

2006

Sun and Planets

Date	SUN					Mercury						Venus				
	GHA	d	Dec	d		GHA	d	dd	Dec	d	dd	GHA	d	Dec	d	
	o	'	o	'	vis mag	o	'		o	'		vis mag	o	'	o	'
Jan	1	179 10.4	-7.1	-23 1.9	5.0	sr -0.5 195 14.8	-38.5	0.4	-23 31.9	-9.6	-0.6	ss -4.4 158 33.6	82.9	-17 49.3	11.0	
	2	179 3.3	-7.0	-22 56.9	5.5	sr -0.5 194 36.4	-39.2	0.4	-23 41.5	-8.4	-0.6	ss -4.4 159 56.5	85.3	-17 38.3	10.7	
	3	178 56.3	-6.9	-22 51.4	5.9	sr -0.5 193 57.2	-39.8	0.3	-23 49.9	-7.3	-0.6	ss -4.4 161 21.8	87.5	-17 27.6	10.3	
	4	178 49.4	-6.8	-22 45.5	6.4	sr -0.5 193 17.4	-40.5	0.3	-23 57.2	-6.0	-0.6	ss -4.4 162 49.3	89.5	-17 17.3	10.0	
	5	178 42.6	-6.7	-22 39.1	6.8	sr -0.5 192 36.9	-41.0	0.3	-24 3.2	-4.8	-0.6	ss -4.3 164 18.8	91.4	-17 7.3	9.6	
	6	178 35.9	-6.6	-22 32.3	7.3	sr -0.5 191 55.9	-41.6	0.3	-24 8.0	-3.6	-0.6	ss -4.3 165 50.2	93.2	-16 57.7	9.2	
	7	178 29.3	-6.4	-22 25.0	7.7	sr -0.6 191 14.3	-42.1	0.3	-24 11.6	-2.2	-0.7	ss -4.2 167 23.4	94.7	-16 48.5	8.8	
	8	178 22.9	-6.3	-22 17.3	8.1	sr -0.6 190 32.2	-42.6	0.2	-24 13.8	-1.0	-0.6	ss -4.2 168 58.2	96.1	-16 39.7	8.4	
	9	178 16.6	-6.2	-22 9.2	8.6	sr -0.6 189 49.6	-43.0	0.2	-24 14.8	0.3	-0.6	ss -4.2 170 34.3	97.2	-16 31.3	8.0	
	10	178 10.4	-6.0	-22 0.6	9.0	sr -0.6 189 6.6	-43.5	0.2	-24 14.5	1.7	-0.7	ss -4.1 172 11.4	98.0	-16 23.3	7.5	
Jan	11	178 4.4	-5.9	-21 51.6	9.5	sr -0.6 188 23.1	-43.8	0.2	-24 12.8	3.0	-0.6	ss -4.1 173 49.5	98.6	-16 15.8	7.0	
	12	177 58.5	-5.7	-21 42.1	9.8	sr -0.7 187 39.3	-44.2	0.2	-24 9.8	4.4	-0.7	ss -4.1 175 28.1	99.0	-16 8.8	6.6	
	13	177 52.7	-5.6	-21 32.3	10.3	sr -0.7 186 55.1	-44.5	0.2	-24 5.4	5.8	-0.7	ss -4.0 177 7.1	99.0	-16 2.2	6.2	
	14	177 47.2	-5.4	-21 22.0	10.7	sr -0.7 186 10.5	-44.8	0.2	-23 59.6	7.2	-0.7	ss -4.0 178 46.2	98.8	-15 56.0	5.6	
	15	177 41.7	-5.3	-21 11.3	11.1	sr -0.8 185 25.7	-45.1	0.1	-23 52.4	8.6	-0.7	ss -4.0 180 25.0	98.4	-15 50.4	5.2	
	16	177 36.5	-5.1	-21 0.2	11.5	ss -0.8 184 40.6	-45.4	0.1	-23 43.8	10.0	-0.7	ss -4.1 182 3.4	97.6	-15 45.2	4.7	
	17	177 31.4	-4.9	-20 48.7	11.8	ss -0.9 183 55.2	-45.6	0.1	-23 33.8	11.5	-0.8	ss -4.1 183 41.0	96.6	-15 40.5	4.2	
	18	177 26.5	-4.7	-20 36.9	12.3	ss -0.9 183 9.6	-45.8	0.1	-23 22.3	12.9	-0.7	sr -4.2 185 17.6	95.4	-15 36.3	3.7	
	19	177 21.8	-4.6	-20 24.6	12.7	ss -0.9 182 23.7	-46.0	0.1	-23 9.4	14.4	-0.8	sr -4.2 186 53.0	93.9	-15 32.6	3.3	
	20	177 17.2	-4.4	-20 11.9	13.0	ss -1.0 181 37.7	-46.2	0.1	-22 55.0	15.8	-0.7	sr -4.2 188 27.0	92.3	-15 29.3	2.7	
Jan	21	177 12.9	-4.2	-19 58.9	13.4	ss -1.1 180 51.6	-46.3	0.1	-22 39.2	17.4	-0.8	sr -4.3 189 59.3	90.4	-15 26.6	2.3	
	22	177 8.7	-4.0	-19 45.5	13.8	ss -1.1 180 5.3	-46.4	0.1	-22 21.8	18.8	-0.7	sr -4.3 191 29.7	88.4	-15 24.3	1.8	
	23	177 4.7	-3.8	-19 31.7	14.2	ss -1.2 179 18.9	-46.5	0.0	-22 3.0	20.3	-0.8	sr -4.3 192 58.1	86.3	-15 22.5	1.4	
	24	177 0.9	-3.6	-19 17.5	14.5	ss -1.2 178 32.4	-46.5	0.0	-21 42.7	21.9	-0.8	sr -4.4 194 24.4	84.0	-15 21.1	0.9	
	25	176 57.2	-3.4	-19 3.0	14.8	ss -1.3 177 45.9	-46.6	0.0	-21 20.8	23.3	-0.7	sr -4.4 195 48.4	81.6	-15 20.2	0.6	
	26	176 53.8	-3.2	-18 48.2	15.2	ss -1.3 176 59.3	-46.6	0.0	-20 57.5	24.9	-0.8	sr -4.4 197 10.0	79.1	-15 19.6	0.1	
	27	176 50.6	-3.0	-18 33.0	15.5	ss -1.3 176 12.7	-46.6	0.0	-20 32.6	26.4	-0.8	sr -4.4 198 29.1	76.6	-15 19.5	-0.3	
	28	176 47.5	-2.8	-18 17.5	15.9	ss -1.4 175 26.1	-46.5	0.0	-20 6.2	27.9	-0.8	sr -4.5 199 45.8	74.1	-15 19.8	-0.6	
	29	176 44.7	-2.6	-18 1.6	16.2	ss -1.4 174 39.6	-46.4	0.0	-19 38.3	29.4	-0.7	sr -4.5 200 59.8	71.5	-15 20.4	-1.0	
	30	176 42.1	-2.4	-17 45.4	16.5	ss -1.4 173 53.2	-46.3	-0.1	-19 8.9	31.0	-0.8	sr -4.5 202 11.3	68.9	-15 21.4	-1.3	
Jan 31	176 39.6	-2.2	-17 28.9	16.8	ss -1.4 173 6.9	-46.1	-0.1	-18 37.9	32.4	-0.7	sr -4.5 203 20.2	66.3	-15 22.7	-1.6		
Feb	1	176 37.4	-2.0	-17 12.1	17.2	ss -1.3 172 20.8	-45.9	-0.1	-18 5.5	33.9	-0.8	sr -4.6 204 26.4	63.7	-15 24.3	-1.8	
	2	176 35.4	-1.8	-16 54.9	17.4	ss -1.3 171 34.8	-45.7	-0.1	-17 31.6	35.4	-0.8	sr -4.6 205 30.1	61.1	-15 26.1	-2.1	
	3	176 33.6	-1.6	-16 37.5	17.7	ss -1.3 170 49.2	-45.3	-0.2	-16 56.2	36.9	-0.8	sr -4.6 206 31.3	58.6	-15 28.2	-2.3	
	4	176 32.0	-1.4	-16 19.8	18.0	ss -1.3 170 3.9	-44.9	-0.2	-16 19.3	38.2	-0.6	sr -4.6 207 29.8	56.1	-15 30.5	-2.4	
	5	176 30.6	-1.2	-16 1.8	18.2	ss -1.3 169 18.9	-44.5	-0.2	-15 41.1	39.7	-0.8	sr -4.6 208 25.9	53.6	-15 32.9	-2.7	
	6	176 29.5	-1.0	-15 43.6	18.6	ss -1.3 168 34.5	-43.9	-0.3	-15 1.4	40.9	-0.6	sr -4.6 209 19.6	51.2	-15 35.6	-2.7	
	7	176 28.5	-0.8	-15 25.0	18.7	ss -1.2 167 50.6	-43.2	-0.3	-14 20.5	42.3	-0.7	sr -4.6 210 10.8	48.9	-15 38.3	-2.9	
	8	176 27.7	-0.6	-15 6.3	19.1	ss -1.2 167 7.4	-42.4	-0.4	-13 38.2	43.5	-0.6	sr -4.6 210 59.6	46.6	-15 41.2	-2.9	
	9	176 27.2	-0.4	-14 47.2	19.3	ss -1.2 166 25.0	-41.4	-0.5	-12 54.7	44.6	-0.5	sr -4.6 211 46.2	44.3	-15 44.1	-2.9	
	10	176 26.8	-0.2	-14 27.9	19.5	ss -1.2 165 43.6	-40.3	-0.6	-12 10.1	45.6	-0.5	sr -4.6 212 30.5	42.1	-15 47.0	-3.0	
Feb	11	176 26.6	0.0	-14 8.4	19.8	ss -1.2 165 3.3	-38.9	-0.7	-11 24.5	46.5	-0.5	sr -4.6 213 12.7	40.0	-15 50.0	-3.0	
	12	176 26.6	0.2	-13 48.6	20.0	ss -1.2 164 24.4	-37.3	-0.8	-10 38.0	47.3	-0.4	sr -4.6 213 52.7	38.0	-15 53.0	-2.9	
	13	176 26.9	0.4	-13 28.6	20.2	ss -1.1 163 47.0	-35.5	-0.9	-9 50.7	47.8	-0.3	sr -4.6 214 30.7	36.0	-15 55.9	-2.8	
	14	176 27.3	0.6	-13 8.4	20.4	ss -1.1 163 11.5	-33.3	-1.1	-9 2.9	48.3	-0.2	sr -4.6 215 6.7	34.1	-15 58.7	-2.7	
	15	176 27.8	0.8	-12 48.0	20.6	ss -1.1 162 38.2	-30.8	-1.3	-8 14.6	48.5	-0.1	sr -4.6 215 40.7	32.2	-16 1.4	-2.6	
	16	176 28.6	0.9	-12 27.4	20.8	ss -1.0 162 7.4	-27.9	-1.4	-7 26.1	48.4	0.0	sr -4.6 216 12.9	30.4	-16 4.0	-2.5	
	17	176 29.6	1.1	-12 6.6	21.1	ss -1.0 161 39.5	-24.6	-1.7	-6 37.7	48.1	0.2	sr -4.6 216 43.4	28.7	-16 6.5	-2.3	
	18	176 30.7	1.3	-11 45.5	21.2	ss -1.0 161 14.9	-20.8	-1.9	-5 49.6	47.5	0.3	sr -4.6 217 12.1	27.0	-16 8.8	-2.1	
	19	176 32.0	1.5	-11 24.3	21.4	ss -0.9 160 54.0	-16.6	-2.1	-5 2.1	46.5	0.5	sr -4.6 217 39.1	25.5	-16 10.9	-1.9	
	20	176 33.4	1.6	-11 2.9	21.5	ss -0.8 160 37.5	-11.8	-2.4	-4 15.6	45.3	0.6	sr -4.6 218 4.6	23.9	-16 12.8	-1.6	
Feb	21	176 35.0	1.8	-10 41.4	21.8	ss -0.8 160 25.7	-6.5	-2.7	-3 30.3	43.5	0.9	sr -4.6 218 28.5	22.5	-16 14.4	-1.4	
	22	176 36.8	1.9	-10 19.6	21.9	ss -0.7 160 19.3	-0.6	-2.9	-2 46.8	41.6	0.9	sr -4.6 218 50.9	21.0	-16 15.8	-1.2	
	23	176 38.7	2.1	-9 57.7	22.0	ss -0.6 160 18.7	5.8	-3.2	-2 5.2	39.1	1.3	sr -4.6 219 12.0	19.7	-16 17.0	-0.8	
	24	176 40.8	2.2	-9 35.7	22.2	ss -0.4 160 24.5	12.7	-3.4	-1 26.1	36.3	1.4	sr -4.6 219 31.7	18.4	-16 17.8	-0.5	
	25	176 43.0	2.4	-9 13.5	22.4	ss -0.3 160 37.1	20.0	-3.7	-0 49.8	33.1	1.6	sr -4.6 219 50.1	17.2	-16 18.3	-0.2	
	26	176 45.4	2.5	-8 51.1	22.4	ss -0.1 160 57.1	27.7	-3.9	-0 16.7	29.6	1.8	sr -4.6 220 7.3	16.0	-16 18.5	0.1	
	27	176 47.9	2.6	-8 28.7	22.6	ss 0.1 161 24.8	35.8	-4.0	0 12.9	25.6	2.0	sr -4.6 220 23.3	14.9	-16 18.4	0.4	
	28	176 50.5	2.8	-8 6.1	22.7	ss 0.3 162 0.6	44.1	-4.1	0 38.5	21.5	2.1	sr -4.6 220 38.1	13.8	-16 18.0	0.9	
	Mar 1	176 53.3	2.9	-7 43.4	22.9	ss 0.6 162 44.7	52.5	-4.2	1 0.0	17.0	2.3	sr -4.6 220 52.0	12.8	-16 17.1	1.2	
	Mar	2	176 56.2	3.0	-7 20.5	22.9	ss 0.8 163 37.1	60.8	-4.2	1 17.0	12.4	2.3	sr -4.6 221 4.7	11.8	-16 15.9	1.6
3		176 59.2	3.1	-6 57.6	23.0	ss 1.1 164 38.0	69.0	-4.1	1 29.4	7.6	2.4	sr -4.6 221 16.6	10.9	-16 14.3	2.0	
4		177 2.3	3.3	-6 34.6	23.1	ss 1.4 165 47.0	76.9	-3.9	1 37.0	2.6	2.5	sr -4.6 221 27.5	10.0	-16 12.3	2.3	
5		177 5.6	3.4	-6 11.5	23.2	ss 1.7 167 3.9	84.3	-3.7	1 39.6	-2.2	2.4	sr -4.6 221 37.5	9.2	-16 10.0	2.8	
6		177 9.0	3.5	-5 48.3	23.3	ss 2.0 168 28.2	91.1	-3.4	1 37.4	-7.0	2.4	sr -4.5 221 46.6	8.3	-16 7.2	3.2	

2006

Sun and Planets

Date	Mars					Jupiter					Saturn													
	GHA		d	Dec		GHA		d	Dec		GHA		d	Dec										
	vis	mag		o	'	o	'		o	'	o	'		o	'	o	'							
Jan 1	y	-0.6	62	21.7	44.6	16	37.2	5.5	y	-1.8	239	19.2	49.6	-14	47.2	-2.8	y	0.6	327	57.9	63.1	18	22.0	1.2
2	y	-0.6	63	6.3	44.1	16	42.7	5.6	y	-1.8	240	8.8	49.7	-14	50.0	-2.7	y	0.6	329	1.0	63.2	18	23.2	1.2
3	y	-0.6	63	50.4	43.5	16	48.3	5.6	y	-1.8	240	58.5	49.8	-14	52.7	-2.7	y	0.6	330	4.2	63.3	18	24.4	1.3
4	y	-0.5	64	33.9	43.0	16	53.9	5.8	y	-1.8	241	48.4	49.9	-14	55.4	-2.7	y	0.6	331	7.5	63.3	18	25.7	1.2
5	y	-0.5	65	16.9	42.5	16	59.7	5.9	y	-1.8	242	38.3	50.0	-14	58.1	-2.6	y	0.6	332	10.8	63.4	18	26.9	1.3
6	y	-0.5	65	59.3	42.0	17	5.6	6.1	y	-1.8	243	28.3	50.1	-15	0.7	-2.5	y	0.6	333	14.2	63.5	18	28.2	1.2
7	y	-0.4	66	41.3	41.5	17	11.7	6.0	y	-1.9	244	18.4	50.2	-15	3.2	-2.6	y	0.6	334	17.7	63.5	18	29.4	1.3
8	y	-0.4	67	22.8	41.0	17	17.7	6.2	y	-1.9	245	8.6	50.3	-15	5.8	-2.5	y	0.6	335	21.2	63.6	18	30.7	1.3
9	y	-0.4	68	3.8	40.5	17	23.9	6.3	y	-1.9	245	59.0	50.5	-15	8.3	-2.4	y	0.6	336	24.7	63.6	18	32.0	1.3
10	y	-0.4	68	44.3	40.1	17	30.2	6.3	y	-1.9	246	49.4	50.6	-15	10.7	-2.4	y	0.6	337	28.3	63.7	18	33.3	1.3
11	y	-0.3	69	24.4	39.6	17	36.5	6.5	y	-1.9	247	40.0	50.7	-15	13.1	-2.3	y	0.6	338	32.0	63.7	18	34.6	1.4
12	y	-0.3	70	4.0	39.2	17	43.0	6.4	y	-1.9	248	30.7	50.8	-15	15.4	-2.4	y	0.6	339	35.7	63.8	18	36.0	1.3
13	y	-0.3	70	43.1	38.7	17	49.4	6.6	y	-1.9	249	21.5	50.9	-15	17.8	-2.2	y	0.6	340	39.5	63.8	18	37.3	1.4
14	y	-0.2	71	21.9	38.3	17	56.0	6.6	y	-1.9	250	12.4	51.0	-15	20.0	-2.2	y	0.6	341	43.3	63.8	18	38.7	1.3
15	y	-0.2	72	0.2	37.9	18	2.6	6.7	y	-1.9	251	3.4	51.2	-15	22.2	-2.2	y	0.5	342	47.2	63.9	18	40.0	1.4
16	y	-0.2	72	38.1	37.5	18	9.3	6.7	y	-1.9	251	54.6	51.3	-15	24.4	-2.2	y	0.5	343	51.0	63.9	18	41.4	1.3
17	y	-0.2	73	15.6	37.1	18	16.0	6.7	y	-1.9	252	45.9	51.4	-15	26.6	-2.1	y	0.5	344	55.0	64.0	18	42.7	1.4
18	y	-0.1	73	52.8	36.7	18	22.7	6.8	y	-1.9	253	37.3	51.5	-15	28.7	-2.0	y	0.5	345	58.9	64.0	18	44.1	1.4
19	y	-0.1	74	29.5	36.4	18	29.5	6.9	y	-1.9	254	28.9	51.7	-15	30.7	-2.0	y	0.5	347	2.9	64.0	18	45.5	1.3
20	y	-0.1	75	5.9	36.0	18	36.4	6.9	y	-1.9	255	20.5	51.8	-15	32.7	-2.0	y	0.5	348	6.9	64.0	18	46.8	1.4
21	y	-0.1	75	41.9	35.6	18	43.3	6.9	y	-1.9	256	12.4	51.9	-15	34.7	-1.9	y	0.5	349	11.0	64.1	18	48.2	1.4
22	y	0.0	76	17.5	35.3	18	50.2	6.9	y	-1.9	257	4.3	52.1	-15	36.6	-1.9	y	0.5	350	15.0	64.1	18	49.6	1.4
23	y	0.0	76	52.8	34.9	18	57.1	7.0	y	-1.9	257	56.4	52.2	-15	38.5	-1.8	y	0.5	351	19.1	64.1	18	51.0	1.4
24	y	0.0	77	27.7	34.6	19	4.1	6.9	y	-1.9	258	48.6	52.4	-15	40.3	-1.8	y	0.5	352	23.2	64.1	18	52.4	1.3
25	y	0.0	78	2.3	34.2	19	11.0	7.0	y	-2.0	259	41.0	52.5	-15	42.1	-1.7	y	0.5	353	27.3	64.1	18	53.7	1.4
26	y	0.1	78	36.5	33.9	19	18.0	7.0	y	-2.0	260	33.5	52.6	-15	43.8	-1.7	y	0.5	354	31.5	64.1	18	55.1	1.4
27	y	0.1	79	10.4	33.6	19	25.0	7.0	y	-2.0	261	26.1	52.8	-15	45.5	-1.6	y	0.5	355	35.6	64.1	18	56.5	1.4
28	y	0.1	79	43.9	33.2	19	32.0	7.1	y	-2.0	262	18.9	52.9	-15	47.1	-1.6	y	0.5	356	39.7	64.1	18	57.9	1.3
29	y	0.1	80	17.2	32.9	19	39.1	7.0	y	-2.0	263	11.9	53.1	-15	48.7	-1.5	y	0.5	357	43.9	64.1	18	59.2	1.4
30	y	0.2	80	50.1	32.6	19	46.1	7.0	y	-2.0	264	5.0	53.2	-15	50.2	-1.5	y	0.5	358	48.0	64.1	19	0.6	1.4
Jan 31	y	0.2	81	22.7	32.3	19	53.1	7.0	y	-2.0	264	58.2	53.4	-15	51.7	-1.5	y	0.5	359	52.2	64.1	19	2.0	1.3
Feb 1	y	0.2	81	55.0	32.0	20	0.1	7.0	y	-2.0	265	51.6	53.6	-15	53.2	-1.4	y	0.5	0	56.3	64.1	19	3.3	1.4
2	y	0.2	82	27.0	31.7	20	7.1	7.0	y	-2.0	266	45.2	53.7	-15	54.6	-1.3	y	0.5	2	0.4	64.1	19	4.7	1.3
3	y	0.3	82	58.7	31.4	20	14.1	7.0	y	-2.0	267	38.9	53.9	-15	55.9	-1.3	y	0.5	3	4.5	64.1	19	6.0	1.3
4	y	0.3	83	30.1	31.1	20	21.1	6.9	y	-2.0	268	32.8	54.0	-15	57.2	-1.3	y	0.5	4	8.6	64.1	19	7.3	1.4
5	y	0.3	84	1.3	30.9	20	28.0	7.0	y	-2.0	269	26.8	54.2	-15	58.5	-1.2	y	0.5	5	12.7	64.0	19	8.7	1.3
6	y	0.3	84	32.2	30.6	20	35.0	6.9	y	-2.0	270	21.0	54.4	-15	59.7	-1.1	y	0.5	6	16.7	64.0	19	10.0	1.3
7	y	0.3	85	2.7	30.3	20	41.9	6.8	y	-2.0	271	15.4	54.5	-16	0.8	-1.1	y	0.5	7	20.7	64.0	19	11.3	1.3
8	y	0.4	85	33.1	30.1	20	48.7	6.9	y	-2.0	272	9.9	54.7	-16	1.9	-1.1	y	0.5	8	24.7	64.0	19	12.6	1.2
9	y	0.4	86	3.2	29.8	20	55.6	6.8	y	-2.1	273	4.6	54.9	-16	3.0	-1.0	y	0.5	9	28.7	63.9	19	13.8	1.3
10	y	0.4	86	33.0	29.6	21	2.4	6.7	y	-2.1	273	59.5	55.0	-16	4.0	-1.0	y	0.5	10	32.6	63.9	19	15.1	1.3
11	y	0.4	87	2.6	29.3	21	9.1	6.7	y	-2.1	274	54.5	55.2	-16	5.0	-0.9	y	0.6	11	36.5	63.9	19	16.4	1.2
12	y	0.4	87	31.9	29.1	21	15.8	6.7	y	-2.1	275	49.7	55.4	-16	5.9	-0.8	y	0.6	12	40.4	63.8	19	17.6	1.2
13	y	0.5	88	1.0	28.9	21	22.5	6.6	y	-2.1	276	45.1	55.5	-16	6.7	-0.9	y	0.6	13	44.2	63.8	19	18.8	1.3
14	y	0.5	88	29.9	28.6	21	29.1	6.6	y	-2.1	277	40.6	55.7	-16	7.6	-0.7	y	0.6	14	48.0	63.7	19	20.1	1.2
15	y	0.5	88	58.5	28.4	21	35.7	6.5	y	-2.1	278	36.3	55.9	-16	8.3	-0.7	y	0.6	15	51.7	63.7	19	21.3	1.1
16	y	0.5	89	26.9	28.2	21	42.2	6.4	y	-2.1	279	32.2	56.1	-16	9.0	-0.7	y	0.6	16	55.4	63.6	19	22.4	1.2
17	y	0.5	89	55.1	28.0	21	48.6	6.4	y	-2.1	280	28.3	56.3	-16	9.7	-0.6	y	0.6	17	59.0	63.6	19	23.6	1.2
18	y	0.6	90	23.1	27.8	21	55.0	6.3	y	-2.1	281	24.5	56.4	-16	10.3	-0.6	y	0.6	19	2.6	63.5	19	24.8	1.1
19	y	0.6	90	50.9	27.6	22	1.3	6.2	y	-2.1	282	21.0	56.6	-16	10.9	-0.5	y	0.6	20	6.1	63.5	19	25.9	1.1
20	y	0.6	91	18.5	27.4	22	7.5	6.2	y	-2.1	283	17.6	56.8	-16	11.4	-0.4	y	0.6	21	9.6	63.4	19	27.0	1.1
21	y	0.6	91	45.8	27.1	22	13.7	6.1	y	-2.1	284	14.4	57.0	-16	11.8	-0.4	y	0.6	22	13.0	63.3	19	28.1	1.1
22	y	0.6	92	13.0	26.9	22	19.8	6.0	y	-2.1	285	11.4	57.2	-16	12.2	-0.4	y	0.6	23	16.3	63.3	19	29.2	1.0
23	y	0.6	92	39.9	26.7	22	25.8	6.0	y	-2.1	286	8.5	57.3	-16	12.6	-0.3	y	0.6	24	19.6	63.2	19	30.2	1.1
24	y	0.7	93	6.7	26.6	22	31.8	5.9	y	-2.2	287	5.9	57.5	-16	12.9	-0.3	y	0.6	25	22.8	63.1	19	31.3	1.0
25	y	0.7	93	33.2	26.4	22	37.7	5.8	y	-2.2	288	3.4	57.7	-16	13.2	-0.2	y	0.6	26	25.9	63.1	19	32.3	1.0
26	y	0.7	93	59.6	26.2	22	43.5	5.7	y	-2.2	289	1.1	57.9	-16	13.4	-0.1	y	0.7	27	29.0	63.0	19	33.3	1.0
27	y	0.7	94	25.8	26.0	22	49.2	5.6	y	-2.2	289	59.0	58.1	-16	13.5	-0.1	y	0.7	28	31.9	62.9	19	34.3	0.9
Feb 28	y	0.7	94	51.7	25.8	22	54.8	5.5	y	-2.2	290	57.1	58.3	-16	13.6	-0.1	y	0.7	29	34.9	62.8	19	35.2	1.0
Mar 1	y	0.8	95	17.5	25.6	23	0.3	5.5	y	-2.2	291	55.4	58.5	-16	13.7	0.0	y	0.7	30	37.7	62.8	19	36.2	0.9
2	y	0.8	95	43.2	25.4	23	5.8	5.3	y	-2.2	292	53.9	58.7	-16	13.7									

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Sun and Planets

Date	SUN					Mercury					Venus													
	GHA	d	Dec	d		GHA	d	dd	Dec	d	dd	vis	GHA	d	Dec	d								
	o	'	o	'		o	'	'	o	'	'	mag	o	'	o	'								
Mar 7	177	12.5	3.6	-5	25.0	23.4	2.3	169	59.3	97.0	-3.0	1	30.4	-11.5	2.3	sr	-4.5	221	55.0	7.6	-16	4.0	3.7	
	177	16.1	3.7	-5	1.6	23.4	2.6	171	36.3	102.0	-2.5	1	18.9	-15.9	2.2	sr	-4.5	222	2.5	6.8	-16	0.3	4.0	
8	177	19.8	3.8	-4	38.2	23.4	2.9	173	18.3	105.9	-2.0	1	3.0	-19.7	1.9	sr	-4.5	222	9.4	6.1	-15	56.3	4.6	
9	177	23.6	3.9	-4	14.8	23.6	3.2	175	4.3	108.7	-1.4	0	43.3	-23.1	1.7	sr	-4.5	222	15.5	5.5	-15	51.7	4.9	
10	177	27.4	4.0	-3	51.2	23.5	3.0	176	53.0	110.3	-0.8	0	20.2	-26.0	1.5	sr	-4.5	222	21.0	4.9	-15	46.8	5.4	
11	177	31.4	4.0	-3	27.7	23.6	2.9	178	43.3	110.7	-0.2	-0	5.8	-28.2	1.1	sr	-4.5	222	25.9	4.3	-15	41.4	5.9	
12	177	35.4	4.1	-3	4.1	23.7	2.8	180	33.9	109.9	0.4	-0	34.0	-29.8	0.8	sr	-4.5	222	30.1	3.7	-15	35.5	6.3	
13	177	39.5	4.2	-2	40.4	23.6	2.7	182	23.9	108.1	0.9	-1	3.8	-30.8	0.5	sr	-4.5	222	33.8	3.1	-15	29.2	6.8	
14	177	43.7	4.2	-2	16.8	23.7	2.6	184	11.9	105.3	1.4	-1	34.6	-31.1	0.2	sr	-4.5	222	37.0	2.6	-15	22.4	7.3	
15	177	48.0	4.3	-1	53.1	23.7	sr	2.4	185	57.2	101.7	1.8	-2	5.7	-30.9	-0.1	sr	-4.5	222	39.6	2.2	-15	15.1	7.7
16	177	52.2	4.3	-1	29.4	23.7	sr	2.3	187	38.9	97.3	2.2	-2	36.6	-30.1	-0.4	sr	-4.5	222	41.8	1.7	-15	7.4	8.2
17	177	56.6	4.4	-1	5.7	23.8	sr	2.2	189	16.2	92.5	2.4	-3	6.7	-29.0	-0.6	sr	-4.5	222	43.5	1.3	-14	59.2	8.7
18	178	1.0	4.4	-0	41.9	23.7	sr	2.1	190	48.7	87.3	2.6	-3	35.7	-27.4	-0.8	sr	-4.4	222	44.7	0.9	-14	50.5	9.1
19	178	5.4	4.4	-0	18.2	23.7	sr	2.0	192	16.0	81.7	2.8	-4	3.1	-25.5	-0.9	sr	-4.4	222	45.6	0.5	-14	41.4	9.7
20	178	9.8	4.5	0	5.5	23.7	sr	1.8	193	37.7	76.1	2.8	-4	28.6	-23.5	-1.0	sr	-4.4	222	46.1	0.1	-14	31.7	10.1
21	178	14.3	4.5	0	29.2	23.7	sr	1.7	194	53.8	70.4	2.8	-4	52.1	-21.1	-1.2	sr	-4.4	222	46.2	-0.2	-14	21.6	10.5
22	178	18.8	4.5	0	52.9	23.6	sr	1.6	196	4.2	64.8	2.8	-5	13.2	-18.8	-1.1	sr	-4.4	222	46.0	-0.5	-14	11.1	11.0
23	178	23.3	4.5	1	16.5	23.7	sr	1.5	197	9.0	59.2	2.8	-5	32.0	-16.3	-1.3	sr	-4.4	222	45.5	-0.8	-14	0.1	11.5
24	178	27.8	4.5	1	40.2	23.6	sr	1.4	198	8.2	53.8	2.7	-5	48.3	-13.9	-1.2	sr	-4.4	222	44.7	-1.1	-13	48.6	12.0
25	178	32.3	4.5	2	3.8	23.5	sr	1.2	199	2.0	48.7	2.6	-6	2.2	-11.3	-1.3	sr	-4.4	222	43.7	-1.3	-13	36.6	12.4
26	178	36.9	4.5	2	27.3	23.5	sr	1.1	199	50.7	43.7	2.5	-6	13.5	-8.8	-1.3	sr	-4.4	222	42.4	-1.5	-13	24.2	12.8
27	178	41.4	4.5	2	50.8	23.4	sr	1.0	200	34.4	39.0	2.4	-6	22.3	-6.4	-1.2	sr	-4.4	222	40.8	-1.7	-13	11.4	13.3
28	178	45.9	4.5	3	14.2	23.4	sr	0.9	201	13.4	34.5	2.2	-6	28.7	-4.0	-1.2	sr	-4.4	222	39.1	-1.9	-12	58.1	13.8
29	178	50.4	4.5	3	37.6	23.3	sr	0.8	201	47.9	30.3	2.1	-6	32.7	-1.7	-1.2	sr	-4.3	222	37.2	-2.1	-12	44.3	14.1
30	178	54.9	4.5	4	0.9	23.3	sr	0.8	202	18.3	26.4	2.0	-6	34.4	0.7	-1.2	sr	-4.3	222	35.1	-2.3	-12	30.2	14.6
Mar 31	178	59.4	4.4	4	24.2	23.1	sr	0.7	202	44.6	22.6	1.9	-6	33.7	2.8	-1.1	sr	-4.3	222	32.8	-2.4	-12	15.6	15.1
Apr 1	179	3.8	4.4	4	47.3	23.1	sr	0.6	203	7.2	19.1	1.8	-6	30.9	4.9	-1.0	sr	-4.3	222	30.4	-2.6	-12	0.5	15.4
2	179	8.2	4.4	5	10.4	23.0	sr	0.6	203	26.3	15.8	1.6	-6	26.0	7.1	-1.1	sr	-4.3	222	27.8	-2.7	-11	45.1	15.9
3	179	12.6	4.3	5	33.4	22.8	sr	0.5	203	42.2	12.7	1.5	-6	18.9	9.0	-0.9	sr	-4.3	222	25.2	-2.8	-11	29.2	16.2
4	179	17.0	4.3	5	56.2	22.8	sr	0.5	203	54.9	9.8	1.4	-6	9.9	10.9	-0.9	sr	-4.3	222	22.4	-2.9	-11	13.0	16.7
5	179	21.3	4.3	6	19.0	22.7	sr	0.5	204	4.8	7.1	1.4	-5	59.0	12.8	-1.0	sr	-4.3	222	19.5	-3.0	-10	56.3	17.0
6	179	25.5	4.2	6	41.7	22.5	sr	0.4	204	11.9	4.6	1.3	-5	46.2	14.7	-0.9	sr	-4.3	222	16.5	-3.1	-10	39.3	17.5
7	179	29.8	4.2	7	4.2	22.4	sr	0.4	204	16.4	2.1	1.2	-5	31.5	16.3	-0.8	sr	-4.3	222	13.4	-3.2	-10	21.8	17.8
8	179	33.9	4.1	7	26.6	22.3	sr	0.4	204	18.6	-0.1	1.1	-5	15.2	18.1	-0.9	sr	-4.3	222	10.3	-3.2	-10	4.0	18.2
9	179	38.0	4.0	7	48.9	22.2	sr	0.3	204	18.4	-2.3	1.1	-5	57.1	19.6	-0.8	sr	-4.3	222	7.0	-3.3	-9	45.8	18.5
10	179	42.1	4.0	8	11.1	22.0	sr	0.3	204	16.1	-4.4	1.0	-4	37.5	21.3	-0.9	sr	-4.3	222	3.7	-3.4	-9	27.3	18.9
11	179	46.0	3.9	8	33.1	21.9	sr	0.3	204	11.8	-6.3	1.0	-4	16.2	22.8	-0.8	sr	-4.2	222	0.4	-3.4	-9	8.4	19.3
12	179	49.9	3.8	8	55.0	21.7	sr	0.2	204	5.5	-8.2	0.9	-3	53.4	24.2	-0.7	sr	-4.2	221	57.0	-3.5	-8	49.1	19.5
13	179	53.8	3.7	9	16.7	21.6	sr	0.2	203	57.3	-10.0	0.9	-3	29.2	25.7	-0.8	sr	-4.2	221	53.5	-3.5	-8	29.6	20.0
14	179	57.5	3.6	9	38.3	21.4	sr	0.2	203	47.3	-11.7	0.9	-3	3.5	27.1	-0.7	sr	-4.2	221	50.0	-3.6	-8	9.6	20.2
15	180	1.1	3.6	9	59.7	21.3	sr	0.1	203	35.6	-13.4	0.8	-2	36.4	28.4	-0.7	sr	-4.2	221	46.4	-3.6	-7	49.4	20.5
16	180	4.7	3.5	10	21.0	21.0	sr	0.1	203	22.2	-15.0	0.8	-2	8.0	29.7	-0.7	sr	-4.2	221	42.8	-3.7	-7	28.9	20.9
17	180	8.2	3.4	10	42.0	21.0	sr	0.1	203	7.2	-16.6	0.8	-1	38.3	31.0	-0.6	sr	-4.2	221	39.1	-3.7	-7	8.0	21.1
18	180	11.5	3.3	11	3.0	20.7	sr	0.1	202	50.6	-18.2	0.8	-1	7.3	32.2	-0.6	sr	-4.2	221	35.5	-3.7	-6	46.9	21.5
19	180	14.8	3.1	11	23.7	20.5	sr	0.0	202	32.4	-19.7	0.8	-0	35.1	33.4	-0.6	sr	-4.2	221	31.7	-3.8	-6	25.4	21.7
20	180	17.9	3.0	11	44.2	20.4	sr	0.0	202	12.6	-21.3	0.8	-0	1.7	34.6	-0.6	sr	-4.2	221	28.0	-3.8	-6	3.7	21.9
21	180	20.9	2.9	12	4.6	20.1	sr	-0.1	201	51.3	-22.8	0.8	0	32.9	35.7	-0.5	sr	-4.2	221	24.2	-3.8	-5	41.8	22.3
22	180	23.8	2.8	12	24.7	20.0	sr	-0.1	201	28.5	-24.4	0.8	1	8.6	36.7	-0.5	sr	-4.2	221	20.4	-3.9	-5	19.5	22.4
23	180	26.6	2.7	12	44.7	19.7	sr	-0.1	201	4.1	-25.9	0.8	1	45.3	37.7	-0.5	sr	-4.2	221	16.5	-3.9	-4	57.1	22.6
24	180	29.3	2.6	13	4.4	19.6	sr	-0.2	200	38.2	-27.5	0.8	2	23.0	38.8	-0.6	sr	-4.2	221	12.6	-3.9	-4	34.3	22.9
25	180	31.9	2.4	13	24.0	19.3	sr	-0.2	200	10.7	-29.1	0.8	3	1.8	39.7	-0.4	sr	-4.2	221	8.7	-3.9	-4	11.4	23.1
26	180	34.3	2.3	13	43.3	19.1	sr	-0.3	199	41.6	-30.7	0.8	3	41.5	40.6	-0.5	sr	-4.1	221	4.8	-4.0	-3	48.3	23.4
27	180	36.6	2.2	14	2.4	18.8	sr	-0.3	199	10.9	-32.4	0.8	4	22.1	41.5	-0.4	sr	-4.1	221	0.8	-4.0	-3	24.9	23.5
28	180	38.8	2.0	14	21.2	18.6	sr	-0.4	198	38.5	-34.1	0.9	5	3.6	42.3	-0.4	sr	-4.1	220	56.8	-4.0	-3	1.4	23.7
29	180	40.8	1.9	14	39.8	18.4	sr	-0.4	198	4.4	-35.9	0.9	5	45.9	43.1	-0.4	sr	-4.1	220	52.8	-4.1	-2	37.7	23.9
Apr 30	180	42.7	1.8	14	58.2	18.1	sr	-0.5	197	28.5	-37.7	0.9	6	29.0	43.8	-0.4	sr	-4.1	220	48.7	-4.1	-2	13.8	24.0
May 1	180	44.5	1.7	15	16.3	17.9	sr	-0.5	196	50.8	-39.6	0.9	7	12.8	44.5	-0.3	sr	-4.1	220	44.6	-4.2	-1	49.8	24.2
2	180	46.2	1.5	15	34.2	17.6	sr	-0.6	196	11.2	-41.5	1.0	7	57										

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Date	Mars					Jupiter					Saturn									
	vis	GHA		d	Dec	vis	GHA		d	Dec	vis	GHA		d	Dec					
	mag	o		'	o	mag	o		'	o	mag	o		'	o					
Mar 7	y	0.9	97	48.7	24.6	23	31.5	49.1	59.6	-16	12.9	0.3	y	0.7	36	52.9	62.2	19	41.3	0.8
8	y	0.9	98	13.4	24.5	23	36.4	48.7	59.8	-16	12.6	0.3	y	0.7	37	55.1	62.1	19	42.1	0.7
9	y	0.9	98	37.9	24.3	23	41.1	48.5	60.0	-16	12.3	0.4	y	0.7	38	57.3	62.0	19	42.8	0.7
10	y	0.9	99	2.2	24.2	23	45.7	48.5	60.2	-16	11.9	0.5	y	0.7	39	59.3	61.9	19	43.5	0.7
11	y	0.9	99	26.4	24.1	23	50.2	48.7	60.4	-16	11.4	0.4	y	0.7	41	1.2	61.8	19	44.2	0.7
12	y	0.9	99	50.4	23.9	23	54.6	49.0	60.5	-16	11.0	0.6	y	0.7	42	3.1	61.7	19	44.9	0.7
13	y	0.9	100	14.3	23.8	23	58.9	49.6	60.7	-16	10.4	0.6	y	0.8	43	4.8	61.6	19	45.6	0.6
14	y	1.0	100	38.1	23.7	24	3.1	50.3	60.9	-16	9.8	0.6	y	0.8	44	6.5	61.6	19	46.2	0.6
15	y	1.0	101	1.8	23.5	24	7.1	51.2	61.1	-16	9.2	0.7	y	0.8	45	8.0	61.4	19	46.8	0.6
16	y	1.0	101	25.3	23.4	24	11.0	52.3	61.3	-16	8.5	0.8	y	0.8	46	9.5	61.3	19	47.4	0.5
17	y	1.0	101	48.7	23.3	24	14.8	53.6	61.5	-16	7.7	0.8	y	0.8	47	10.8	61.2	19	47.9	0.5
18	y	1.0	102	12.0	23.2	24	18.5	55.1	61.6	-16	6.9	0.8	y	0.8	48	12.1	61.1	19	48.4	0.5
19	y	1.0	102	35.1	23.0	24	22.0	56.7	61.8	-16	6.1	0.9	y	0.8	49	13.2	61.0	19	48.9	0.5
20	y	1.0	102	58.2	22.9	24	25.5	58.6	62.0	-16	5.2	0.9	y	0.8	50	14.2	60.9	19	49.4	0.4
21	y	1.1	103	21.1	22.8	24	28.7	0.6	62.2	-16	4.3	1.0	y	0.8	51	15.2	60.8	19	49.8	0.5
22	y	1.1	103	43.9	22.7	24	31.9	2.8	62.4	-16	3.3	1.0	y	0.8	52	16.0	60.7	19	50.3	0.3
23	y	1.1	104	6.6	22.6	24	34.9	5.1	62.5	-16	2.3	1.1	y	0.8	53	16.7	60.6	19	50.6	0.4
24	y	1.1	104	29.2	22.5	24	37.8	7.6	62.7	-16	1.2	1.1	y	0.8	54	17.3	60.5	19	51.0	0.4
25	y	1.1	104	51.7	22.4	24	40.6	10.4	62.9	-16	0.1	1.2	y	0.8	55	17.8	60.4	19	51.4	0.3
26	y	1.1	105	14.1	22.3	24	43.2	13.2	63.0	-15	58.9	1.2	y	0.8	56	18.2	60.3	19	51.7	0.3
27	y	1.1	105	36.4	22.2	24	45.7	16.3	63.2	-15	57.7	1.3	y	0.8	57	18.4	60.2	19	52.0	0.2
28	y	1.1	105	58.5	22.1	24	48.1	19.5	63.4	-15	56.4	1.3	y	0.8	58	18.6	60.0	19	52.2	0.2
29	y	1.2	106	20.6	22.0	24	50.3	22.9	63.5	-15	55.1	1.3	y	0.9	59	18.6	59.9	19	52.4	0.3
30	y	1.2	106	42.6	21.9	24	52.3	26.4	63.7	-15	53.8	1.4	y	0.9	60	18.6	59.8	19	52.7	0.1
Mar 31	y	1.2	107	4.5	21.8	24	54.3	30.1	63.9	-15	52.4	1.4	y	0.9	61	18.4	59.7	19	52.8	0.2
Apr 1	y	1.2	107	26.3	21.7	24	56.1	34.0	64.0	-15	51.0	1.5	y	0.9	62	18.1	59.6	19	53.0	0.1
2	y	1.2	107	48.0	21.6	24	57.7	38.0	64.2	-15	49.5	1.5	y	0.9	63	17.7	59.5	19	53.1	0.1
3	y	1.2	108	9.7	21.6	24	59.2	42.1	64.3	-15	48.0	1.5	y	0.9	64	17.2	59.4	19	53.2	0.1
4	y	1.2	108	31.3	21.5	25	0.5	46.4	64.4	-15	46.5	1.6	y	0.9	65	16.6	59.3	19	53.3	0.0
5	y	1.2	108	52.8	21.4	25	1.7	50.9	64.6	-15	44.9	1.6	y	0.9	66	15.8	59.1	19	53.3	0.0
6	y	1.3	109	14.2	21.4	25	2.8	55.5	64.7	-15	43.3	1.7	y	0.9	67	14.9	59.0	19	53.3	0.0
7	y	1.3	109	35.5	21.3	25	3.7	0.2	64.8	-15	41.6	1.7	y	0.9	68	14.0	58.9	19	53.3	0.0
8	y	1.3	109	56.8	21.2	25	4.4	5.0	65.0	-15	39.9	1.7	y	0.9	69	12.9	58.8	19	53.3	-0.1
9	y	1.3	110	18.1	21.2	25	5.0	10.0	65.1	-15	38.2	1.7	y	0.9	70	11.7	58.7	19	53.2	-0.1
10	y	1.3	110	39.2	21.1	25	5.5	15.1	65.2	-15	36.5	1.8	y	0.9	71	10.4	58.6	19	53.1	-0.1
11	y	1.3	111	0.4	21.1	25	5.7	20.3	65.3	-15	34.7	1.9	y	0.9	72	9.0	58.5	19	53.0	-0.1
12	y	1.3	111	21.4	21.0	25	5.9	25.6	65.4	-15	32.8	1.8	y	0.9	73	7.4	58.4	19	52.9	-0.2
13	y	1.3	111	42.5	21.0	25	5.9	31.1	65.6	-15	31.0	1.9	y	0.9	74	5.8	58.2	19	52.7	-0.2
14	y	1.3	112	3.4	20.9	25	5.7	36.6	65.7	-15	29.1	1.9	y	0.9	75	4.0	58.1	19	52.5	-0.2
15	y	1.3	112	24.4	20.9	25	5.4	42.3	65.8	-15	27.2	1.9	y	0.9	76	2.1	58.0	19	52.3	-0.3
16	y	1.4	112	45.3	20.8	25	4.9	48.0	65.8	-15	25.3	2.0	y	1.0	77	0.2	57.9	19	52.0	-0.2
17	y	1.4	113	6.1	20.8	25	4.2	53.9	65.9	-15	23.3	2.0	y	1.0	77	58.1	57.8	19	51.8	-0.3
18	y	1.4	113	26.9	20.8	25	3.5	59.8	66.0	-15	21.3	2.0	y	1.0	78	55.9	57.7	19	51.5	-0.4
19	y	1.4	113	47.7	20.7	25	2.5	65.7	66.1	-15	19.3	2.0	y	1.0	79	53.6	57.6	19	51.1	-0.3
20	y	1.4	114	8.4	20.7	25	1.4	71.6	66.2	-15	17.3	2.1	y	1.0	80	51.1	57.5	19	50.8	-0.4
21	y	1.4	114	29.1	20.7	25	0.1	77.5	66.3	-15	15.2	2.1	y	1.0	81	48.6	57.4	19	50.4	-0.4
22	y	1.4	114	49.8	20.6	24	58.7	83.4	66.3	-15	13.1	2.1	y	1.0	82	46.0	57.3	19	50.0	-0.4
23	y	1.4	115	10.4	20.6	24	57.1	89.3	66.4	-15	11.0	2.1	y	1.0	83	43.2	57.1	19	49.6	-0.5
24	y	1.4	115	31.0	20.6	24	55.4	95.2	66.4	-15	8.9	2.1	y	1.0	84	40.4	57.0	19	49.1	-0.5
25	y	1.4	115	51.6	20.6	24	53.5	101.1	66.5	-15	6.8	2.2	y	1.0	85	37.4	56.9	19	48.6	-0.5
26	y	1.5	116	12.2	20.5	24	51.4	107.0	66.5	-15	4.6	2.1	y	1.0	86	34.3	56.8	19	48.1	-0.5
27	y	1.5	116	32.8	20.5	24	49.2	112.9	66.6	-15	2.5	2.2	y	1.0	87	31.2	56.7	19	47.6	-0.6
28	y	1.5	116	53.3	20.5	24	46.8	118.8	66.6	-15	0.3	2.2	y	1.0	88	27.9	56.6	19	47.0	-0.5
29	y	1.5	117	13.8	20.5	24	44.3	124.7	66.7	-14	58.1	2.1	y	1.0	89	24.5	56.5	19	46.5	-0.6
Apr 30	y	1.5	117	34.3	20.5	24	41.6	130.6	66.7	-14	56.0	2.2	y	1.0	90	21.0	56.4	19	45.9	-0.7
May 1	y	1.5	117	54.8	20.5	24	38.8	136.5	66.7	-14	53.8	2.2	y	1.0	91	17.4	56.3	19	45.2	-0.6
2	y	1.5	118	15.2	20.5	24	35.7	142.4	66.7	-14	51.6	2.2	y	1.0	92	13.7	56.2	19	44.6	-0.7
3	y	1.5	118	35.7	20.5	24	32.6	148.3	66.7	-14	49.4	2.2	y	1.0	93	9.9	56.1	19	43.9	-0.7
4	y	1.5	118	56.2	20.5	24	29.2	154.2	66.7	-14	47.2	2.2	y	1.0	94	6.0	56.0	19	43.2	-0.7
5	y	1.5	119	16.7	20.5	24	25.7	160.1	66.7	-14	45.0	2.2	y	1.0	95	2.0	55.9	19	42.5	-0.8
6	y	1.5	119	37.1	20.5	24	22.1	166.0	66.7	-14	42.8	2.2	y	1.0	95	58.0	55.8	19	41.7	-0.8
7	y	1.5	119	57.6	20.5	24	18.3	171.9	66.7	-14	40.6	2.2	y	1.0	96	53.8	55.7	19	40.9	-0.8
8	y	1.5	120	18.1	20.5	24	14.3	177.8	66.7	-14	38.4	2.2	y	1.0	97	49.5	55.6	19	40.1	-0.8
9	y	1.6	120	38.6	20.5	24	10.2	183.7	66.7	-14	36.2	2.2	y	1.0	98	45.1	55.5	19	39.3	-0.8
May 10	y	1.6	120	59.1	20.5	24	5.9	189.6	66.6	-14	34.0	2.2	y	1.0	99	40.6	55.4	19	38.5	-0.9

2006

Sun and Planets

Date	SUN					Mercury					Venus					
	GHA	d	Dec	d		GHA	d	dd	Dec	d	dd		GHA	d	Dec	d
	o	'	o	'	vis mag	o	'		o	'		vis mag	o	'	o	'
May 11	180 54.5	0.4	17 47.4	15.4	sr -1.3	189 39.8	-59.1	1.2	14 7.9	46.7	0.1	sr -4.1	220 5.2	-4.7	1 52.1	25.1
	180 54.9	0.3	18 2.8	15.0	sr -1.4	188 40.8	-61.4	1.2	14 54.6	46.4	0.1	sr -4.1	220 0.4	-4.8	2 17.2	25.1
12	180 55.2	0.1	18 17.8	14.8	-1.5	187 39.4	-63.7	1.2	15 41.0	45.8	0.3	sr -4.1	219 55.6	-4.9	2 42.3	25.2
13	180 55.3	0.0	18 32.6	14.4	-1.6	186 35.7	-66.0	1.1	16 26.8	45.1	0.3	sr -4.1	219 50.6	-5.1	3 7.5	25.1
14	180 55.3	-0.2	18 47.0	14.1	-1.8	185 29.7	-68.1	1.1	17 11.9	44.3	0.4	sr -4.1	219 45.6	-5.2	3 32.6	25.2
15	180 55.2	-0.3	19 1.1	13.8	-1.9	184 21.6	-70.2	1.0	17 56.2	43.1	0.6	sr -4.0	219 40.4	-5.3	3 57.8	25.2
16	180 54.9	-0.4	19 14.9	13.5	-2.1	183 11.4	-72.1	1.0	18 39.3	41.9	0.6	sr -4.0	219 35.1	-5.4	4 23.0	25.2
17	180 54.4	-0.6	19 28.4	13.1	-2.2	181 59.3	-73.8	0.9	19 21.2	40.4	0.8	sr -4.0	219 29.7	-5.5	4 48.2	25.2
18	180 53.8	-0.7	19 41.5	12.8	-2.4	180 45.5	-75.3	0.7	20 1.6	38.7	0.8	sr -4.0	219 24.2	-5.7	5 13.4	25.2
19	180 53.1	-0.9	19 54.3	12.5	-2.2	179 30.2	-76.5	0.6	20 40.3	36.8	1.0	sr -4.0	219 18.5	-5.8	5 38.6	25.1
20	180 52.2	-1.0	20 6.8	12.1	-2.1	178 13.7	-77.4	0.5	21 17.1	34.7	1.0	sr -4.0	219 12.7	-6.0	6 3.7	25.0
21	180 51.2	-1.1	20 18.9	11.8	-1.9	176 56.3	-78.0	0.3	21 51.8	32.5	1.1	sr -4.0	219 6.7	-6.1	6 28.7	25.0
22	180 50.1	-1.3	20 30.7	11.4	-1.8	175 38.3	-78.3	0.1	22 24.3	30.1	1.2	sr -4.0	219 0.6	-6.3	6 53.7	24.9
23	180 48.8	-1.4	20 42.1	11.1	-1.7	174 20.1	-78.2	0.0	22 54.4	27.5	1.3	sr -4.0	218 54.3	-6.5	7 18.6	24.8
24	180 47.4	-1.5	20 53.2	10.7	ss -1.6	173 1.9	-77.7	-0.2	23 21.9	25.0	1.3	sr -4.0	218 47.8	-6.6	7 43.4	24.7
25	180 45.9	-1.7	21 3.9	10.4	ss -1.5	171 44.2	-76.9	-0.4	23 46.9	22.3	1.3	sr -4.0	218 41.2	-6.8	8 8.1	24.7
26	180 44.2	-1.8	21 14.3	9.9	ss -1.4	170 27.3	-75.8	-0.6	24 9.2	19.6	1.4	sr -4.0	218 34.4	-7.0	8 32.8	24.4
27	180 42.4	-1.9	21 24.2	9.6	ss -1.3	169 11.5	-74.4	-0.7	24 28.8	16.9	1.3	sr -4.0	218 27.4	-7.2	8 57.2	24.4
28	180 40.5	-2.0	21 33.8	9.3	ss -1.2	167 57.1	-72.7	-0.9	24 45.7	14.2	1.4	sr -4.0	218 20.3	-7.4	9 21.6	24.2
29	180 38.5	-2.1	21 43.1	8.8	ss -1.1	166 44.4	-70.7	-1.0	24 59.9	11.6	1.3	sr -4.0	218 12.9	-7.6	9 45.8	24.1
30	180 36.4	-2.2	21 51.9	8.5	ss -1.0	165 33.7	-68.5	-1.1	25 11.5	9.0	1.3	sr -4.0	218 5.3	-7.8	10 9.9	23.8
Jun 1	180 34.2	-2.3	22 0.4	8.1	ss -0.9	164 25.3	-66.0	-1.2	25 20.5	6.4	1.3	sr -4.0	217 57.6	-8.0	10 33.7	23.7
2	180 31.9	-2.4	22 8.5	7.7	ss -0.8	163 19.2	-63.4	-1.3	25 26.9	4.0	1.2	sr -4.0	217 49.6	-8.2	10 57.4	23.6
3	180 29.5	-2.5	22 16.2	7.3	ss -0.7	162 15.8	-60.6	-1.4	25 30.9	1.7	1.2	sr -4.0	217 41.4	-8.4	11 21.0	23.3
4	180 27.0	-2.6	22 23.5	7.0	ss -0.6	161 15.2	-57.7	-1.5	25 32.6	-0.5	1.1	sr -4.0	217 33.0	-8.6	11 44.3	23.1
5	180 24.4	-2.6	22 30.5	6.5	ss -0.6	160 17.5	-54.7	-1.5	25 32.1	-2.6	1.0	sr -4.0	217 24.4	-8.9	12 7.4	22.8
6	180 21.8	-2.7	22 37.0	6.1	ss -0.5	159 22.8	-51.6	-1.6	25 29.5	-4.7	1.1	sr -4.0	217 15.5	-9.1	12 30.2	22.7
7	180 19.1	-2.8	22 43.1	5.7	ss -0.4	158 31.2	-48.3	-1.6	25 24.8	-6.5	0.9	sr -4.0	217 6.4	-9.4	12 52.9	22.3
8	180 16.3	-2.9	22 48.8	5.4	ss -0.3	157 42.9	-45.0	-1.6	25 18.3	-8.3	0.9	sr -4.0	216 57.0	-9.6	13 15.2	22.2
9	180 13.4	-2.9	22 54.2	4.9	ss -0.3	156 57.8	-41.7	-1.7	25 10.0	-9.9	0.8	sr -4.0	216 47.4	-9.9	13 37.4	21.8
10	180 10.5	-3.0	22 59.1	4.5	ss -0.2	156 16.2	-38.2	-1.7	25 0.1	-11.4	0.8	sr -4.0	216 37.5	-10.1	13 59.2	21.6
11	180 7.5	-3.0	23 3.6	4.1	ss -0.1	155 37.9	-34.8	-1.7	24 48.7	-12.8	0.7	sr -4.0	216 27.4	-10.4	14 20.8	21.3
12	180 4.5	-3.1	23 7.7	3.8	ss 0.0	155 3.2	-31.2	-1.8	24 35.9	-14.2	0.7	sr -4.0	216 17.0	-10.7	14 42.1	21.0
13	180 1.4	-3.1	23 11.5	3.3	ss 0.0	154 31.9	-27.7	-1.8	24 21.7	-15.3	0.5	sr -4.0	216 6.4	-10.9	15 3.1	20.6
14	179 58.3	-3.2	23 14.8	2.9	ss 0.1	154 4.3	-24.1	-1.8	24 6.4	-16.3	0.5	sr -4.0	215 55.5	-11.2	15 23.7	20.4
15	179 55.1	-3.2	23 17.7	2.5	ss 0.2	153 40.2	-20.4	-1.8	23 50.1	-17.3	0.5	sr -4.0	215 44.3	-11.5	15 44.1	20.0
16	179 51.9	-3.2	23 20.2	2.0	ss 0.2	153 19.8	-16.7	-1.9	23 32.8	-18.2	0.5	sr -3.9	215 32.8	-11.8	16 4.1	19.6
17	179 48.7	-3.2	23 22.2	1.7	ss 0.3	153 3.1	-12.9	-1.9	23 14.6	-18.9	0.3	sr -3.9	215 21.0	-12.0	16 23.7	19.3
18	179 45.5	-3.3	23 23.9	1.2	ss 0.4	152 50.2	-9.1	-1.9	22 55.7	-19.5	0.3	sr -3.9	215 9.0	-12.3	16 43.0	18.9
19	179 42.2	-3.3	23 25.1	0.9	ss 0.4	152 41.1	-5.2	-1.9	22 36.2	-20.1	0.3	sr -3.9	214 56.6	-12.6	17 1.9	18.6
20	179 38.9	-3.3	23 26.0	0.4	ss 0.5	152 35.9	-1.3	-2.0	22 16.1	-20.5	0.2	sr -3.9	214 44.0	-12.9	17 20.5	18.1
21	179 35.6	-3.3	23 26.4	0.0	ss 0.6	152 34.6	2.7	-2.0	21 55.6	-20.8	0.2	sr -3.9	214 31.1	-13.2	17 38.6	17.7
22	179 32.4	-3.3	23 26.4	-0.4	ss 0.7	152 37.3	6.8	-2.0	21 34.8	-21.0	0.1	sr -3.9	214 18.0	-13.5	17 56.3	17.3
23	179 29.1	-3.3	23 26.0	-0.8	ss 0.7	152 44.1	10.9	-2.1	21 13.8	-21.1	0.0	sr -3.9	214 4.5	-13.7	18 13.6	16.9
24	179 25.8	-3.2	23 25.2	-1.3	ss 0.8	152 55.0	15.1	-2.1	20 52.7	-21.2	0.0	sr -3.9	213 50.7	-14.0	18 30.5	16.4
25	179 22.6	-3.2	23 23.9	-1.6	ss 0.9	153 10.2	19.4	-2.1	20 31.5	-21.0	-0.1	sr -3.9	213 36.7	-14.3	18 46.9	16.0
26	179 19.4	-3.2	23 22.3	-2.1	ss 1.0	153 29.6	23.8	-2.2	20 10.5	-20.9	0.0	sr -3.9	213 22.4	-14.6	19 2.9	15.5
27	179 16.2	-3.1	23 20.2	-2.4	ss 1.1	153 53.4	28.3	-2.2	19 49.6	-20.5	-0.2	sr -3.9	213 7.8	-14.8	19 18.4	15.0
28	179 13.1	-3.1	23 17.8	-2.9	ss 1.2	154 21.7	32.8	-2.3	19 29.1	-20.2	-0.2	sr -3.9	212 53.0	-15.1	19 33.4	14.6
29	179 10.0	-3.0	23 14.9	-3.3	ss 1.3	154 54.5	37.4	-2.3	19 8.9	-19.6	-0.3	sr -3.9	212 37.9	-15.4	19 48.0	14.0
Jun 30	179 6.9	-3.0	23 11.6	-3.7	ss 1.4	155 31.9	42.1	-2.3	18 49.3	-19.0	-0.3	sr -3.9	212 22.5	-15.6	20 2.0	13.6
Jul 1	179 4.0	-2.9	23 7.9	-4.1	ss 1.5	156 14.0	46.8	-2.4	18 30.3	-18.3	-0.4	sr -3.9	212 6.9	-15.9	20 15.6	13.0
2	179 1.1	-2.8	23 3.8	-4.5	ss 1.6	157 0.8	51.6	-2.4	18 12.0	-17.4	-0.4	sr -3.9	211 51.0	-16.1	20 28.6	12.5
3	178 58.2	-2.8	22 59.3	-4.9	ss 1.7	157 52.4	56.4	-2.4	17 54.6	-16.5	-0.5	sr -3.9	211 34.8	-16.4	20 41.1	12.0
4	178 55.5	-2.7	22 54.4	-5.3	ss 1.8	158 48.8	61.2	-2.4	17 38.1	-15.4	-0.6	sr -3.9	211 18.4	-16.6	20 53.1	11.5
5	178 52.8	-2.6	22 49.1	-5.7	ss 1.9	159 49.9	65.9	-2.4	17 22.7	-14.3	-0.5	sr -3.9	211 1.8	-16.9	21 4.6	10.8
6	178 50.2	-2.5	22 43.4	-6.0	ss 2.0	160 55.8	70.6	-2.3	17 8.4	-13.1	-0.6	sr -3.9	210 44.9	-17.1	21 15.4	10.4
7	178 47.7	-2.4	22 37.4	-6.5	ss 2.1	162 6.4	75.1	-2.3	16 55.3	-11.8	-0.7	sr -3.9	210 27.8	-17.3	21 25.8	9.7
8	178 45.3	-2.3	22 30.9	-6.9	ss 2.2	163 21.5	79.5	-2.2	16 43.5	-10.3	-0.8	sr -3.9	210 10.5	-17.5	21 35.5	9.2
9	178 43.0	-2.2	22 24.0	-7.2	ss 2.3	164 40.9	83.6	-2.1	16 33.2	-8.9	-0.7	sr -3.9	209 53.0	-17.7	21 44.7	8.6
10	178 40.9	-2.1	22 16.8	-7.7	ss 2.4	166 4.5	87.4	-1.9	16 24.3	-7.4	-0.8	sr -3.9	209 35.3	-17.9	21 53.3	8.0
11	178 38.8	-2.0	22 9.1	-8.0	ss 2.5	167 31.9	90.9	-1.7	16 16.9	-5.8	-0.8	sr -3.9	209 17.3	-18.1	22 1.3	7.5
12	178 36.8	-1.9	22 1.1	-8.4	ss 2.6	169 2.9	94.0	-1.5	16 11.1	-						

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Sun and Planets

Date	Mars					Jupiter					Saturn													
	vis	GHA		d	Dec	vis	GHA		d	Dec	vis	GHA		d	Dec									
	mag	o		'	o	mag	o		'	o	mag	o		'	o									
May 11	y	1.6	121	19.6	20.5	24	1.5	-4.6	y	-2.5	7	30.0	66.6	-14	31.8	2.1	y	1.0	100	36.1	55.3	19	37.6	-0.9
12	y	1.6	121	40.2	20.6	23	56.9	-4.7	y	-2.5	8	36.6	66.6	-14	29.7	2.2	y	1.1	101	31.4	55.3	19	36.7	-0.9
13	y	1.6	122	0.7	20.6	23	52.2	-5.0	y	-2.5	9	43.2	66.5	-14	27.5	2.1	y	1.1	102	26.7	55.2	19	35.8	-1.0
14	y	1.6	122	21.3	20.6	23	47.2	-5.0	y	-2.5	10	49.7	66.5	-14	25.4	2.1	y	1.1	103	21.8	55.1	19	34.8	-0.9
15	y	1.6	122	41.9	20.6	23	42.2	-5.2	y	-2.5	11	56.2	66.4	-14	23.3	2.1	y	1.1	104	16.9	55.0	19	33.9	-1.0
16	y	1.6	123	2.5	20.6	23	37.0	-5.4	y	-2.5	13	2.6	66.4	-14	21.2	2.1	y	1.1	105	11.9	54.9	19	32.9	-1.0
17	y	1.6	123	23.2	20.7	23	31.6	-5.5	y	-2.5	14	8.9	66.3	-14	19.1	2.1	y	1.1	106	6.8	54.8	19	31.9	-1.0
18	y	1.6	123	43.8	20.7	23	26.1	-5.7	y	-2.5	15	15.2	66.2	-14	17.0	2.0	y	1.1	107	1.6	54.7	19	30.9	-1.1
19	y	1.6	124	4.5	20.7	23	20.4	-5.8	y	-2.5	16	21.4	66.2	-14	15.0	2.0	y	1.1	107	56.3	54.6	19	29.8	-1.1
20	y	1.6	124	25.2	20.7	23	14.6	-6.0	y	-2.5	17	27.6	66.1	-14	13.0	2.0	y	1.1	108	50.9	54.6	19	28.7	-1.1
21	y	1.6	124	45.9	20.8	23	8.6	-6.1	y	-2.5	18	33.7	66.0	-14	11.0	2.0	y	1.1	109	45.5	54.5	19	27.6	-1.1
22	y	1.6	125	6.7	20.8	23	2.5	-6.3	y	-2.5	19	39.7	65.9	-14	9.0	1.9	y	1.1	110	40.0	54.4	19	26.5	-1.1
23	y	1.6	125	27.5	20.8	22	56.2	-6.4	y	-2.5	20	45.6	65.8	-14	7.1	2.0	y	1.1	111	34.3	54.3	19	25.4	-1.2
24	y	1.7	125	48.3	20.8	22	49.8	-6.6	y	-2.5	21	51.4	65.7	-14	5.1	1.8	y	1.1	112	28.6	54.2	19	24.2	-1.2
25	y	1.7	126	9.2	20.9	22	43.2	-6.7	y	-2.5	22	57.2	65.6	-14	3.3	1.9	y	1.1	113	22.9	54.1	19	23.0	-1.2
26	y	1.7	126	30.0	20.9	22	36.5	-6.9	y	-2.5	24	2.8	65.5	-14	1.4	1.8	y	1.1	114	17.0	54.1	19	21.8	-1.2
27	y	1.7	126	50.9	20.9	22	29.6	-7.0	y	-2.5	25	8.3	65.4	-13	59.6	1.8	y	1.1	115	11.1	54.0	19	20.6	-1.2
28	y	1.7	127	11.9	21.0	22	22.6	-7.2	y	-2.5	26	13.7	65.3	-13	57.8	1.8	y	1.1	116	5.1	53.9	19	19.4	-1.3
29	y	1.7	127	32.9	21.0	22	15.4	-7.3	y	-2.5	27	19.1	65.2	-13	56.0	1.7	y	1.1	116	59.0	53.8	19	18.1	-1.3
30	y	1.7	127	53.9	21.1	22	8.1	-7.4	y	-2.4	28	24.3	65.1	-13	54.3	1.6	y	1.1	117	52.8	53.8	19	16.8	-1.3
May 31	y	1.7	128	14.9	21.1	22	0.7	-7.6	y	-2.4	29	29.3	65.0	-13	52.7	1.7	y	1.1	118	46.6	53.7	19	15.5	-1.3
Jun 1	y	1.7	128	36.0	21.1	21	53.1	-7.8	y	-2.4	30	34.3	64.8	-13	51.0	1.6	y	1.1	119	40.3	53.6	19	14.2	-1.4
2	y	1.7	128	57.2	21.2	21	45.3	-7.8	y	-2.4	31	39.1	64.7	-13	49.4	1.5	y	1.1	120	33.9	53.6	19	12.8	-1.3
3	y	1.7	129	18.4	21.2	21	37.5	-8.1	y	-2.4	32	43.9	64.6	-13	47.9	1.5	y	1.1	121	27.5	53.5	19	11.5	-1.4
4	y	1.7	129	39.6	21.3	21	29.4	-8.1	y	-2.4	33	48.4	64.4	-13	46.4	1.5	y	1.1	122	21.0	53.4	19	10.1	-1.4
5	y	1.7	130	0.9	21.3	21	21.3	-8.3	y	-2.4	34	52.9	64.3	-13	44.9	1.4	y	1.1	123	14.4	53.4	19	8.7	-1.4
6	y	1.7	130	22.2	21.4	21	13.0	-8.5	y	-2.4	35	57.2	64.2	-13	43.5	1.4	y	1.1	124	7.8	53.3	19	7.3	-1.5
7	y	1.7	130	43.6	21.4	21	4.5	-8.5	y	-2.4	37	1.4	64.0	-13	42.1	1.3	y	1.1	125	1.1	53.2	19	5.8	-1.4
8	y	1.7	131	5.0	21.5	20	56.0	-8.7	y	-2.4	38	5.4	63.9	-13	40.8	1.3	y	1.1	125	54.3	53.2	19	4.4	-1.5
9	y	1.7	131	26.4	21.5	20	47.3	-8.9	y	-2.4	39	9.3	63.7	-13	39.5	1.2	y	1.1	126	47.5	53.1	19	2.9	-1.5
10	y	1.7	131	47.9	21.6	20	38.4	-9.0	y	-2.4	40	13.0	63.6	-13	38.3	1.2	y	1.1	127	40.6	53.0	19	1.4	-1.5
11	y	1.7	132	9.5	21.6	20	29.4	-9.1	y	-2.4	41	16.6	63.4	-13	37.1	1.1	y	1.1	128	33.6	53.0	18	59.9	-1.6
12	y	1.7	132	31.1	21.7	20	20.3	-9.2	y	-2.4	42	20.0	63.3	-13	36.0	1.1	y	1.1	129	26.6	52.9	18	58.3	-1.5
13	y	1.7	132	52.8	21.7	20	11.1	-9.4	y	-2.4	43	23.3	63.1	-13	34.9	1.1	y	1.1	130	19.5	52.9	18	56.8	-1.6
14	y	1.7	133	14.5	21.8	20	1.7	-9.5	y	-2.4	44	26.4	63.0	-13	33.8	0.9	y	1.1	131	12.4	52.8	18	55.2	-1.6
15	y	1.8	133	36.2	21.8	19	52.2	-9.6	y	-2.4	45	29.3	62.8	-13	32.9	1.0	y	1.1	132	5.2	52.8	18	53.6	-1.6
16	y	1.8	133	58.1	21.9	19	42.6	-9.8	y	-2.4	46	32.1	62.6	-13	31.9	0.8	y	1.1	132	58.0	52.7	18	52.0	-1.6
17	y	1.8	134	19.9	21.9	19	32.8	-9.8	y	-2.4	47	34.8	62.5	-13	31.1	0.9	y	1.1	133	50.7	52.7	18	50.4	-1.6
18	y	1.8	134	41.8	22.0	19	23.0	-10.0	y	-2.4	48	37.3	62.3	-13	30.2	0.7	y	1.1	134	43.3	52.6	18	48.8	-1.7
19	y	1.8	135	3.8	22.0	19	13.0	-10.2	y	-2.3	49	39.6	62.2	-13	29.5	0.7	y	1.1	135	36.0	52.6	18	47.1	-1.7
20	y	1.8	135	25.8	22.1	19	2.8	-10.2	y	-2.3	50	41.7	62.0	-13	28.8	0.7	y	1.1	136	28.5	52.5	18	45.4	-1.6
21	y	1.8	135	47.8	22.1	18	52.6	-10.4	y	-2.3	51	43.7	61.8	-13	28.1	0.6	y	1.1	137	21.0	52.5	18	43.8	-1.8
22	y	1.8	136	10.0	22.2	18	42.2	-10.5	y	-2.3	52	45.5	61.6	-13	27.5	0.5	y	1.1	138	13.5	52.4	18	42.0	-1.7
23	y	1.8	136	32.1	22.2	18	31.7	-10.6	y	-2.3	53	47.2	61.5	-13	27.0	0.5	y	1.1	139	5.9	52.4	18	40.3	-1.7
24	y	1.8	136	54.3	22.2	18	21.1	-10.7	y	-2.3	54	48.7	61.3	-13	26.5	0.5	y	1.1	139	58.2	52.3	18	38.6	-1.8
25	y	1.8	137	16.5	22.3	18	10.4	-10.9	y	-2.3	55	50.0	61.1	-13	26.0	0.3	y	1.1	140	50.5	52.3	18	36.8	-1.7
26	y	1.8	137	38.8	22.3	17	59.5	-10.9	y	-2.3	56	51.1	61.0	-13	25.7	0.3	y	1.1	141	42.8	52.2	18	35.1	-1.8
27	y	1.8	138	1.2	22.4	17	48.6	-11.1	y	-2.3	57	52.0	60.8	-13	25.4	0.3	y	1.1	142	35.0	52.2	18	33.3	-1.8
28	y	1.8	138	23.6	22.4	17	37.5	-11.2	y	-2.3	58	52.8	60.6	-13	25.1	0.2	y	1.1	143	27.2	52.1	18	31.5	-1.8
29	y	1.8	138	46.0	22.5	17	26.3	-11.3	y	-2.3	59	53.4	60.4	-13	24.9	0.1	y	1.1	144	19.3	52.1	18	29.7	-1.8
Jun 30	y	1.8	139	8.5	22.5	17	15.0	-11.4	y	-2.3	60	53.9	60.3	-13	24.8	0.1	y	1.1	145	11.5	52.1	18	27.9	-1.9
Jul 1	y	1.8	139	31.1	22.6	17	3.6	-11.5	y	-2.3	61	54.1	60.1	-13	24.7	0.0	y	1.1	146	3.5	52.0	18	26.0	-1.8
2	y	1.8	139	53.7	22.7	16	52.1	-11.6	y	-2.3	62	54.2	59.9	-13	24.7	0.0	y	1.1	146	55.6	52.0	18	24.2	-1.9
3	y	1.8	140	16.3	22.7	16	40.5	-11.8	y	-2.3	63	54.1	59.7	-13	24.7	-0.1	y	1.1	147	47.5	52.0	18	22.3	-1.9
4	y	1.8	140	39.0	22.7	16	28.7	-11.8	y	-2.3	64	53.8	59.5	-13	24.8	-0.1	y	1.1	148	39.5	51.9	18	20.4	-1.9
5	y	1.8	141	1.8	22.8	16	16.9	-12.0	y	-2.2	65	53.4	59.4	-13	24.9	-0.2	y	1.1	149	31.4	51.9	18	18.5	-1.9
6	y	1.8	141	24.6	22.8	16	4.9	-12.0	y	-2.2	66	52.7	59.2	-13	25.1	-0.3	y	1.1	150	23.3	51.9	18	16.6	-1.9
7	y	1.8	141	47.4	22.9	15	52.9	-12.2	y	-2.2	67	51.9	59.0	-13	25.4	-0.3	y	1.1	151	15.2	51.8	18	14.7	-1.9
8	y	1.8	142	10.3	22.9	15	40.7	-12.2	y	-2.2	68	50.9	58.8	-13	25.7	-0.4	y	1.1	152	7.0	51.8	18	12.8	-2.0
9	y	1.8	142	33.3	23.0	15	28.5	-12.3	y	-2.2	69	49.8	58.7	-13	26.1	-0.4	y	1.1	152	58.8	51.8	18	10.8	-1.9
10	y	1.8	142	56.3</																				

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Sun and Planets

Date	SUN					Mercury						Venus												
	GHA		d	Dec		vis	GHA		d	dd	Dec	d	dd	vis	GHA		d	Dec	d					
	o	'	'	o	'		o	'	'	o		'	'		o	'	'		o	'	'			
Jul 15	178	31.6	-1.5	21	34.8	-9.5	2.9	173	52.0	100.0	-0.7	16	3.4	0.6	-0.8	sr	-3.9	208	3.8	-18.8	22	27.4	4.9	
Jul 16	178	30.1	-1.4	21	25.3	-9.9	3.0	175	32.0	100.8	-0.4	16	4.0	2.2	-0.8	sr	-3.9	207	45.1	-18.9	22	32.3	4.4	
Jul 17	178	28.7	-1.3	21	15.4	-10.2	3.1	177	12.8	100.9	-0.1	16	6.2	3.6	-0.7	sr	-3.9	207	26.2	-19.0	22	36.7	3.7	
Jul 18	178	27.4	-1.1	21	5.2	-10.6	3.2	178	53.7	100.3	0.3	16	9.8	5.1	-0.8	sr	-3.9	207	7.1	-19.1	22	40.4	3.0	
Jul 19	178	26.3	-1.0	20	54.6	-10.9	3.3	180	34.0	99.0	0.7	16	14.9	6.5	-0.7	sr	-3.9	206	48.0	-19.3	22	43.4	2.5	
Jul 20	178	25.3	-0.9	20	43.7	-11.3	3.4	182	13.1	97.0	1.0	16	21.4	7.7	-0.6	sr	-3.9	206	28.7	-19.3	22	45.9	1.8	
Jul 21	178	24.4	-0.7	20	32.4	-11.7	3.5	183	50.0	94.3	1.3	16	29.1	8.8	-0.5	sr	-3.9	206	9.4	-19.4	22	47.7	1.1	
Jul 22	178	23.7	-0.6	20	20.7	-11.9	3.3	185	24.4	91.0	1.7	16	37.9	9.8	-0.5	sr	-3.9	205	50.0	-19.5	22	48.8	0.5	
Jul 23	178	23.1	-0.4	20	8.8	-12.4	sr	3.1	186	55.3	87.0	2.0	16	47.7	10.7	-0.4	sr	-3.9	205	30.5	-19.5	22	49.3	-0.2
Jul 24	178	22.7	-0.3	19	56.4	-12.6	sr	2.9	188	22.4	82.6	2.2	16	58.4	11.4	-0.4	sr	-3.9	205	11.0	-19.6	22	49.1	-0.8
Jul 25	178	22.4	-0.1	19	43.8	-13.0	sr	2.7	189	45.0	77.6	2.5	17	9.8	12.0	-0.3	sr	-3.9	204	51.4	-19.6	22	48.3	-1.5
Jul 26	178	22.2	0.0	19	30.8	-13.3	sr	2.5	191	2.6	72.2	2.7	17	21.8	12.5	-0.3	sr	-3.9	204	31.8	-19.6	22	46.8	-2.1
Jul 27	178	22.2	0.2	19	17.5	-13.6	sr	2.3	192	14.8	66.4	2.9	17	34.3	12.7	-0.1	sr	-3.9	204	12.2	-19.6	22	44.7	-2.8
Jul 28	178	22.4	0.3	19	3.9	-14.0	sr	2.1	193	21.2	60.4	3.0	17	47.0	12.8	0.0	sr	-3.9	203	52.6	-19.6	22	41.9	-3.4
Jul 29	178	22.7	0.5	18	49.9	-14.2	sr	1.9	194	21.6	54.1	3.2	17	59.8	12.9	0.0	sr	-3.9	203	33.1	-19.5	22	38.5	-4.1
Jul 30	178	23.1	0.6	18	35.7	-14.6	sr	1.7	195	15.6	47.6	3.2	18	12.7	12.6	0.2	sr	-3.9	203	13.5	-19.5	22	34.4	-4.8
Jul 31	178	23.8	0.8	18	21.1	-14.8	sr	1.5	196	3.2	40.9	3.3	18	25.3	12.2	0.2	sr	-3.9	202	54.1	-19.4	22	29.6	-5.4
Aug 1	178	24.5	0.9	18	6.3	-15.2	sr	1.3	196	44.1	34.2	3.4	18	37.5	11.7	0.3	sr	-3.9	202	34.6	-19.4	22	24.2	-6.0
Aug 2	178	25.5	1.1	17	51.1	-15.4	sr	1.1	197	18.4	27.5	3.4	18	49.2	11.0	0.4	sr	-3.9	202	15.3	-19.3	22	18.2	-6.7
Aug 3	178	26.5	1.2	17	35.7	-15.7	sr	0.9	197	45.8	20.7	3.4	19	0.2	10.1	0.5	sr	-3.9	201	56.0	-19.2	22	11.5	-7.4
Aug 4	178	27.8	1.4	17	20.0	-16.0	sr	0.7	198	6.5	14.0	3.4	19	10.3	9.1	0.5	sr	-3.9	201	36.8	-19.1	22	4.1	-8.0
Aug 5	178	29.2	1.5	17	4.0	-16.3	sr	0.5	198	20.5	7.3	3.3	19	19.4	7.7	0.7	sr	-3.9	201	17.7	-19.0	21	56.1	-8.6
Aug 6	178	30.7	1.7	16	47.7	-16.5	sr	0.3	198	27.8	0.8	3.3	19	27.1	6.4	0.6	sr	-3.9	200	58.7	-18.9	21	47.5	-9.2
Aug 7	178	32.4	1.9	16	31.2	-16.8	sr	0.1	198	28.6	-5.6	3.2	19	33.5	4.7	0.8	sr	-3.9	200	39.8	-18.7	21	38.3	-9.9
Aug 8	178	34.3	2.0	16	14.4	-17.1	sr	0.0	198	23.0	-11.8	3.1	19	38.2	2.9	0.9	sr	-3.9	200	21.1	-18.6	21	28.4	-10.5
Aug 9	178	36.3	2.1	15	57.3	-17.3	sr	-0.2	198	11.2	-17.8	3.0	19	41.1	1.0	0.9	sr	-3.9	200	2.5	-18.4	21	17.9	-11.1
Aug 10	178	38.4	2.3	15	40.0	-17.6	sr	-0.3	197	53.4	-23.5	2.9	19	42.1	-1.2	1.1	sr	-3.9	199	44.1	-18.3	21	6.8	-11.7
Aug 11	178	40.7	2.4	15	22.4	-17.8	sr	-0.4	197	30.0	-28.9	2.7	19	40.9	-3.4	1.1	sr	-3.9	199	25.8	-18.1	20	55.1	-12.4
Aug 12	178	43.1	2.6	15	4.6	-18.1	sr	-0.5	197	1.1	-33.9	2.5	19	37.5	-5.9	1.3	sr	-3.9	199	7.7	-17.9	20	42.7	-12.9
Aug 13	178	45.7	2.7	14	46.5	-18.3	sr	-0.7	196	27.2	-38.6	2.3	19	31.6	-8.5	1.3	sr	-3.9	198	49.8	-17.7	20	29.8	-13.5
Aug 14	178	48.4	2.8	14	28.2	-18.5	sr	-0.8	195	48.6	-42.8	2.1	19	23.1	-11.1	1.3	sr	-3.9	198	32.1	-17.6	20	16.3	-14.2
Aug 15	178	51.2	3.0	14	9.7	-18.7	sr	-0.9	195	5.8	-46.6	1.9	19	12.0	-13.8	1.3	sr	-3.9	198	14.5	-17.4	20	2.1	-14.6
Aug 16	178	54.2	3.1	13	51.0	-19.0	sr	-0.9	194	19.2	-49.9	1.6	18	58.2	-16.5	1.4	sr	-3.9	197	57.1	-17.2	19	47.5	-15.3
Aug 17	178	57.3	3.2	13	32.0	-19.2	sr	-1.0	193	29.4	-52.6	1.4	18	41.7	-19.3	1.4	sr	-3.9	197	40.0	-17.0	19	32.2	-15.8
Aug 18	179	0.5	3.3	13	12.8	-19.4	sr	-1.1	192	36.7	-54.9	1.1	18	22.4	-21.9	1.3	sr	-3.9	197	23.0	-16.7	19	16.4	-16.4
Aug 19	179	3.8	3.5	12	53.4	-19.6	sr	-1.2	191	41.8	-56.7	0.9	18	0.5	-24.6	1.3	sr	-3.9	197	6.3	-16.5	19	0.0	-16.9
Aug 20	179	7.3	3.6	12	33.8	-19.8	sr	-1.2	190	45.2	-57.9	0.6	17	35.9	-27.2	1.3	sr	-3.9	196	49.8	-16.3	18	43.1	-17.5
Aug 21	179	10.9	3.7	12	14.0	-20.0	sr	-1.3	189	47.2	-58.8	0.4	17	8.7	-29.6	1.2	sr	-3.9	196	33.5	-16.1	18	25.6	-18.0
Aug 22	179	14.6	3.8	11	54.0	-20.2	sr	-1.4	188	48.5	-59.1	0.2	16	39.1	-31.9	1.1	sr	-3.9	196	17.4	-15.8	18	7.6	-18.5
Aug 23	179	18.4	3.9	11	33.8	-20.4	sr	-1.4	187	49.3	-59.1	0.0	16	7.2	-34.0	1.0	sr	-3.9	196	1.6	-15.6	17	49.1	-19.0
Aug 24	179	22.3	4.0	11	13.4	-20.6	sr	-1.5	186	50.2	-58.8	-0.2	15	33.2	-35.9	1.0	sr	-3.9	195	45.9	-15.4	17	30.1	-19.5
Aug 25	179	26.3	4.1	10	52.8	-20.7	sr	-1.5	185	51.4	-58.2	-0.3	14	57.3	-37.8	0.9	sr	-3.9	195	30.6	-15.1	17	10.6	-20.0
Aug 26	179	30.4	4.2	10	32.1	-20.9	sr	-1.6	184	53.2	-57.3	-0.4	14	19.5	-39.3	0.8	sr	-3.9	195	15.4	-14.9	16	50.6	-20.4
Aug 27	179	34.6	4.3	10	11.2	-21.0	sr	-1.6	183	56.0	-56.2	-0.5	13	40.2	-40.8	0.8	sr	-3.9	195	0.6	-14.7	16	30.2	-21.0
Aug 28	179	39.0	4.4	9	50.2	-21.2	sr	-1.7	182	59.8	-54.9	-0.6	12	59.4	-42.1	0.6	sr	-3.9	194	45.9	-14.4	16	9.2	-21.4
Aug 29	179	43.4	4.5	9	29.0	-21.4	sr	-1.7	182	4.9	-53.5	-0.7	12	17.3	-43.2	0.5	sr	-3.9	194	31.5	-14.2	15	47.8	-21.8
Aug 30	179	47.9	4.6	9	7.6	-21.5	sr	-1.8	181	11.4	-52.1	-0.7	11	34.1	-44.1	0.5	sr	-3.9	194	17.3	-13.9	15	26.0	-22.2
Aug 31	179	52.5	4.7	8	46.1	-21.6	sr	-1.8	180	19.3	-50.5	-0.8	10	50.0	-44.9	0.4	sr	-3.9	194	3.4	-13.7	15	3.8	-22.7
Sep 1	179	57.2	4.8	8	24.5	-21.8	sr	-1.8	179	28.8	-49.0	-0.8	10	5.1	-45.6	0.4	sr	-3.9	193	49.6	-13.5	14	41.1	-23.1
Sep 2	180	1.9	4.8	8	2.7	-21.9	sr	-1.7	178	39.8	-47.4	-0.8	9	19.5	-46.1	0.3	sr	-3.9	193	36.2	-13.3	14	18.0	-23.5
Sep 3	180	6.8	4.9	7	40.8	-22.0	sr	-1.7	177	52.4	-45.8	-0.8	8	33.4	-46.5	0.2	sr	-3.9	193	22.9	-13.0	13	54.5	-23.9
Sep 4	180	11.7	5.0	7	18.8	-22.2	sr	-1.6	177	6.6	-44.3	-0.8	7	46.9	-46.9	0.2	sr	-3.9	193	9.9	-12.8	13	30.6	-24.3
Sep 5	180	16.7	5.0	6	56.6	-22.2	sr	-1.5	176	22.3	-42.7	-0.8	7	0.0	-47.2	0.1	sr	-3.9	192	57.1	-12.6	13	6.3	-24.6
Sep 6	180	21.7	5.1	6	34.4	-22.4	sr	-1.4	175	39.6	-41.3	-0.7	6	12.8	-47.2	0.0	sr	-3.9	192	44.5	-12.4	12	41.7	-24.9
Sep 7	180	26.8	5.1	6	12.0	-22.4	sr	-1.3	174	58.3	-39.8	-0.7	5	25.6	-47.4	0.1	sr	-3.9	192	32.1	-12.2	12	16.8	-25.4
Sep 8	180	31.9	5.2	5	49.6	-22.6	sr	-1.2	174	18.5	-38.4	-0.7	4	38.2	-47.3	-0.1	sr	-3.9	192	20.0	-12.0	11	51.4	-25.6
Sep 9	180	37.1	5.2	5	27.0	-22.6	sr	-1.1	173	40.0	-37.1	-0.7	3	50.9	-47.3	0.0	sr	-3.9	192	8.0	-11.8	11	25.8	-26.0
Sep 10	180	42.4	5.3	5	4.4	-22.8	ss	-1.0	173	2.9	-35.8	-0.6	3	3.6	-47.2	-0.1	sr	-3.9	191	56.2	-11			

2006

Sun and Planets

Date	Mars					Jupiter					Saturn				
	vis	GHA	d	Dec	d'	vis	GHA	d	Dec	d'	vis	GHA	d	Dec	d'
Jul 15	y	1.8 144 51.9	23.3	14 13.0	-12.9	y	-2.2 75 39.1	57.6	-13 29.6	-0.7	y	1.0 158 9.1	51.6	17 58.9	-2.0
Jul 16	y	1.8 145 15.1	23.3	14 0.1	-13.0	y	-2.2 76 36.8	57.5	-13 30.3	-0.9	y	1.0 159 0.7	51.6	17 56.9	-2.0
Jul 17	y	1.8 145 38.4	23.3	13 47.1	-13.1	y	-2.2 77 34.2	57.3	-13 31.2	-0.8	y	1.0 159 52.3	51.6	17 54.9	-2.1
Jul 18	y	1.8 146 1.8	23.4	13 34.0	-13.2	y	-2.2 78 31.5	57.1	-13 32.0	-1.0	y	1.0 160 43.9	51.6	17 52.8	-2.0
Jul 19	y	1.8 146 25.2	23.4	13 20.8	-13.2	y	-2.2 79 28.6	56.9	-13 33.0	-1.0	y	1.0 161 35.5	51.5	17 50.8	-2.1
Jul 20	y	1.8 146 48.6	23.4	13 7.6	-13.4	y	-2.1 80 25.6	56.8	-13 34.0	-1.0	y	1.0 162 27.0	51.5	17 48.7	-2.1
Jul 21	y	1.8 147 12.0	23.5	12 54.2	-13.4	y	-2.1 81 22.3	56.6	-13 35.0	-1.1	y	1.0 163 18.5	51.5	17 46.6	-2.0
Jul 22	y	1.8 147 35.5	23.5	12 40.8	-13.5	y	-2.1 82 18.9	56.4	-13 36.1	-1.2	y	1.0 164 10.0	51.5	17 44.6	-2.1
Jul 23	y	1.8 147 59.0	23.5	12 27.3	-13.6	y	-2.1 83 15.4	56.3	-13 37.3	-1.2	y	1.0 165 1.5	51.5	17 42.5	-2.1
Jul 24	y	1.8 148 22.5	23.6	12 13.7	-13.7	y	-2.1 84 11.6	56.1	-13 38.5	-1.2	y	1.0 165 53.0	51.5	17 40.4	-2.1
Jul 25	y	1.8 148 46.1	23.6	12 0.0	-13.7	y	-2.1 85 7.7	55.9	-13 39.7	-1.3	y	1.0 166 44.5	51.5	17 38.3	-2.1
Jul 26	y	1.8 149 9.7	23.6	11 46.3	-13.9	y	-2.1 86 3.7	55.8	-13 41.0	-1.4	y	1.0 167 36.0	51.4	17 36.2	-2.2
Jul 27	y	1.8 149 33.4	23.7	11 32.4	-13.9	y	-2.1 86 59.4	55.6	-13 42.4	-1.4	y	1.0 168 27.4	51.4	17 34.0	-2.1
Jul 28	y	1.8 149 57.1	23.7	11 18.5	-14.0	y	-2.1 87 55.0	55.4	-13 43.8	-1.5	y	1.0 169 18.8	51.4	17 31.9	-2.1
Jul 29	y	1.8 150 20.8	23.7	11 4.5	-14.0	y	-2.1 88 50.5	55.3	-13 45.3	-1.5	y	1.0 170 10.3	51.4	17 29.8	-2.2
Jul 30	y	1.8 150 44.5	23.8	10 50.5	-14.1	y	-2.1 89 45.7	55.1	-13 46.8	-1.5	y	1.0 171 1.7	51.4	17 27.6	-2.1
Jul 31	y	1.8 151 8.3	23.8	10 36.4	-14.2	y	-2.1 90 40.9	55.0	-13 48.3	-1.6	y	1.0 171 53.1	51.4	17 25.5	-2.2
Aug 1	y	1.8 151 32.1	23.8	10 22.2	-14.3	y	-2.1 91 35.8	54.8	-13 49.9	-1.7	y	1.0 172 44.5	51.4	17 23.3	-2.1
Aug 2	y	1.8 151 55.9	23.8	10 7.9	-14.3	y	-2.1 92 30.6	54.6	-13 51.6	-1.7	y	1.0 173 35.9	51.4	17 21.2	-2.2
Aug 3	y	1.8 152 19.7	23.9	9 53.6	-14.4	y	-2.1 93 25.3	54.5	-13 53.3	-1.7	y	1.0 174 27.4	51.4	17 19.0	-2.1
Aug 4	y	1.8 152 43.6	23.9	9 39.2	-14.5	y	-2.1 94 19.8	54.3	-13 55.0	-1.8	y	1.0 175 18.8	51.4	17 16.9	-2.2
Aug 5	y	1.8 153 7.5	23.9	9 24.7	-14.5	y	-2.0 95 14.1	54.2	-13 56.8	-1.9	y	1.0 176 10.2	51.4	17 14.7	-2.2
Aug 6	y	1.8 153 31.4	23.9	9 10.2	-14.6	y	-2.0 96 8.3	54.0	-13 58.7	-1.9	y	1.0 177 1.6	51.4	17 12.5	-2.2
Aug 7	y	1.8 153 55.3	24.0	8 55.6	-14.6	y	-2.0 97 2.3	53.9	-14 0.6	-1.9	y	1.0 177 53.0	51.4	17 10.3	-2.2
Aug 8	y	1.8 154 19.3	24.0	8 41.0	-14.7	y	-2.0 97 56.2	53.7	-14 2.5	-2.0	y	1.0 178 44.4	51.4	17 8.1	-2.1
Aug 9	y	1.8 154 43.3	24.0	8 26.3	-14.8	y	-2.0 98 49.9	53.6	-14 4.5	-2.0	y	1.0 179 35.8	51.4	17 6.0	-2.2
Aug 10	y	1.8 155 7.2	24.0	8 11.5	-14.8	y	-2.0 99 43.5	53.4	-14 6.5	-2.0	y	1.0 180 27.2	51.4	17 3.8	-2.2
Aug 11	y	1.8 155 31.3	24.0	7 56.7	-14.8	y	-2.0 100 37.0	53.3	-14 8.5	-2.1	y	1.0 181 18.6	51.4	17 1.6	-2.2
Aug 12	y	1.8 155 55.3	24.0	7 41.9	-14.9	y	-2.0 101 30.2	53.2	-14 10.6	-2.1	y	1.0 182 10.1	51.4	16 59.4	-2.2
Aug 13	y	1.8 156 19.3	24.0	7 27.0	-15.0	y	-2.0 102 23.4	53.0	-14 12.7	-2.2	y	1.0 183 1.5	51.4	16 57.2	-2.2
Aug 14	y	1.8 156 43.4	24.1	7 12.0	-15.0	y	-2.0 103 16.4	52.9	-14 14.9	-2.2	y	1.0 183 53.0	51.5	16 55.0	-2.2
Aug 15	y	1.8 157 7.4	24.1	6 57.0	-15.1	y	-2.0 104 9.3	52.7	-14 17.1	-2.3	y	1.0 184 44.4	51.5	16 52.8	-2.2
Aug 16	y	1.8 157 31.5	24.1	6 41.9	-15.1	y	-2.0 105 2.0	52.6	-14 19.4	-2.3	y	1.0 185 35.9	51.5	16 50.6	-2.2
Aug 17	y	1.8 157 55.5	24.1	6 26.8	-15.2	y	-2.0 105 54.6	52.5	-14 21.7	-2.3	y	1.0 186 27.3	51.5	16 48.4	-2.2
Aug 18	y	1.8 158 19.6	24.1	6 11.6	-15.2	y	-2.0 106 47.1	52.3	-14 24.0	-2.4	y	1.0 187 18.8	51.5	16 46.2	-2.2
Aug 19	y	1.8 158 43.7	24.1	5 56.4	-15.3	y	-2.0 107 39.4	52.2	-14 26.4	-2.4	y	1.0 188 10.3	51.5	16 44.0	-2.2
Aug 20	y	1.8 159 7.7	24.1	5 41.1	-15.3	y	-2.0 108 31.6	52.0	-14 28.8	-2.4	y	1.0 189 1.8	51.5	16 41.8	-2.2
Aug 21	y	1.8 159 31.8	24.1	5 25.8	-15.3	y	-2.0 109 23.6	51.9	-14 31.2	-2.5	y	1.0 189 53.4	51.5	16 39.6	-2.2
Aug 22	y	1.8 159 55.8	24.1	5 10.5	-15.4	y	-1.9 110 15.5	51.8	-14 33.7	-2.5	y	1.0 190 44.9	51.6	16 37.4	-2.3
Aug 23	y	1.8 160 19.9	24.1	4 55.1	-15.4	y	-1.9 111 7.3	51.7	-14 36.2	-2.5	y	1.0 191 36.5	51.6	16 35.1	-2.1
Aug 24	y	1.8 160 44.0	24.1	4 39.7	-15.5	y	-1.9 111 59.0	51.5	-14 38.7	-2.6	y	1.0 192 28.0	51.6	16 33.0	-2.2
Aug 25	y	1.8 161 8.0	24.0	4 24.2	-15.5	y	-1.9 112 50.5	51.4	-14 41.3	-2.6	y	1.0 193 19.7	51.6	16 30.8	-2.2
Aug 26	y	1.8 161 32.1	24.0	4 8.7	-15.5	y	-1.9 113 41.9	51.3	-14 43.9	-2.7	y	1.0 194 11.3	51.6	16 28.6	-2.2
Aug 27	y	1.8 161 56.1	24.0	3 53.2	-15.6	y	-1.9 114 33.1	51.1	-14 46.6	-2.6	y	1.0 195 2.9	51.7	16 26.4	-2.2
Aug 28	y	1.8 162 20.1	24.0	3 37.6	-15.6	y	-1.9 115 24.3	51.0	-14 49.2	-2.7	y	1.0 195 54.6	51.7	16 24.2	-2.2
Aug 29	y	1.8 162 44.1	24.0	3 22.0	-15.6	y	-1.9 116 15.3	50.9	-14 51.9	-2.7	y	1.0 196 46.3	51.7	16 22.0	-2.2
Aug 30	y	1.8 163 8.2	24.0	3 6.4	-15.6	y	-1.9 117 6.2	50.8	-14 54.6	-2.8	y	1.0 197 38.0	51.7	16 19.8	-2.2
Aug 31	y	1.8 163 32.1	24.0	2 50.8	-15.7	y	-1.9 117 57.0	50.7	-14 57.4	-2.8	y	1.0 198 29.7	51.8	16 17.6	-2.1
Sep 1	y	1.8 163 56.1	24.0	2 35.1	-15.7	y	-1.9 118 47.7	50.5	-15 0.2	-2.8	y	1.0 199 21.5	51.8	16 15.5	-2.2
Sep 2	y	1.8 164 20.1	23.9	2 19.4	-15.7	y	-1.9 119 38.2	50.4	-15 3.0	-2.8	y	1.1 200 13.3	51.8	16 13.3	-2.2
Sep 3	y	1.8 164 44.0	23.9	2 3.7	-15.8	y	-1.9 120 28.6	50.3	-15 5.8	-2.9	y	1.1 201 5.1	51.9	16 11.1	-2.1
Sep 4	y	1.8 165 7.9	23.9	1 47.9	-15.7	y	-1.9 121 18.9	50.2	-15 8.7	-2.9	y	1.1 201 57.0	51.9	16 9.0	-2.2
Sep 5	y	1.8 165 31.9	23.9	1 32.2	-15.8	y	-1.9 122 9.1	50.1	-15 11.6	-2.9	y	1.1 202 48.9	51.9	16 6.8	-2.1
Sep 6	y	1.8 165 55.7	23.9	1 16.4	-15.8	y	-1.9 122 59.2	50.0	-15 14.5	-2.9	y	1.1 203 40.8	52.0	16 4.7	-2.1
Sep 7	y	1.8 166 19.6	23.8	1 0.6	-15.8	y	-1.9 123 49.2	49.9	-15 17.4	-3.0	y	1.1 204 32.8	52.0	16 2.6	-2.2
Sep 8	y	1.8 166 43.4	23.8	0 44.8	-15.8	y	-1.9 124 39.1	49.8	-15 20.4	-2.9	y	1.1 205 24.8	52.0	16 0.4	-2.1
Sep 9	y	1.8 167 7.2	23.8	0 29.0	-15.9	y	-1.9 125 28.9	49.7	-15 23.3	-3.0	y	1.1 206 16.8	52.1	15 58.3	-2.1
Sep 10	y	1.8 167 31.0	23.7	0 13.1	-15.8	y	-1.9 126 18.5	49.6	-15 26.3	-3.0	y	1.1 207 8.9	52.1	15 56.2	-2.1
Sep 11	y	1.8 167 54.7	23.7	-0 2.7	-15.9	y	-1.9 127 8.1	49.5	-15 29.3	-3.1	y	1.1 208 1.0	52.1	15 54.1	-2.1
Sep 12	y	1.8 168 18.5	23.7	-0 18.6	-15.8	y	-1.8 127 57.5	49.3	-15 32.4	-3.0	y	1.1 208 53.1	52.2	15 52.0	-2.0
Sep 13	y	1.8 168 42.1	23.6	-0 34.4	-15.9	y	-1.8 128 46.9	49.2	-15 35.4	-3.1	y	1.1 209 45.3	52.2	15 50.0	-2.1
Sep 14	y	1.8 169 5.8	23.6	-0 50.3	-15.9	y	-1.8 129 36.1	49.1	-15 38.5	-3.1	y	1.1 210 37.5	52.3	15 47.9	-2.1
Sep 15	y	1.7 169 29.3	23.5	-1 6.2	-15.9	y	-1.8 130 25.3	49.0	-15 41.6	-3.1	y	1.1 211 29.7	52.3	15 45.8	-2.0
Sep 16	y	1.7 169 52.9	23.5	-1 22.1	-15.9	y	-1.8 131 14.3	48.9	-15 44.7	-3.2	y	1.1 212 22.0	52.3	15 43.8	-2.1
Sep 17	y	1.7 170 16.4	23.5	-1 38.0	-15.9	y	-1.8 132 3.3	48.9	-15 47.9	-3.1	y	1.1 213 14.4	52.4	15 41.7	-2.0

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Sun and Planets

Date	SUN					Mercury							Venus										
	GHA	d	Dec	d		GHA	d	dd	Dec	d	dd	GHA	d	Dec	d								
	o	'	o	'	vis mag	o	'		o	'		o	'	o	'								
Sep 18	181	24.9	5.3	2	0.5	-23.3	ss -0.5	168	47.5	-27.5	-0.4	-3	6.8	-44.7	-0.2	sr -3.9	190	28.3	-10.3	7	21.9	-28.3	
	19	181	30.3	5.3	1	37.2	-23.2	ss -0.5	168	19.9	-26.7	-0.4	-3	51.5	-44.3	-0.2	sr -3.9	190	18.0	-10.2	6	53.6	-28.6
	20	181	35.6	5.3	1	14.0	-23.4	ss -0.4	167	53.2	-25.9	-0.4	-4	35.8	-43.8	-0.3	sr -3.9	190	7.8	-10.1	6	25.0	-28.7
	21	181	40.9	5.3	0	50.6	-23.3	ss -0.4	167	27.3	-25.2	-0.4	-5	19.6	-43.2	-0.3	sr -3.9	189	57.7	-10.0	5	56.3	-28.9
	22	181	46.2	5.3	0	27.3	-23.4	ss -0.4	167	2.1	-24.5	-0.4	-6	2.8	-42.7	-0.3	sr -3.9	189	47.8	-9.9	5	27.4	-29.1
23	181	51.5	5.2	0	3.9	-23.3	ss -0.3	166	37.6	-23.8	-0.3	-6	45.5	-42.2	-0.3	sr -3.9	189	37.9	-9.8	4	58.3	-29.2	
	24	181	56.7	5.2	-0	19.4	-23.4	ss -0.3	166	13.8	-23.1	-0.3	-7	27.7	-41.5	-0.3	sr -3.9	189	28.1	-9.7	4	29.1	-29.3
	25	182	1.9	5.2	-0	42.8	-23.4	ss -0.3	165	50.6	-22.5	-0.3	-8	9.2	-41.0	-0.2	-3.9	189	18.4	-9.6	3	59.8	-29.5
	26	182	7.1	5.1	-1	6.2	-23.4	ss -0.3	165	28.1	-21.9	-0.3	-8	50.2	-40.3	-0.4	-3.9	189	8.8	-9.6	3	30.3	-29.6
	27	182	12.2	5.1	-1	29.6	-23.3	ss -0.2	165	6.3	-21.3	-0.3	-9	30.5	-39.7	-0.3	-3.9	188	59.2	-9.5	3	0.7	-29.7
28	182	17.3	5.0	-1	52.9	-23.4	ss -0.2	164	45.0	-20.7	-0.3	-10	10.2	-39.0	-0.4	-3.9	188	49.7	-9.5	2	31.0	-29.8	
	29	182	22.3	5.0	-2	16.3	-23.3	ss -0.2	164	24.3	-20.1	-0.3	-10	49.2	-38.3	-0.4	-3.9	188	40.2	-9.4	2	1.2	-29.9
Sep 30	182	27.3	4.9	-2	39.6	-23.3	ss -0.2	164	4.3	-19.5	-0.3	-11	27.5	-37.5	-0.4	-3.9	188	30.8	-9.4	1	31.3	-29.9	
Oct 1	182	32.2	4.8	-3	2.9	-23.3	ss -0.2	163	44.8	-18.8	-0.3	-12	5.0	-36.8	-0.4	-3.9	188	21.4	-9.4	1	1.4	-30.0	
	2	182	37.0	4.8	-3	26.2	-23.2	ss -0.1	163	26.0	-18.2	-0.3	-12	41.8	-36.0	-0.4	-3.9	188	12.0	-9.4	0	31.4	-30.0
3	182	41.8	4.7	-3	49.4	-23.2	ss -0.1	163	7.8	-17.5	-0.3	-13	17.8	-35.2	-0.4	-3.9	188	2.6	-9.4	0	1.4	-30.1	
	4	182	46.5	4.6	-4	12.6	-23.1	ss -0.1	162	50.2	-16.8	-0.3	-13	53.0	-34.4	-0.4	-3.9	187	53.2	-9.4	-0	28.7	-30.1
	5	182	51.1	4.5	-4	35.7	-23.1	ss -0.1	162	33.4	-16.1	-0.4	-14	27.4	-33.5	-0.4	-3.9	187	43.8	-9.4	-0	58.8	-30.0
	6	182	55.7	4.4	-4	58.8	-23.0	ss -0.1	162	17.3	-15.3	-0.4	-15	0.9	-32.6	-0.4	-3.9	187	34.3	-9.5	-1	28.8	-30.1
	7	183	0.1	4.3	-5	21.8	-22.9	ss -0.1	162	2.0	-14.5	-0.4	-15	33.5	-31.6	-0.5	-3.9	187	24.9	-9.5	-1	58.9	-30.1
8	183	4.4	4.2	-5	44.7	-22.9	ss -0.1	161	47.5	-13.6	-0.5	-16	5.1	-30.7	-0.5	-3.9	187	15.3	-9.6	-2	29.0	-30.0	
	9	183	8.7	4.1	-6	7.6	-22.7	ss -0.1	161	33.9	-12.6	-0.5	-16	35.8	-29.7	-0.5	-3.9	187	5.8	-9.7	-2	59.0	-30.0
	10	183	12.8	4.0	-6	30.3	-22.7	ss -0.1	161	21.4	-11.5	-0.6	-17	5.5	-28.6	-0.6	-3.9	186	56.1	-9.7	-3	29.0	-29.9
	11	183	16.8	3.9	-6	53.0	-22.7	ss -0.1	161	9.9	-10.2	-0.6	-17	34.1	-27.5	-0.5	-3.9	186	46.4	-9.8	-3	58.9	-29.9
	12	183	20.7	3.7	-7	15.7	-22.5	ss -0.1	160	59.7	-8.9	-0.7	-18	1.6	-26.4	-0.5	-3.9	186	36.5	-9.9	-4	28.8	-29.8
13	183	24.4	3.6	-7	38.2	-22.4	ss -0.1	160	50.8	-7.4	-0.8	-18	28.0	-25.2	-0.6	-3.9	186	26.6	-10.0	-4	58.6	-29.7	
	14	183	28.0	3.5	-8	0.6	-22.3	ss -0.1	160	43.4	-5.7	-0.8	-18	53.2	-23.9	-0.7	-3.9	186	16.5	-10.2	-5	28.3	-29.6
	15	183	31.5	3.3	-8	22.9	-22.2	ss -0.1	160	37.8	-3.8	-0.9	-19	17.1	-22.5	-0.7	-3.9	186	6.4	-10.3	-5	57.9	-29.4
	16	183	34.8	3.2	-8	45.1	-22.0	ss -0.1	160	34.0	-1.6	-1.1	-19	39.6	-21.2	-0.7	-3.9	185	56.1	-10.4	-6	27.3	-29.4
	17	183	38.0	3.0	-9	7.1	-22.0	ss 0.0	160	32.4	0.8	-1.2	-20	0.8	-19.7	-0.8	-3.9	185	45.6	-10.6	-6	56.7	-29.1
18	183	41.0	2.9	-9	29.1	-21.8	ss 0.0	160	33.1	3.4	-1.3	-20	20.5	-18.1	-0.8	-3.9	185	35.0	-10.8	-7	25.8	-29.1	
	19	183	43.9	2.7	-9	50.9	-21.6	ss 0.0	160	36.6	6.5	-1.5	-20	38.6	-16.5	-0.8	-3.9	185	24.3	-10.9	-7	54.9	-28.8
	20	183	46.7	2.6	-10	12.5	-21.5	ss 0.0	160	43.0	9.9	-1.7	-20	55.1	-14.7	-0.9	-3.9	185	13.3	-11.1	-8	23.7	-28.7
	21	183	49.2	2.4	-10	34.0	-21.4	ss 0.0	160	52.9	13.7	-1.9	-21	9.8	-12.8	-1.0	-3.9	185	2.2	-11.3	-8	52.4	-28.5
	22	183	51.6	2.2	-10	55.4	-21.2	ss 0.1	161	6.5	17.9	-2.1	-21	22.6	-10.8	-1.0	-3.9	184	51.0	-11.5	-9	20.9	-28.3
23	183	53.9	2.1	-11	16.6	-21.0	ss 0.1	161	24.4	22.7	-2.4	-21	33.4	-8.6	-1.1	-3.9	184	39.5	-11.7	-9	49.2	-28.0	
	24	183	55.9	1.9	-11	37.6	-20.8	ss 0.2	161	47.1	28.0	-2.6	-21	42.0	-6.3	-1.2	-3.9	184	27.8	-11.9	-10	17.2	-27.6
	25	183	57.8	1.7	-11	58.4	-20.7	ss 0.2	162	15.1	33.8	-2.9	-21	48.3	-3.8	-1.3	-3.9	184	15.9	-12.1	-10	45.0	-27.6
	26	183	59.5	1.5	-12	19.1	-20.5	ss 0.3	162	48.9	40.3	-3.2	-21	52.1	-1.0	-1.4	-3.9	184	3.7	-12.4	-11	12.6	-27.3
	27	184	1.1	1.3	-12	39.6	-20.2	ss 0.4	163	29.2	47.4	-3.5	-21	53.1	1.9	-1.4	-3.9	183	51.4	-12.6	-11	39.9	-27.0
28	184	2.4	1.2	-12	59.8	-20.1	ss 0.5	164	16.5	55.1	-3.8	-21	51.2	5.1	-1.6	-3.9	183	38.8	-12.8	-12	6.9	-26.7	
	29	184	3.6	1.0	-13	19.9	-19.9	ss 0.6	165	11.6	63.3	-4.1	-21	46.1	8.4	-1.6	-3.9	183	25.9	-13.1	-12	33.6	-26.5
	30	184	4.6	0.8	-13	39.8	-19.6	ss 0.8	166	14.9	72.1	-4.4	-21	37.7	12.2	-1.9	-3.9	183	12.9	-13.3	-13	0.1	-26.1
	Oct 31	184	5.3	0.6	-13	59.4	-19.4	ss 1.0	167	27.0	81.2	-4.6	-21	25.5	16.0	-1.9	-3.9	182	59.5	-13.6	-13	26.2	-25.6
	Nov 1	184	5.9	0.4	-14	18.8	-19.2	ss 1.1	168	48.2	90.5	-4.6	-21	9.5	20.1	-2.0	-3.9	182	45.9	-13.9	-13	52.0	-25.4
2	184	6.4	0.2	-14	38.0	-18.9	ss 1.3	170	18.7	99.7	-4.6	-20	49.4	24.2	-2.1	-3.9	182	32.0	-14.1	-14	17.4	-25.1	
	3	184	6.6	0.0	-14	56.9	-18.7	ss 1.5	171	58.4	108.5	-4.4	-20	25.2	28.4	-2.1	-3.9	182	17.9	-14.4	-14	42.5	-24.7
	4	184	6.6	-0.2	-15	15.6	-18.5	ss 1.7	173	46.9	116.5	-4.0	-19	56.8	32.3	-2.0	-3.9	182	3.5	-14.7	-15	7.2	-24.3
	5	184	6.4	-0.4	-15	34.1	-18.2	ss 1.8	175	43.4	123.3	-3.4	-19	24.5	36.0	-1.8	-3.9	181	48.8	-15.0	-15	31.5	-23.9
	6	184	6.0	-0.6	-15	52.3	-17.9	2.0	177	46.7	128.5	-2.6	-18	48.5	39.0	-1.5	-3.9	181	33.8	-15.3	-15	55.4	-23.5
7	184	5.4	-0.8	-16	10.2	-17.7	2.2	179	55.2	131.7	-1.6	-18	9.5	41.2	-1.1	-3.9	181	18.5	-15.6	-16	18.9	-23.1	
	8	184	4.6	-1.0	-16	27.9	-17.3	2.3	182	6.9	132.7	-0.5	-17	28.3	42.5	-0.6	-3.9	181	2.9	-15.9	-16	42.0	-22.7
	9	184	3.5	-1.2	-16	45.2	-17.1	2.5	184	19.5	131.2	0.7	-16	45.8	42.4	0.0	-3.9	180	47.0	-16.2	-17	4.7	-22.2
	10	184	2.3	-1.5	-17	2.3	-16.9	2.7	186	30.8	127.4	1.9	-16	3.4	41.3	0.6	-3.9	180	30.7	-16.5	-17	26.9	-21.5
	11	184	0.8	-1.7	-17	19.2	-16.5	2.4	188	38.2	121.5	3.0	-15	22.1	38.9	1.2	-3.9	180	14.2	-16.8	-17	48.7	-21.2
12	183	59.1	-1.9	-17	35.7	-16.2	2.1	190	39.7	113.7	3.9	-14	43.2	35.4	1.8	-3.9	179	57.4	-17.1	-18	9.9	-20.8	
	13	183	57.3	-2.1	-17	51.9	-15.9	sr 1.8	192	33.4	104.5	4.6	-14	7.8	30.9	2.3	-3.9	179	40.3	-17.4	-18	30.7	-20.3
	14	183	55.1	-2.3	-18	7.8	-15.6	sr 1.6	194	17.9	94.3	5.1	-13	36.9	26.0	2.4	-3.9	179	22.8	-17.8	-18	51.0	-19.6
	15	183	52.8	-2.5	-18	23.4	-15.3	sr 1.3	195	52.2	83.6	5.3	-13	10.9	20.6	2.7	-3.9	179	5.1	-18.1	-19	10.8	-19.2
	16	183	50.3	-2.8	-18	38.7	-14.9	sr 1.0	197	15.8	72.8	5.4	-12	50.3	15.0	2.8	-3.9	178					

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Sun and Planets

Date	Mars					Jupiter					Saturn				
	vis	GHA	d	Dec	d'	vis	GHA	d	Dec	d'	vis	GHA	d	Dec	d'
Sep 18	y	1.7 170 39.8	23.4	-1 53.9	-15.9	y	-1.8 132 52.1	48.8	-15 51.0	-3.2	y	1.1 214 6.8	52.4	15 39.7	-2.0
19	y	1.7 171 3.3	23.4	-2 9.8	-15.8	y	-1.8 133 40.9	48.7	-15 54.2	-3.1	y	1.1 214 59.2	52.5	15 37.7	-2.0
20	y	1.7 171 26.6	23.3	-2 25.6	-15.9	y	-1.8 134 29.5	48.6	-15 57.3	-3.2	y	1.1 215 51.7	52.5	15 35.7	-2.0
21	y	1.7 171 49.9	23.3	-2 41.5	-15.9	y	-1.8 135 18.1	48.5	-16 0.5	-3.2	y	1.1 216 44.2	52.6	15 33.7	-2.0
22	y	1.7 172 13.2	23.2	-2 57.4	-15.9	y	-1.8 136 6.6	48.4	-16 3.7	-3.2	y	1.1 217 36.8	52.6	15 31.7	-1.9
23	y	1.7 172 36.4	23.2	-3 13.3	-15.8	y	-1.8 136 55.0	48.3	-16 6.9	-3.3	y	1.1 218 29.4	52.7	15 29.8	-2.0
24	y	1.7 172 59.6	23.1	-3 29.1	-15.9	y	-1.8 137 43.3	48.2	-16 10.2	-3.2	y	1.1 219 22.1	52.7	15 27.8	-1.9
25	y	1.7 173 22.7	23.0	-3 45.0	-15.8	y	-1.8 138 31.5	48.1	-16 13.4	-3.2	y	1.1 220 14.9	52.8	15 25.9	-1.9
26	y	1.7 173 45.7	23.0	-4 0.8	-15.8	y	-1.8 139 19.6	48.0	-16 16.6	-3.3	y	1.1 221 7.6	52.8	15 24.0	-1.9
27	y	1.7 174 8.7	22.9	-4 16.6	-15.8	y	-1.8 140 7.6	48.0	-16 19.9	-3.3	y	1.1 222 0.5	52.9	15 22.1	-1.9
28	y	1.7 174 31.6	22.9	-4 32.4	-15.8	y	-1.8 140 55.6	47.9	-16 23.2	-3.3	y	1.1 222 53.4	53.0	15 20.2	-1.9
29	y	1.7 174 54.5	22.8	-4 48.2	-15.8	y	-1.8 141 43.5	47.8	-16 26.5	-3.2	y	1.1 223 46.3	53.0	15 18.3	-1.8
Sep 30	y	1.7 175 17.3	22.7	-5 4.0	-15.7	y	-1.8 142 31.3	47.7	-16 29.7	-3.3	y	1.1 224 39.4	53.1	15 16.5	-1.9
Oct 1	y	1.7 175 40.0	22.7	-5 19.7	-15.7	y	-1.8 143 19.0	47.6	-16 33.0	-3.3	y	1.1 225 32.4	53.1	15 14.6	-1.8
2	y	1.7 176 2.7	22.6	-5 35.4	-15.7	y	-1.8 144 6.6	47.6	-16 36.3	-3.3	y	1.1 226 25.6	53.2	15 12.8	-1.8
3	y	1.7 176 25.3	22.5	-5 51.1	-15.6	y	-1.8 144 54.2	47.5	-16 39.6	-3.3	y	1.1 227 18.8	53.3	15 11.0	-1.8
4	y	1.7 176 47.8	22.5	-6 6.7	-15.7	y	-1.8 145 41.6	47.4	-16 42.9	-3.4	y	1.1 228 12.0	53.3	15 9.2	-1.7
5	y	1.7 177 10.3	22.4	-6 22.4	-15.6	y	-1.8 146 29.1	47.3	-16 46.3	-3.3	y	1.1 229 5.3	53.4	15 7.5	-1.8
6	y	1.7 177 32.7	22.3	-6 38.0	-15.5	y	-1.8 147 16.4	47.3	-16 49.6	-3.3	y	1.1 229 58.7	53.5	15 5.7	-1.7
7	y	1.7 177 55.0	22.2	-6 53.5	-15.6	y	-1.8 148 3.7	47.2	-16 52.9	-3.3	y	1.1 230 52.2	53.5	15 4.0	-1.7
8	y	1.7 178 17.3	22.2	-7 9.1	-15.4	y	-1.8 148 50.9	47.1	-16 56.2	-3.4	y	1.1 231 45.7	53.6	15 2.3	-1.7
9	y	1.7 178 39.4	22.1	-7 24.5	-15.5	y	-1.8 149 38.0	47.1	-16 59.6	-3.3	y	1.1 232 39.3	53.6	15 0.6	-1.6
10	y	1.6 179 1.5	22.0	-7 40.0	-15.4	y	-1.8 150 25.1	47.0	-17 2.9	-3.3	y	1.1 233 32.9	53.7	14 59.0	-1.6
11	y	1.6 179 23.5	21.9	-7 55.4	-15.4	y	-1.8 151 12.1	46.9	-17 6.2	-3.3	y	1.1 234 26.6	53.8	14 57.4	-1.7
12	y	1.6 179 45.4	21.8	-8 10.8	-15.3	y	-1.8 151 59.0	46.9	-17 9.5	-3.4	y	1.1 235 20.4	53.9	14 55.7	-1.5
13	y	1.6 180 7.2	21.7	-8 26.1	-15.3	y	-1.8 152 45.9	46.8	-17 12.9	-3.3	y	1.1 236 14.3	53.9	14 54.2	-1.6
14	y	1.6 180 28.9	21.6	-8 41.4	-15.2	y	-1.8 153 32.7	46.7	-17 16.2	-3.3	y	1.1 237 8.2	54.0	14 52.6	-1.6
15	y	1.6 180 50.6	21.5	-8 56.6	-15.2	y	-1.8 154 19.4	46.7	-17 19.5	-3.4	y	1.1 238 2.2	54.1	14 51.0	-1.5
16	y	1.6 181 12.1	21.5	-9 11.8	-15.2	y	-1.7 155 6.1	46.6	-17 22.9	-3.3	y	1.1 238 56.3	54.2	14 49.5	-1.5
17	y	1.6 181 33.6	21.4	-9 27.0	-15.0	y	-1.7 155 52.7	46.6	-17 26.2	-3.3	y	1.1 239 50.4	54.2	14 48.0	-1.4
18	y	1.6 181 54.9	21.3	-9 42.0	-15.1	y	-1.7 156 39.3	46.5	-17 29.5	-3.4	y	1.1 240 44.7	54.3	14 46.6	-1.5
19	y	1.6 182 16.2	21.2	-9 57.1	-14.9	y	-1.7 157 25.8	46.4	-17 32.9	-3.3	y	1.1 241 39.0	54.4	14 45.1	-1.4
20	y	1.6 182 37.4	21.1	-10 12.0	-15.0	y	-1.7 158 12.2	46.4	-17 36.2	-3.3	y	1.1 242 33.4	54.5	14 43.7	-1.4
21	y	1.6 182 58.4	21.0	-10 27.0	-14.8	y	-1.7 158 58.6	46.3	-17 39.5	-3.3	y	1.1 243 27.8	54.5	14 42.3	-1.3
22	y	1.6 183 19.4	20.9	-10 41.8	-14.8	y	-1.7 159 44.9	46.3	-17 42.8	-3.3	y	1.1 244 22.4	54.6	14 41.0	-1.4
23	y	1.6 183 40.2	20.8	-10 56.6	-14.7	y	-1.7 160 31.2	46.2	-17 46.1	-3.3	y	1.1 245 17.0	54.7	14 39.6	-1.3
24	y	1.6 184 1.0	20.7	-11 11.3	-14.6	y	-1.7 161 17.5	46.2	-17 49.4	-3.3	y	1.1 246 11.7	54.8	14 38.3	-1.3
25	y	1.6 184 21.7	20.5	-11 25.9	-14.6	y	-1.7 162 3.6	46.1	-17 52.7	-3.3	y	1.1 247 6.5	54.9	14 37.0	-1.2
26	y	1.6 184 42.2	20.4	-11 40.5	-14.5	y	-1.7 162 49.8	46.1	-17 56.0	-3.3	y	1.1 248 1.4	55.0	14 35.8	-1.3
27	y	1.6 185 2.6	20.3	-11 55.0	-14.4	y	-1.7 163 35.9	46.0	-17 59.3	-3.3	y	1.1 248 56.4	55.1	14 34.5	-1.1
28	y	1.6 185 23.0	20.2	-12 9.4	-14.4	y	-1.7 164 21.9	46.0	-18 2.6	-3.2	y	1.1 249 51.4	55.1	14 33.4	-1.2
29	y	1.6 185 43.2	20.1	-12 23.8	-14.3	y	-1.7 165 7.9	46.0	-18 5.8	-3.3	y	1.1 250 46.6	55.2	14 32.2	-1.1
30	y	1.6 186 3.3	20.0	-12 38.1	-14.1	y	-1.7 165 53.9	45.9	-18 9.1	-3.2	y	1.1 251 41.8	55.3	14 31.1	-1.1
Oct 31	y	1.6 186 23.3	19.9	-12 52.2	-14.2	y	-1.7 166 39.8	45.9	-18 12.3	-3.3	y	1.1 252 37.1	55.4	14 30.0	-1.1
Nov 1	y	1.6 186 43.2	19.8	-13 6.4	-14.0	y	-1.7 167 25.7	45.8	-18 15.6	-3.2	y	1.1 253 32.5	55.5	14 28.9	-1.1
2	y	1.6 187 2.9	19.7	-13 20.4	-13.9	y	-1.7 168 11.5	45.8	-18 18.8	-3.2	y	1.1 254 28.0	55.6	14 27.8	-1.0
3	y	1.6 187 22.6	19.5	-13 34.3	-13.8	y	-1.7 168 57.3	45.8	-18 22.0	-3.2	y	1.1 255 23.6	55.7	14 26.8	-0.9
4	y	1.6 187 42.1	19.4	-13 48.1	-13.8	y	-1.7 169 43.1	45.7	-18 25.2	-3.2	y	1.1 256 19.3	55.8	14 25.9	-1.0
5	y	1.6 188 1.6	19.3	-14 1.9	-13.6	y	-1.7 170 28.8	45.7	-18 28.4	-3.2	y	1.0 257 15.1	55.9	14 24.9	-0.9
6	y	1.6 188 20.9	19.2	-14 15.5	-13.6	y	-1.7 171 14.5	45.7	-18 31.6	-3.1	y	1.0 258 11.0	56.0	14 24.0	-0.9
7	y	1.6 188 40.0	19.0	-14 29.1	-13.4	y	-1.7 172 0.2	45.6	-18 34.7	-3.2	y	1.0 259 6.9	56.1	14 23.1	-0.8
8	y	1.6 188 59.1	18.9	-14 42.5	-13.4	y	-1.7 172 45.8	45.6	-18 37.9	-3.1	y	1.0 260 3.0	56.2	14 22.3	-0.9
9	y	1.6 189 18.0	18.8	-14 55.9	-13.2	y	-1.7 173 31.5	45.6	-18 41.0	-3.2	y	1.0 260 59.1	56.3	14 21.4	-0.7
10	y	1.6 189 36.8	18.7	-15 9.1	-13.1	y	-1.7 174 17.0	45.6	-18 44.2	-3.1	y	1.0 261 55.4	56.4	14 20.7	-0.8
11	y	1.6 189 55.5	18.5	-15 22.2	-13.1	y	-1.7 175 2.6	45.5	-18 47.3	-3.1	y	1.0 262 51.8	56.5	14 19.9	-0.7
12	y	1.6 190 14.0	18.4	-15 35.3	-12.9	y	-1.7 175 48.1	45.5	-18 50.4	-3.0	y	1.0 263 48.2	56.6	14 19.2	-0.7
13	y	1.6 190 32.4	18.3	-15 48.2	-12.8	y	-1.7 176 33.6	45.5	-18 53.4	-3.1	y	1.0 264 44.8	56.7	14 18.5	-0.6
14	y	1.6 190 50.7	18.2	-16 1.0	-12.7	y	-1.7 177 19.1	45.5	-18 56.5	-3.1	y	1.0 265 41.4	56.8	14 17.9	-0.6
15	y	1.6 191 8.9	18.0	-16 13.7	-12.6	y	-1.7 178 4.5	45.4	-18 59.6	-3.0	y	1.0 266 38.2	56.9	14 17.3	-0.6
16	y	1.6 191 26.9	17.9	-16 26.3	-12.4	y	-1.7 178 50.0	45.4	-19 2.6	-3.0	y	1.0 267 35.0	57.0	14 16.7	-0.5
17	y	1.6 191 44.8	17.8	-16 38.7	-12.3	y	-1.7 179 35.4	45.4	-19 5.6	-3.0	y	1.0 268 32.0	57.1	14 16.2	-0.5
18	y	1.6 192 2.5	17.6	-16 51.0	-12.2	y	-1.7 180 20.8	45.4	-19 8.6	-3.0	y	1.0 269 29.1	57.2	14 15.7	-0.5
19	y	1.6 192 20.2	17.5	-17 3.2	-12.1	y	-1.7 181 6.2	45.4	-19 11.6	-3.0	y	1.0 270 26.2	57.3	14 15.2	-0.4
20	y	1.6 192 37.6	17.3	-17 15.3	-12.0	y	-1.7 181 51.5	45.3	-19 14.6	-2.9	y	1.0 271 23.5	57.4	14 14.8	-0.4
Nov 21	y	1.6 192 55.0	17.2	-17 27.3	-11.8	y	-1.7 182 36.9	45.3	-19 17.5	-2.9	y	1.0 272 20.9	57.5	14 14.4	-0.4

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Sun and Planets

Date	SUN				Mercury						Venus													
	GHA o	d	Dec o	d	vis mag	GHA o	d	dd	Dec o	d	dd	vis mag	GHA o	d	Dec o	d								
Nov 22	183	30.6	-4.0	-20	3.2	-12.8	sr	-0.3	202	4.7	18.4	3.6	-12	36.7	-12.7	1.8	-3.9	176	52.3	-20.1	-21	13.7	-15.2	
23	183	26.6	-4.2	-20	16.0	-12.5	sr	-0.3	202	23.1	11.9	3.2	-12	49.4	-15.8	1.6	-3.9	176	32.2	-20.4	-21	28.9	-14.6	
24	183	22.4	-4.4	-20	28.5	-12.0	sr	-0.4	202	35.0	6.1	2.9	-13	5.2	-18.5	1.3	-3.9	176	11.8	-20.7	-21	43.5	-14.0	
25	183	18.0	-4.6	-20	40.5	-11.7	sr	-0.5	202	41.2	1.0	2.6	-13	23.7	-20.6	1.0	-3.9	175	51.1	-20.9	-21	57.5	-13.3	
26	183	13.4	-4.7	-20	52.2	-11.3	sr	-0.5	202	42.2	-3.5	2.3	-13	44.3	-22.5	1.0	ss	-3.9	175	30.2	-21.2	-22	10.8	-12.7
27	183	8.7	-4.9	-21	3.5	-10.9	sr	-0.5	202	38.6	-7.5	2.0	-14	6.8	-23.9	0.7	ss	-3.9	175	9.0	-21.4	-22	23.5	-12.0
28	183	3.8	-5.1	-21	14.4	-10.5	sr	-0.6	202	31.1	-11.1	1.8	-14	30.7	-25.0	0.5	ss	-3.9	174	47.6	-21.6	-22	35.5	-11.3
29	182	58.7	-5.3	-21	24.9	-10.1	sr	-0.6	202	20.1	-14.2	1.6	-14	55.7	-26.0	0.5	ss	-3.9	174	26.0	-21.8	-22	46.8	-10.7
Nov 30	182	53.4	-5.4	-21	35.0	-9.7	sr	-0.6	202	5.9	-16.9	1.4	-15	21.7	-26.5	0.3	ss	-3.9	174	4.2	-22.0	-22	57.5	-9.9
Dec 1	182	48.0	-5.6	-21	44.7	-9.3	sr	-0.6	201	48.9	-19.4	1.2	-15	48.2	-27.0	0.3	ss	-3.9	173	42.2	-22.2	-23	7.4	-9.3
2	182	42.4	-5.7	-21	54.0	-8.8	sr	-0.6	201	29.5	-21.6	1.1	-16	15.2	-27.2	0.1	ss	-3.9	173	19.9	-22.4	-23	16.7	-8.6
3	182	36.7	-5.9	-22	2.8	-8.5	sr	-0.6	201	8.0	-23.5	1.0	-16	42.4	-27.2	0.0	ss	-3.9	172	57.5	-22.6	-23	25.3	-7.8
4	182	30.8	-6.0	-22	11.3	-8.0	sr	-0.6	200	44.4	-25.3	0.9	-17	9.6	-27.1	0.0	ss	-3.9	172	34.9	-22.7	-23	33.1	-7.2
5	182	24.7	-6.2	-22	19.3	-7.5	sr	-0.6	200	19.2	-26.9	0.8	-17	36.7	-26.9	-0.1	ss	-3.9	172	12.2	-22.9	-23	40.3	-6.4
6	182	18.5	-6.3	-22	26.8	-7.2	sr	-0.6	199	52.3	-28.3	0.7	-18	3.6	-26.6	-0.1	ss	-3.9	171	49.4	-23.0	-23	46.7	-5.7
7	182	12.2	-6.4	-22	34.0	-6.7	sr	-0.6	199	24.0	-29.6	0.7	-18	30.2	-26.1	-0.3	ss	-3.9	171	26.4	-23.1	-23	52.4	-5.0
8	182	5.8	-6.6	-22	40.7	-6.2	sr	-0.6	198	54.4	-30.8	0.6	-18	56.3	-25.6	-0.2	ss	-3.9	171	3.3	-23.2	-23	57.4	-4.2
9	181	59.2	-6.7	-22	46.9	-5.8	sr	-0.6	198	23.6	-31.9	0.6	-19	21.9	-25.0	-0.3	ss	-3.9	170	40.1	-23.3	-24	1.6	-3.5
10	181	52.5	-6.8	-22	52.7	-5.4	sr	-0.6	197	51.7	-32.9	0.5	-19	46.9	-24.2	-0.4	ss	-3.9	170	16.8	-23.3	-24	5.1	-2.6
11	181	45.7	-6.9	-22	58.1	-4.9	sr	-0.6	197	18.8	-33.9	0.5	-20	11.1	-23.6	-0.3	ss	-3.9	169	53.4	-23.4	-24	7.9	-2.0
12	181	38.8	-7.0	-23	3.0	-4.4	sr	-0.6	196	44.9	-34.8	0.4	-20	34.7	-22.7	-0.5	ss	-3.9	169	30.0	-23.4	-24	9.9	-1.3
13	181	31.8	-7.1	-23	7.4	-4.0	sr	-0.6	196	10.1	-35.6	0.4	-20	57.4	-21.8	-0.5	ss	-3.9	169	6.6	-23.4	-24	11.2	-0.5
14	181	24.7	-7.2	-23	11.4	-3.5	sr	-0.6	195	34.5	-36.4	0.4	-21	19.2	-21.0	-0.4	ss	-3.9	168	43.2	-23.4	-24	11.7	0.2
15	181	17.6	-7.2	-23	14.9	-3.0	sr	-0.6	194	58.1	-37.2	0.4	-21	40.2	-19.9	-0.5	ss	-3.9	168	19.7	-23.4	-24	11.5	1.0
16	181	10.3	-7.3	-23	17.9	-2.6	sr	-0.6	194	20.9	-37.9	0.4	-22	0.1	-19.0	-0.4	ss	-3.9	167	56.3	-23.4	-24	10.5	1.8
17	181	3.0	-7.4	-23	20.5	-2.2	sr	-0.6	193	43.0	-38.6	0.3	-22	19.1	-18.0	-0.5	ss	-3.9	167	32.9	-23.4	-24	8.7	2.4
18	180	55.7	-7.4	-23	22.7	-1.6	sr	-0.6	193	4.4	-39.3	0.3	-22	37.1	-16.9	-0.5	ss	-3.9	167	9.5	-23.3	-24	6.3	3.3
19	180	48.3	-7.4	-23	24.3	-1.2	sr	-0.7	192	25.2	-39.9	0.3	-22	54.0	-15.8	-0.6	ss	-3.9	166	46.3	-23.2	-24	3.0	3.9
20	180	40.8	-7.5	-23	25.5	-0.7	sr	-0.7	191	45.3	-40.5	0.3	-23	9.8	-14.7	-0.5	ss	-3.9	166	23.1	-23.1	-23	59.1	4.6
21	180	33.4	-7.5	-23	26.2	-0.3	sr	-0.7	191	4.8	-41.1	0.3	-23	24.5	-13.5	-0.6	ss	-3.9	165	59.9	-23.0	-23	54.3	5.4
22	180	25.9	-7.5	-23	26.5	0.3	sr	-0.7	190	23.7	-41.6	0.3	-23	38.0	-12.4	-0.5	ss	-3.9	165	37.0	-22.9	-23	48.9	6.2
23	180	18.4	-7.5	-23	26.2	0.7	sr	-0.7	189	42.1	-42.2	0.3	-23	50.4	-11.1	-0.7	ss	-3.9	165	14.1	-22.7	-23	42.7	6.9
24	180	10.9	-7.5	-23	25.5	1.2	sr	-0.7	188	59.9	-42.7	0.3	-24	1.5	-9.9	-0.6	ss	-3.9	164	51.4	-22.5	-23	35.8	7.6
25	180	3.4	-7.5	-23	24.3	1.6	sr	-0.8	188	17.2	-43.2	0.2	-24	11.4	-8.7	-0.6	ss	-3.9	164	28.9	-22.4	-23	28.2	8.4
26	179	56.0	-7.4	-23	22.7	2.1	sr	-0.8	187	34.1	-43.6	0.2	-24	20.1	-7.4	-0.6	ss	-3.9	164	6.5	-22.2	-23	19.8	9.1
27	179	48.6	-7.4	-23	20.6	2.6		-0.8	186	50.5	-44.1	0.2	-24	27.5	-6.1	-0.7	ss	-3.9	163	44.3	-22.0	-23	10.7	9.8
28	179	41.2	-7.3	-23	18.0	3.0		-0.9	186	6.4	-44.5	0.2	-24	33.6	-4.7	-0.7	ss	-3.9	163	22.3	-21.8	-23	0.9	10.4
29	179	33.8	-7.3	-23	15.0	3.6		-0.9	185	21.9	-44.9	0.2	-24	38.3	-3.5	-0.6	ss	-3.9	163	0.6	-21.5	-22	50.5	11.2
30	179	26.6	-7.2	-23	11.4	3.9		-0.9	184	37.0	-45.3	0.2	-24	41.8	-2.0	-0.8	ss	-3.9	162	39.1	-21.3	-22	39.3	11.9
Dec 31	179	19.4	-7.1	-23	7.5	4.5		-1.0	183	51.7	-45.6	0.2	-24	43.8	-0.7	-0.6	ss	-3.9	162	17.8	-21.0	-22	27.4	12.5
Jan 1	179	12.2	-7.1	-23	3.0	5.1		-1.0	183	6.1	-45.6	0.2	-24	44.5	0.6	-0.6	ss	-3.9	161	56.8	-21.0	-22	14.9	13.1

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Date	Mars					Jupiter					Saturn													
	GHA		d	Dec		GHA		d	Dec		GHA		d	Dec										
	vis	mag	o	'	o	'	o	'	o	'	o	'	o	'	o	'								
Nov 22	y	1.6	193	12.2	17.1	-17	39.1	-11.6	-1.7	183	22.2	45.3	-19	20.4	-3.0	y	1.0	273	18.4	57.6	14	14.0	-0.3	
23	y	1.6	193	29.3	16.9	-17	50.7	-11.6	-1.7	184	7.6	45.3	-19	23.4	-2.9	y	1.0	274	16.0	57.7	14	13.7	-0.3	
24	y	1.6	193	46.2	16.8	-18	2.3	-11.4	-1.7	184	52.9	45.3	-19	26.3	-2.8	y	1.0	275	13.7	57.8	14	13.4	-0.2	
25	y	1.6	194	3.0	16.7	-18	13.7	-11.2	-1.7	185	38.2	45.3	-19	29.1	-2.9	y	1.0	276	11.5	57.9	14	13.2	-0.2	
26	y	1.6	194	19.7	16.5	-18	24.9	-11.1	-1.7	186	23.5	45.3	-19	32.0	-2.8	y	1.0	277	9.4	58.0	14	13.0	-0.2	
27	y	1.6	194	36.2	16.4	-18	36.0	-11.0	-1.7	187	8.8	45.3	-19	34.8	-2.8	y	1.0	278	7.4	58.1	14	12.8	-0.1	
28	y	1.6	194	52.7	16.3	-18	47.0	-10.8	-1.7	187	54.1	45.3	-19	37.6	-2.8	y	1.0	279	5.5	58.2	14	12.7	-0.1	
29	y	1.6	195	8.9	16.1	-18	57.8	-10.6	-1.7	188	39.4	45.3	-19	40.4	-2.8	y	1.0	280	3.8	58.3	14	12.6	-0.1	
Nov 30	y	1.6	195	25.1	16.0	-19	8.4	-10.5	-1.7	189	24.7	45.3	-19	43.2	-2.7	y	1.0	281	2.1	58.5	14	12.5	0.0	
Dec 1	y	1.6	195	41.1	15.9	-19	18.9	-10.4	-1.7	190	10.0	45.3	-19	45.9	-2.8	y	0.9	282	0.6	58.6	14	12.5	0.0	
2	y	1.6	195	56.9	15.7	-19	29.3	-10.1	y	-1.7	190	55.3	45.3	-19	48.7	-2.7	y	0.9	282	59.1	58.7	14	12.5	0.1
3	y	1.6	196	12.7	15.6	-19	39.4	-10.0	y	-1.7	191	40.6	45.3	-19	51.4	-2.6	y	0.9	283	57.8	58.8	14	12.6	0.1
4	y	1.6	196	28.3	15.5	-19	49.4	-9.9	y	-1.7	192	25.9	45.3	-19	54.0	-2.7	y	0.9	284	56.6	58.9	14	12.7	0.1
5	y	1.6	196	43.7	15.3	-19	59.3	-9.7	y	-1.7	193	11.2	45.3	-19	56.7	-2.6	y	0.9	285	55.5	59.0	14	12.8	0.2
6	y	1.6	196	59.1	15.2	-20	9.0	-9.5	y	-1.7	193	56.5	45.3	-19	59.3	-2.6	y	0.9	286	54.4	59.1	14	13.0	0.2
7	y	1.6	197	14.2	15.1	-20	18.5	-9.3	y	-1.7	194	41.9	45.3	-20	1.9	-2.6	y	0.9	287	53.5	59.2	14	13.2	0.3
8	y	1.5	197	29.3	14.9	-20	27.8	-9.2	y	-1.7	195	27.2	45.4	-20	4.5	-2.6	y	0.9	288	52.8	59.3	14	13.5	0.2
9	y	1.5	197	44.2	14.8	-20	37.0	-9.0	y	-1.7	196	12.6	45.4	-20	7.1	-2.5	y	0.9	289	52.1	59.4	14	13.7	0.4
10	y	1.5	197	59.0	14.7	-20	46.0	-8.8	y	-1.7	196	57.9	45.4	-20	9.6	-2.6	y	0.9	290	51.5	59.5	14	14.1	0.3
11	y	1.5	198	13.7	14.5	-20	54.8	-8.6	y	-1.7	197	43.3	45.4	-20	12.2	-2.5	y	0.9	291	51.0	59.7	14	14.4	0.4
12	y	1.5	198	28.2	14.4	-21	3.4	-8.5	y	-1.7	198	28.7	45.4	-20	14.7	-2.4	y	0.9	292	50.7	59.8	14	14.8	0.5
13	y	1.5	198	42.6	14.3	-21	11.9	-8.2	y	-1.7	199	14.1	45.4	-20	17.1	-2.5	y	0.9	293	50.5	59.9	14	15.3	0.4
14	y	1.5	198	56.8	14.1	-21	20.1	-8.1	y	-1.7	199	59.6	45.5	-20	19.6	-2.4	y	0.9	294	50.3	60.0	14	15.7	0.5
15	y	1.5	199	10.9	14.0	-21	28.2	-7.9	y	-1.7	200	45.0	45.5	-20	22.0	-2.4	y	0.9	295	50.3	60.1	14	16.2	0.6
16	y	1.5	199	24.9	13.9	-21	36.1	-7.6	y	-1.7	201	30.5	45.5	-20	24.4	-2.4	y	0.9	296	50.4	60.2	14	16.8	0.6
17	y	1.5	199	38.8	13.7	-21	43.7	-7.5	y	-1.7	202	16.0	45.5	-20	26.8	-2.3	y	0.9	297	50.6	60.3	14	17.4	0.6
18	y	1.5	199	52.5	13.6	-21	51.2	-7.3	y	-1.7	203	1.6	45.6	-20	29.1	-2.3	y	0.9	298	50.9	60.4	14	18.0	0.6
19	y	1.5	200	6.2	13.5	-21	58.5	-7.1	y	-1.7	203	47.1	45.6	-20	31.4	-2.3	y	0.8	299	51.3	60.5	14	18.6	0.7
20	y	1.5	200	19.7	13.4	-22	5.6	-6.9	y	-1.8	204	32.7	45.6	-20	33.7	-2.3	y	0.8	300	51.8	60.6	14	19.3	0.8
21	y	1.5	200	33.0	13.3	-22	12.5	-6.7	y	-1.8	205	18.3	45.7	-20	36.0	-2.2	y	0.8	301	52.4	60.7	14	20.1	0.7
22	y	1.5	200	46.3	13.1	-22	19.2	-6.4	y	-1.8	206	4.0	45.7	-20	38.2	-2.3	y	0.8	302	53.1	60.8	14	20.8	0.8
23	y	1.5	200	59.4	13.0	-22	25.6	-6.3	y	-1.8	206	49.7	45.7	-20	40.5	-2.1	y	0.8	303	53.9	60.9	14	21.6	0.8
24	y	1.5	201	12.4	12.9	-22	31.9	-6.1	y	-1.8	207	35.4	45.8	-20	42.6	-2.2	y	0.8	304	54.9	61.0	14	22.4	0.9
25	y	1.5	201	25.3	12.8	-22	38.0	-5.8	y	-1.8	208	21.2	45.8	-20	44.8	-2.2	y	0.8	305	55.9	61.1	14	23.3	0.9
26	y	1.5	201	38.1	12.7	-22	43.8	-5.6	y	-1.8	209	7.0	45.9	-20	47.0	-2.1	y	0.8	306	57.0	61.2	14	24.2	0.9
27	y	1.5	201	50.8	12.6	-22	49.4	-5.4	y	-1.8	209	52.8	45.9	-20	49.1	-2.0	y	0.8	307	58.2	61.3	14	25.1	1.0
28	y	1.5	202	3.4	12.5	-22	54.8	-5.2	y	-1.8	210	38.7	45.9	-20	51.1	-2.1	y	0.8	308	59.6	61.4	14	26.1	1.0
29	y	1.5	202	15.9	12.4	-23	0.0	-5.0	y	-1.8	211	24.7	46.0	-20	53.2	-2.0	y	0.8	310	1.0	61.5	14	27.1	1.0
30	y	1.5	202	28.3	12.3	-23	5.0	-4.8	y	-1.8	212	10.7	46.0	-20	55.2	-2.0	y	0.8	311	2.5	61.6	14	28.1	1.1
Dec 31	y	1.5	202	40.6	12.2	-23	9.8	-4.5	y	-1.8	212	56.7	46.1	-20	57.2	-2.0	y	0.8	312	4.1	61.7	14	29.2	1.1
Jan 1	y	1.5	202	52.8	12.2	-23	14.3	-4.2	y	-1.8	213	42.8	46.1	-20	59.2	-2.0	y	0.8	313	5.8	61.7	14	30.3	1.1