 +00.2	54 41.5 +02.7	N	21 49.7 -00.1	140 47.1 +02.3	S	08 02.1 +00.0	02			
03	15 44.0 +03.2	N	23 07.5 +00.3	69 44.2 +02.8	N	21 49.6 +00.0	155 49.4 +02.3	S	08 02.1 -00.1	03			
04	30 47.2 +03.2	N	23 07.8 +00.3	84 47.0 +02.8	N	21 49.6 +00.0	170 51.7 +02.3	S	08 02.0 -00.1	04			
05	45 50.4 +03.1	N	23 08.1 +00.2	99 49.8 +02.8	N	21 49.6 +00.0	185 54.0 +02.3	S	08 01.9 -00.1	05			
06	60 53.5 +03.2	N	23 08.3 +00.3	114 52.6 +02.7	N	21 49.6 -00.1	200 56.3 +02.3	S	08 01.8 +00.0	06			
07	75 56.7 +03.2	N	23 08.6 +00.3	129 55.3 +02.8	N	21 49.5 +00.0	215 58.6 +02.3	S	08 01.8 -00.1	07			
08	90 59.9 +03.2	N	23 08.9 +00.2	144 58.1 +02.8	N	21 49.5 +00.0	231 00.9 +02.3	S	08 01.7 -00.1	08			
09	106 03.1 +03.2	N	23 09.1 +00.3	160 00.9 +02.7	N	21 49.5 +00.0	246 03.2 +02.3	S	08 01.6 -00.1	09			
10	121 06.3 +03.2	N	23 09.4 +00.3	175 03.6 +02.8	N	21 49.5 -00.1	261 05.5 +02.3	S	08 01.5 +00.0	10			
11	136 09.5 +03.2	N	23 09.7 +00.2	190 06.4 +02.8	N	21 49.4 +00.0	276 07.8 +02.3	S	08 01.5 -00.1	11			
12	151 12.7 +03.2	N	23 09.9 +00.3	205 09.2 +02.7	N	21 49.4 +00.0	291 10.1 +02.3	S	08 01.4 -00.1	12			
13	166 15.9 +03.3	N	23 10.2 +00.3	220 11.9 +02.8	N	21 49.4 -00.1	306 12.4 +02.3	S	08 01.3 -00.1	13			
14	181 19.2 +03.2	N	23 10.5 +00.2	235 14.7 +02.8	N	21 49.3 +00.0	321 14.7 +02.3	S	08 01.2 +00.0	14			
15	196 22.4 +03.2	N	23 10.7 +00.3	250 17.5 +02.8	N	21 49.3 +00.0	336 17.0 +02.3	S	08 01.2 -00.1	15			
16	211 25.6 +03.2	N	23 11.0 +00.3	265 20.3 +02.7	N	21 49.3 +00.0	351 19.3 +02.3	S	08 01.1 -00.1	16			
17	226 28.8 +03.2	N	23 11.3 +00.2	280 23.0 +02.8	N	21 49.3 -00.1	6 21.6 +02.3	S	08 01.0 -00.1	17			
18	241 32.0 +03.2	N	23 11.5 +00.3	295 25.8 +02.8	N	21 49.2 +00.0	21 23.9 +02.3	S	08 00.9 +00.0	18			
19	256 35.2 +03.2	N	23 11.8 +00.3	310 28.6 +02.7	N	21 49.2 +00.0	36 26.2 +02.3	S	08 00.9 -00.1	19			
20	271 38.4 +03.2	N	23 12.1 +00.2	325 31.3 +02.8	N	21 49.2 +00.0	51 28.5 +02.3	S	08 00.8 -00.1	20			
21	286 41.6 +03.2	N	23 12.3 +00.3	340 34.1 +02.8	N	21 49.2 -00.1	66 30.8 +02.3	S	08 00.7 +00.0	21			
22	301 44.8 +03.3	N	23 12.6 +00.3	355 36.9 +02.7	N	21 49.1 +00.0	81 33.1 +02.3	S	08 00.7 -00.1	22			
23	316 48.1 +03.2	N	23 12.9 +00.2	10 39.6 +02.8	N	21 49.1 +00.0	96 35.4 +02.3	S	08 00.6 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 234° 234° 234° 234° 234° 234°			SHA 288° 288° 288° 288° 288° 288°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 01:57			Greenwich Culmination Time: 22:17			Greenwich Culmination Time: 16:34						

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 30.0 -00.3	S	23 12.7 -00.2	130 37.3 -00.1	S	14 52.5 -01.1	205 09.5 -32.7	S	27 19.2 +04.4	00			
01	194 29.7 -00.3	S	23 12.5 -00.1	145 37.2 -00.1	S	14 51.4 -01.0	219 36.8 -32.8	S	27 23.6 +04.3	01			
02	209 29.4 -00.3	S	23 12.4 -00.2	160 37.1 -00.1	S	14 50.4 -01.1	234 04.0 -32.9	S	27 27.9 +04.2	02			
03	224 29.1 -00.3	S	23 12.2 -00.1	175 37.0 -00.2	S	14 49.3 -01.1	248 31.1 -32.9	S	27 32.1 +04.0	03			
04	239 28.8 -00.3	S	23 12.1 -00.2	190 36.8 -00.1	S	14 48.2 -01.0	262 58.2 -33.1	S	27 36.1 +03.8	04			
05	254 28.5 -00.3	S	23 11.9 -00.1	205 36.7 -00.1	S	14 47.2 -01.1	277 25.1 -33.1	S	27 39.9 +03.8	05			
06	269 28.2 -00.3	S	23 11.8 -00.2	220 36.6 -00.2	S	14 46.1 -01.0	291 52.0 -33.1	S	27 43.7 +03.5	06			
07	284 27.9 -00.3	S	23 11.6 -00.1	235 36.4 -00.1	S	14 45.1 -01.1	306 18.9 -33.3	S	27 47.2 +03.4	07			
08	299 27.6 -00.3	S	23 11.5 -00.2	250 36.3 -00.1	S	14 44.0 -01.0	320 45.6 -33.3	S	27 50.6 +03.3	08			
09	314 27.3 -00.3	S	23 11.3 -00.1	265 36.2 -00.1	S	14 43.0 -01.1	335 12.3 -33.4	S	27 53.9 +03.1	09			
10	329 27.0 -00.3	S	23 11.2 -00.2	280 36.1 -00.1	S	14 41.9 -01.1	349 38.9 -33.4	S	27 57.0 +03.0	10			
11	344 26.7 -00.3	S	23 11.0 -00.1	295 36.0 -00.2	S	14 40.8 -01.0	4 05.5 -33.5	S	27 60.0 +02.8	11			
12	359 26.4 -00.4	S	23 10.9 -00.2	310 35.8 -00.1	S	14 39.8 -01.1	18 32.0 -33.6	S	28 02.8 +02.6	12			
13	14 26.0 -00.3	S	23 10.7 -00.2	325 35.7 -00.1	S	14 38.7 -01.1	32 58.4 -33.6	S	28 05.4 +02.5	13			
14	29 25.7 -00.3	S	23 10.5 -00.1	340 35.6 -00.1	S	14 37.6 -01.0	47 24.8 -33.7	S	28 07.9 +02.4	14			
15	44 25.4 -00.3	S	23 10.4 -00.2	355 35.5 -00.1	S	14 36.6 -01.1	61 51.1 -33.8	S	28 10.3 +02.2	15			
16	59 25.1 -00.3	S	23 10.2 -00.2	10 35.4 -00.2	S	14 35.5 -01.0	76 17.3 -33.8	S	28 12.5 +02.0	16			
17	74 24.8 -00.3	S	23 10.0 -00.1	25 35.2 -00.1	S	14 34.5 -01.1	90 43.5 -33.8	S	28 14.5 +01.9	17			
18	89 24.5 -00.3	S	23 09.9 -00.2	40 35.1 -00.1	S	14 33.4 -01.1	105 09.7 -34.0	S	28 16.4 +01.7	18			
19	104 24.2 -00.3	S	23 09.7 -00.1	55 35.0 -00.1	S	14 32.3 -01.0	119 35.7 -33.9	S	28 18.1 +01.5	19			
20	119 23.9 -00.3	S	23 09.6 -00.2	70 34.9 -00.1	S	14 31.3 -01.1	134 01.8 -34.0	S	28 19.6 +01.4	20			
21	134 23.6 -00.3	S	23 09.4 -00.2	85 34.8 -00.1	S	14 30.2 -01.1	148 27.8 -34.1	S	28 21.0 +01.3	21			
22	149 23.3 -00.3	S	23 09.2 -00.1	100 34.7 -00.1	S	14 29.1 -01.0	162 53.7 -34.1	S	28 22.3 +01.0	22			
23	164 23.0 -00.3	S	23 09.1 -00.2	115 34.6 -00.1	S	14 28.1 -01.1	177 19.6 -34.2	S	28 23.3 +00.9	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'2 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 55'8 55'9 56'0 56'1 56'2 56'3						
	SHA 081° 081° 081° 081° 081° 081°			SHA 033° 032° 032° 032° 032° 032°			SHA 106° 104° 101° 099° 096° 094°						
	Greenwich Culmination Time: 12:02			Greenwich Culmination Time: 15:17			Greenwich Culmination Time: 10:43						

  

UT	<i>Mars</i>				<i>Jupiter</i>				<i>Saturn</i>				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	331 51.3 +03.2	N	23 13.1 +00.3	25 42.4 +02.8	N	21 49.1 +00.0	111 37.7 +02.3	S	08 00.5 -00.1	00			
01	346 54.5 +03.2	N	23 13.4 +00.3	40 45.2 +02.7	N	21 49.1 -00.1	126 40.0 +02.3	S	08 00.4 +00.0	01			
02	1 57.7 +03.2	N	23 13.7 +00.2	55 47.9 +02.8	N	21 49.0 +00.0	141 42.3 +02.3	S	08 00.4 -00.1	02			
03	17 00.9 +03.3	N	23 13.9 +00.3	70 50.7 +02.8	N	21 49.0 +00.0	156 44.6 +02.3	S	08 00.3 -00.1	03			
04	32 04.2 +03.2	N	23 14.2 +00.3	85 53.5 +02.7	N	21 49.0 +00.0	171 46.9 +02.3	S	08 00.2 -00.1	04			
05	47 07.4 +03.2	N	23 14.5 +00.2	100 56.2 +02.8	N	21 49.0 -00.1	186 49.2 +02.3	S	08 00.1 +00.0	05			
06	62 10.6 +03.3	N	23 14.7 +00.3	115 59.0 +02.8	N	21 48.9 +00.0	201 51.5 +02.3	S	08 00.1 -00.1	06			
07	77 13.9 +03.2	N	23 15.0 +00.3	131 01.8 +02.7	N	21 48.9 +00.0	216 53.8 +02.3	S	07 60.0 -00.1	07			
08	92 17.1 +03.2	N	23 15.3 +00.3	146 04.5 +02.8	N	21 48.9 -00.1	231 56.1 +02.3	S	07 59.9 -00.1	08			
09	107 20.3 +03.2	N	23 15.6 +00.2	161 07.3 +02.8	N	21 48.8 +00.0	246 58.4 +02.3	S	07 59.8 +00.0	09			
10	122 23.5 +03.3	N	23 15.8 +00.3	176 10.1 +02.7	N	21 48.8 +00.0	262 00.7 +02.3	S	07 59.8 -00.1	10			
11	137 26.8 +03.2	N	23 16.1 +00.3	191 12.8 +02.8	N	21 48.8 +00.0	277 03.0 +02.3	S	07 59.7 -00.1	11			
12	152 30.0 +03.3	N	23 16.4 +00.2	206 15.6 +02.8	N	21 48.8 -00.1	292 05.3 +02.3	S	07 59.6 -00.1	12			
13	167 33.3 +03.2	N	23 16.6 +00.3	221 18.4 +02.7	N	21 48.7 +00.0	307 07.6 +02.3	S	07 59.5 +00.0	13			
14	182 36.5 +03.2	N	23 16.9 +00.3	236 21.1 +02.8	N	21 48.7 +00.0	322 09.9 +02.3	S	07 59.5 -00.1	14			
15	197 39.7 +03.3	N	23 17.2 +00.2	251 23.9 +02.8	N	21 48.7 +00.0	337 12.2 +02.3	S	07 59.4 -00.1	15			
16	212 43.0 +03.2	N	23 17.4 +00.3	266 26.7 +02.7	N	21 48.7 -00.1	352 14.5 +02.3	S	07 59.3 -00.1	16			
17	227 46.2 +03.3	N	23 17.7 +00.3	281 29.4 +02.8	N	21 48.6 +00.0	7 16.8 +02.3	S	07 59.2 +00.0	17			
18	242 49.5 +03.2	N	23 18.0 +00.3	296 32.2 +02.7	N	21 48.6 +00.0	22 19.1 +02.3	S	07 59.2 -00.1	18			
19	257 52.7 +03.2	N	23 18.3 +00.2	311 34.9 +02.8	N	21 48.6 +00.0	37 21.4 +02.3	S	07 59.1 -00.1	19			
20	272 55.9 +03.3	N	23 18.5 +00.3	326 37.7 +02.8	N	21 48.6 -00.1	52 23.7 +02.3	S	07 59.0 -00.1	20			
21	287 59.2 +03.2	N	23 18.8 +00.3	341 40.5 +02.7	N	21 48.5 +00.0	67 26.0 +02.3	S	07 58.9 +00.0	21			
22	303 02.4 +03.3	N	23 19.1 +00.2	356 43.2 +02.8	N	21 48.5 +00.0	82 28.3 +02.3	S	07 58.9 -00.1	22			
23	318 05.7 +03.2	N	23 19.3 +00.3	11 46.0 +02.8	N	21 48.5 +00.0	97 30.6 +02.3	S	07 58.8 -00.1	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 234° 234° 234° 234° 234° 234°			SHA 288° 288° 288° 288° 288° 288°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 01:52			Greenwich Culmination Time: 22:13			Greenwich Culmination Time: 16:30						

UT	Sun				Venus				Moon				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	179 22.7 -00.3	S	23 08.9 -00.2	130 34.5 -00.2	S	14 27.0 -01.1	191 45.4 -34.2	S	28 24.2 +00.8	00			
01	194 22.4 -00.3	S	23 08.7 -00.1	145 34.3 -00.1	S	14 25.9 -01.0	206 11.2 -34.2	S	28 25.0 +00.5	01			
02	209 22.1 -00.3	S	23 08.6 -00.2	160 34.2 -00.1	S	14 24.9 -01.1	220 37.0 -34.3	S	28 25.5 +00.5	02			
03	224 21.8 -00.3	S	23 08.4 -00.2	175 34.1 -00.1	S	14 23.8 -01.1	235 02.7 -34.3	S	28 26.0 +00.2	03			
04	239 21.5 -00.3	S	23 08.2 -00.2	190 34.0 -00.1	S	14 22.7 -01.1	249 28.4 -34.3	S	28 26.2 +00.1	04			
05	254 21.2 -00.3	S	23 08.0 -00.1	205 33.9 -00.1	S	14 21.6 -01.0	263 54.1 -34.4	S	28 26.3 -00.1	05			
06	269 20.9 -00.3	S	23 07.9 -00.2	220 33.8 -00.1	S	14 20.6 -01.1	278 19.7 -34.4	S	28 26.2 -00.2	06			
07	284 20.6 -00.3	S	23 07.7 -00.2	235 33.7 -00.1	S	14 19.5 -01.1	292 45.3 -34.5	S	28 26.0 -00.5	07			
08	299 20.3 -00.3	S	23 07.5 -00.2	250 33.6 -00.1	S	14 18.4 -01.0	307 10.8 -34.4	S	28 25.5 -00.5	08			
09	314 20.0 -00.3	S	23 07.3 -00.1	265 33.5 -00.1	S	14 17.4 -01.1	321 36.4 -34.5	S	28 25.0 -00.8	09			
10	329 19.7 -00.3	S	23 07.2 -00.2	280 33.4 -00.1	S	14 16.3 -01.1	336 01.9 -34.5	S	28 24.2 -00.9	10			
11	344 19.4 -00.3	S	23 07.0 -00.2	295 33.3 -00.1	S	14 15.2 -01.1	350 27.4 -34.5	S	28 23.3 -01.1	11			
12	359 19.1 -00.3	S	23 06.8 -00.2	310 33.2 -00.1	S	14 14.1 -01.0	4 52.9 -34.6	S	28 22.2 -01.2	12			
13	14 18.8 -00.3	S	23 06.6 -00.1	325 33.1 -00.1	S	14 13.1 -01.1	19 18.3 -34.5	S	28 21.0 -01.5	13			
14	29 18.5 -00.3	S	23 06.5 -00.2	340 33.0 -00.1	S	14 12.0 -01.1	33 43.8 -34.6	S	28 19.5 -01.6	14			
15	44 18.2 -00.3	S	23 06.3 -00.2	355 32.9 -00.1	S	14 10.9 -01.1	48 09.2 -34.6	S	28 17.9 -01.7	15			
16	59 17.9 -00.3	S	23 06.1 -00.2	10 32.8 -00.1	S	14 09.8 -01.0	62 34.6 -34.6	S	28 16.2 -01.9	16			
17	74 17.6 -00.3	S	23 05.9 -00.2	25 32.7 -00.1	S	14 08.8 -01.1	76 60.0 -34.6	S	28 14.3 -02.1	17			
18	89 17.3 -00.3	S	23 05.7 -00.2	40 32.6 -00.1	S	14 07.7 -01.1	91 25.4 -34.6	S	28 12.2 -02.3	18			
19	104 17.0 -00.3	S	23 05.5 -00.1	55 32.5 +00.0	S	14 06.6 -01.1	105 50.8 -34.6	S	28 09.9 -02.4	19			
20	119 16.7 -00.3	S	23 05.4 -00.2	70 32.5 -00.1	S	14 05.5 -01.0	120 16.2 -34.7	S	28 07.5 -02.6	20			
21	134 16.4 -00.3	S	23 05.2 -00.2	85 32.4 -00.1	S	14 04.5 -01.1	134 41.5 -34.6	S	28 04.9 -02.8	21			
22	149 16.1 -00.3	S	23 05.0 -00.2	100 32.3 -00.1	S	14 03.4 -01.1	149 06.9 -34.6	S	28 02.1 -02.9	22			
23	164 15.8 -00.3	S	23 04.8 -00.2	115 32.2 -00.1	S	14 02.3 -01.1	163 32.3 -34.6	S	27 59.2 -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 16'3 16'3 16'3 16'3 16'3 16'3			SD 00'2 00'2 00'2 00'2 00'2 00'2			SD 15'4 15'4 15'4 15'4 15'5 15'5						
	HP 00'1 00'1 00'1 00'1 00'1 00'1			HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 56'3 56'4 56'5 56'6 56'7 56'8						
	SHA 080° 080° 080° 080° 080° 079°			SHA 032° 031° 031° 031° 031° 031°			SHA 092° 089° 087° 084° 082° 079°						
	Greenwich Culmination Time: 12:02			Greenwich Culmination Time: 15:17			Greenwich Culmination Time: 11:39						

  

UT	Mars				Jupiter				Saturn				UT
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	
00	333 08.9 +03.3	N	23 19.6 +00.3	26 48.8 +02.7	N	21 48.5 -00.1	112 32.9 +02.3	S	07 58.7 -00.1	00			
01	348 12.2 +03.2	N	23 19.9 +00.2	41 51.5 +02.8	N	21 48.4 +00.0	127 35.2 +02.3	S	07 58.6 -00.1	01			
02	3 15.4 +03.3	N	23 20.1 +00.3	56 54.3 +02.7	N	21 48.4 +00.0	142 37.5 +02.3	S	07 58.5 +00.0	02			
03	18 18.7 +03.2	N	23 20.4 +00.3	71 57.0 +02.8	N	21 48.4 +00.0	157 39.8 +02.3	S	07 58.5 -00.1	03			
04	33 21.9 +03.3	N	23 20.7 +00.3	86 59.8 +02.8	N	21 48.4 -00.1	172 42.1 +02.3	S	07 58.4 -00.1	04			
05	48 25.2 +03.3	N	23 21.0 +00.2	102 02.6 +02.7	N	21 48.3 +00.0	187 44.4 +02.3	S	07 58.3 -00.1	05			
06	63 28.5 +03.2	N	23 21.2 +00.3	117 05.3 +02.8	N	21 48.3 +00.0	202 46.7 +02.3	S	07 58.2 +00.0	06			
07	78 31.7 +03.3	N	23 21.5 +00.3	132 08.1 +02.7	N	21 48.3 +00.0	217 49.0 +02.3	S	07 58.2 -00.1	07			
08	93 35.0 +03.2	N	23 21.8 +00.2	147 10.8 +02.8	N	21 48.3 -00.1	232 51.3 +02.3	S	07 58.1 -00.1	08			
09	108 38.2 +03.3	N	23 22.0 +00.3	162 13.6 +02.8	N	21 48.2 +00.0	247 53.6 +02.3	S	07 58.0 -00.1	09			
10	123 41.5 +03.3	N	23 22.3 +00.3	177 16.4 +02.7	N	21 48.2 +00.0	262 55.9 +02.3	S	07 57.9 +00.0	10			
11	138 44.8 +03.2	N	23 22.6 +00.3	192 19.1 +02.8	N	21 48.2 -00.1	277 58.2 +02.2	S	07 57.9 -00.1	11			
12	153 48.0 +03.3	N	23 22.9 +00.2	207 21.9 +02.7	N	21 48.1 +00.0	293 00.4 +02.3	S	07 57.8 -00.1	12			
13	168 51.3 +03.3	N	23 23.1 +00.3	222 24.6 +02.8	N	21 48.1 +00.0	308 02.7 +02.3	S	07 57.7 -00.1	13			
14	183 54.6 +03.2	N	23 23.4 +00.3	237 27.4 +02.8	N	21 48.1 +00.0	323 05.0 +02.3	S	07 57.6 +00.0	14			
15	198 57.8 +03.3	N	23 23.7 +00.3	252 30.2 +02.7	N	21 48.1 -00.1	338 07.3 +02.3	S	07 57.6 -00.1	15			
16	214 01.1 +03.3	N	23 24.0 +00.2	267 32.9 +02.8	N	21 48.0 +00.0	353 09.6 +02.3	S	07 57.5 -00.1	16			
17	229 04.4 +03.3	N	23 24.2 +00.3	282 35.7 +02.7	N	21 48.0 +00.0	8 11.9 +02.3	S	07 57.4 -00.1	17			
18	244 07.7 +03.2	N	23 24.5 +00.3	297 38.4 +02.8	N	21 48.0 +00.0	23 14.2 +02.3	S	07 57.3 +00.0	18			
19	259 10.9 +03.3	N	23 24.8 +00.2	312 41.2 +02.7	N	21 48.0 -00.1	38 16.5 +02.3	S	07 57.3 -00.1	19			
20	274 14.2 +03.3	N	23 25.0 +00.3	327 43.9 +02.8	N	21 47.9 +00.0	53 18.8 +02.3	S	07 57.2 -00.1	20			
21	289 17.5 +03.3	N	23 25.3 +00.3	342 46.7 +02.8	N	21 47.9 +00.0	68 21.1 +02.3	S	07 57.1 -00.1	21			
22	304 20.8 +03.2	N	23 25.6 +00.3	357 49.5 +02.7	N	21 47.9 +00.0	83 23.4 +02.3	S	07 57.0 -00.1	22			
23	319 24.0 +03.3	N	23 25.9 +00.2	12 52.2 +02.8	N	21 47.9 -00.1	98 25.7 +02.3	S	07 56.9 +00.0	23			
	UT 02 06 10 14 18 22			UT 02 06 10 14 18 22			UT 02 06 10 14 18 22						
	SD 00'1 00'1 00'1 00'1 00'1 00'1			SD 00'4 00'4 00'4 00'4 00'4 00'4			SD 00'1 00'1 00'1 00'1 00'1 00'1						
	HP 00'2 00'2 00'2 00'2 00'2 00'2			HP 00'0 00'0 00'0 00'0 00'0 00'0			HP 00'0 00'0 00'0 00'0 00'0 00'0						
	SHA 234° 234° 234° 234° 234° 235°			SHA 288° 288° 288° 288° 288° 288°			SHA 014° 014° 014° 014° 014° 014°						
	Greenwich Culmination Time: 01:47			Greenwich Culmination Time: 22:08			Greenwich Culmination Time: 16:27						

UT	Sun				Venus				Moon				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	179	15.5 -00.3	S 23 04.6 -00.2		130	32.1 -00.1	S 14 01.2 -01.1		177	57.7 -34.6	S 27 56.1 -03.3		00		
01	194	15.2 -00.3	S 23 04.4 -00.2		145	32.0 -00.1	S 14 00.1 -01.0		192	23.1 -34.6	S 27 52.8 -03.5		01		
02	209	14.9 -00.3	S 23 04.2 -00.1		160	31.9 -00.1	S 13 59.1 -01.1		206	48.5 -34.6	S 27 49.3 -03.6		02		
03	224	14.6 -00.3	S 23 04.1 -00.2		175	31.8 +00.0	S 13 58.0 -01.1		221	13.9 -34.6	S 27 45.7 -03.8		03		
04	239	14.3 -00.3	S 23 03.9 -00.2		190	31.8 -00.1	S 13 56.9 -01.1		235	39.3 -34.5	S 27 41.9 -03.9		04		
05	254	14.0 -00.3	S 23 03.7 -00.2		205	31.7 -00.1	S 13 55.8 -01.1		250	04.8 -34.6	S 27 38.0 -04.1		05		
06	269	13.7 -00.3	S 23 03.5 -00.2		220	31.6 -00.1	S 13 54.7 -01.0		264	30.2 -34.5	S 27 33.9 -04.3		06		
07	284	13.4 -00.3	S 23 03.3 -00.2		235	31.5 -00.1	S 13 53.7 -01.1		278	55.7 -34.5	S 27 29.6 -04.5		07		
08	299	13.1 -00.3	S 23 03.1 -00.2		250	31.4 +00.0	S 13 52.6 -01.1		293	21.2 -34.5	S 27 25.1 -04.6		08		
09	314	12.8 -00.3	S 23 02.9 -00.2		265	31.4 -00.1	S 13 51.5 -01.1		307	46.7 -34.5	S 27 20.5 -04.8		09		
10	329	12.5 -00.3	S 23 02.7 -00.2		280	31.3 -00.1	S 13 50.4 -01.1		322	12.2 -34.4	S 27 15.7 -04.9		10		
11	344	12.2 -00.3	S 23 02.5 -00.2		295	31.2 -00.1	S 13 49.3 -01.1		336	37.8 -34.4	S 27 10.8 -05.1		11		
12	359	11.9 -00.3	S 23 02.3 -00.2		310	31.1 +00.0	S 13 48.2 -01.0		351	03.4 -34.4	S 27 05.7 -05.3		12		
13	14	11.6 -00.3	S 23 02.1 -00.2		325	31.1 -00.1	S 13 47.2 -01.1		5	29.0 -34.4	S 27 00.4 -05.4		13		
14	29	11.3 -00.3	S 23 01.9 -00.2		340	31.0 -00.1	S 13 46.1 -01.1		19	54.6 -34.3	S 26 55.0 -05.7		14		
15	44	11.0 -00.3	S 23 01.7 -00.2		355	30.9 -00.1	S 13 45.0 -01.1		34	20.3 -34.3	S 26 49.3 -05.7		15		
16	59	10.7 -00.3	S 23 01.5 -00.2		10	30.8 +00.0	S 13 43.9 -01.1		48	46.0 -34.2	S 26 43.6 -06.0		16		
17	74	10.4 -00.3	S 23 01.3 -00.2		25	30.8 -00.1	S 13 42.8 -01.1		63	11.8 -34.2	S 26 37.6 -06.0		17		
18	89	10.1 -00.2	S 23 01.1 -00.2		40	30.7 -00.1	S 13 41.7 -01.1		77	37.6 -34.2	S 26 31.6 -06.3		18		
19	104	09.9 -00.3	S 23 00.9 -00.2		55	30.6 +00.0	S 13 40.6 -01.1		92	03.4 -34.1	S 26 25.3 -06.4		19		
20	119	09.6 -00.3	S 23 00.7 -00.2		70	30.6 -00.1	S 13 39.5 -01.0		106	29.3 -34.1	S 26 18.9 -06.6		20		
21	134	09.3 -00.3	S 23 00.5 -00.2		85	30.5 -00.1	S 13 38.5 -01.1		120	55.2 -34.1	S 26 12.3 -06.7		21		
22	149	09.0 -00.3	S 23 00.3 -00.2		100	30.4 +00.0	S 13 37.4 -01.1		135	21.1 -34.0	S 26 05.6 -06.9		22		
23	164	08.7 -00.3	S 23 00.1 -00.2		115	30.4 -00.1	S 13 36.3 -01.1		149	47.1 -33.9	S 25 58.7 -07.1		23		
	UT 02 06 10 14 18 22					UT 02 06 10 14 18 22					UT 02 06 10 14 18 22				
	SD 16'3 16'3 16'3 16'3 16'3 16'3					SD 00'2 00'2 00'2 00'2 00'2 00'2					SD 15'5 15'5 15'6 15'6 15'6 15'6				
	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 56'9 57'0 57'1 57'2 57'3 57'4				
	SHA 079° 079° 079° 079° 079° 078°					SHA 031° 030° 030° 030° 030° 030°					SHA 077° 074° 072° 069° 067° 065°				
	Greenwich Culmination Time: 12:03				Greenwich Culmination Time: 15:17				Greenwich Culmination Time: 12:37						

  

UT	Mars				Jupiter				Saturn				UT		
	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec	GHA	ddGHA	Dec	dDec			
00	334	27.3 +03.3	N 23 26.1 +00.3		27	55.0 +02.7	N 21 47.8 +00.0		113	28.0 +02.3	S 07 56.9 -00.1		00		
01	349	30.6 +03.3	N 23 26.4 +00.3		42	57.7 +02.8	N 21 47.8 +00.0		128	30.3 +02.3	S 07 56.8 -00.1		01		
02	4	33.9 +03.3	N 23 26.7 +00.3		58	00.5 +02.7	N 21 47.8 +00.0		143	32.6 +02.3	S 07 56.7 -00.1		02		
03	19	37.2 +03.3	N 23 27.0 +00.2		73	03.2 +02.8	N 21 47.8 -00.1		158	34.9 +02.3	S 07 56.6 +00.0		03		
04	34	40.5 +03.2	N 23 27.2 +00.3		88	06.0 +02.7	N 21 47.7 +00.0		173	37.2 +02.2	S 07 56.6 -00.1		04		
05	49	43.7 +03.3	N 23 27.5 +00.3		103	08.7 +02.8	N 21 47.7 +00.0		188	39.4 +02.3	S 07 56.5 -00.1		05		
06	64	47.0 +03.3	N 23 27.8 +00.3		118	11.5 +02.8	N 21 47.7 +00.0		203	41.7 +02.3	S 07 56.4 -00.1		06		
07	79	50.3 +03.3	N 23 28.1 +00.2		133	14.3 +02.7	N 21 47.7 -00.1		218	44.0 +02.3	S 07 56.3 +00.0		07		
08	94	53.6 +03.3	N 23 28.3 +00.3		148	17.0 +02.8	N 21 47.6 +00.0		233	46.3 +02.3	S 07 56.3 -00.1		08		
09	109	56.9 +03.3	N 23 28.6 +00.3		163	19.8 +02.7	N 21 47.6 +00.0		248	48.6 +02.3	S 07 56.2 -00.1		09		
10	125	00.2 +03.3	N 23 28.9 +00.2		178	22.5 +02.8	N 21 47.6 +00.0		263	50.9 +02.3	S 07 56.1 -00.1		10		
11	140	03.5 +03.3	N 23 29.1 +00.3		193	25.3 +02.7	N 21 47.6 -00.1		278	53.2 +02.3	S 07 56.0 -00.1		11		
12	155	06.8 +03.3	N 23 29.4 +00.3		208	28.0 +02.8	N 21 47.5 +00.0		293	55.5 +02.3	S 07 55.9 +00.0		12		
13	170	10.1 +03.3	N 23 29.7 +00.3		223	30.8 +02.7	N 21 47.5 +00.0		308	57.8 +02.3	S 07 55.9 -00.1		13		
14	185	13.4 +03.3	N 23 30.0 +00.2		238	33.5 +02.8	N 21 47.5 +00.0		324	00.1 +02.3	S 07 55.8 -00.1		14		
15	200	16.7 +03.3	N 23 30.2 +00.3		253	36.3 +02.7	N 21 47.5 -00.1		339	02.4 +02.3	S 07 55.7 -00.1		15		
16	215	20.0 +03.3	N 23 30.5 +00.3		268	39.0 +02.8	N 21 47.4 +00.0		354	04.7 +02.3	S 07 55.6 +00.0		16		
17	230	23.3 +03.3	N 23 30.8 +00.3		283	41.8 +02.7	N 21 47.4 +00.0		9	07.0 +02.2	S 07 55.6 -00.1		17		
18	245	26.6 +03.3	N 23 31.1 +00.2		298	44.5 +02.8	N 21 47.4 +00.0		24	09.2 +02.3	S 07 55.5 -00.1		18		
19	260	29.9 +03.3	N 23 31.3 +00.3		313	47.3 +02.7	N 21 47.4 -00.1		39	11.5 +02.3	S 07 55.4 -00.1		19		
20	275	33.2 +03.3	N 23 31.6 +00.3		328	50.0 +02.8	N 21 47.3 +00.0		54	13.8 +02.3	S 07 55.3 -00.1		20		
21	290	36.5 +03.3	N 23 31.9 +00.3		343	52.8 +02.7	N 21 47.3 +00.0		69	16.1 +02.3	S 07 55.2 +00.0		21		
22	305	39.8 +03.3	N 23 32.2 +00.2		358	55.5 +02.8	N 21 47.3 +00.0		84	18.4 +02.3	S 07 55.2 -00.1		22		
23	320	43.1 +03.3	N 23 32.4 +00.3		13	58.3 +02.7	N 21 47.3 -00.1		99	20.7 +02.3	S 07 55.1 -00.1		23		
	UT 02 06 10 14 18 22					UT 02 06 10 14 18 22					UT 02 06 10 14 18 22				
	SD 00'1 00'1 00'1 00'1 00'1 00'1					SD 00'4 00'4 00'4 00'4 00'4 00'4					SD 00'1 00'1 00'1 00'1 00'1 00'1				
	HP 00'2 00'2 00'2 00'2 00'2 00'2					HP 00'0 00'0 00'0 00'0 00'0 00'0					HP 00'0 00'0 00'0 00'0 00'0 00'0				
	SHA 235° 235° 235° 235° 235° 235°					SHA 288° 288° 288° 288° 288° 288°					SHA 014° 014° 014° 014° 014° 013°				
	Greenwich Culmination Time: 01:41				Greenwich Culmination Time: 22:04				Greenwich Culmination Time: 16:23						



