Almanacco astronomico per l'anno 2010

Nota del curatore

Questo almanacco è stato compilato prevedendone l'uso da parte di astrofili, studenti e di persone interessate all'osservazione pratica dei fenomeni astronomici per l'anno 2010.

I tempi, se non diversamente indicato, sono forniti in TDT (tempo dinamico terrestre). Per avere i tempi espressi in UT (tempo universale) in pratica quello segnato dai comuni orologi, vanno sottratti 66,2 secondi: saranno aggiunti 3600 secondi quando è necessario tenere conto della cosiddetta ora legale o estiva.

Gli istanti del sorgere e del tramontare degli astri e tutti i fenomeni topocentrici sono calcolati per il luogo terrestre di coordinate 42° nord; 12° est con quota positiva di 48 metri. L'ellissoide di riferimento è il WGS84. Si noti che per varie applicazioni pratiche non è un riferimento critico.

Questo almanacco non contiene le previsioni di occultazioni lunari e asteroidali perché oggetto di elaborati a parte. La loro collocazione è presso questi indirizzi Web:
http://digilander.libero.it/occultazioni/lunari.html
http://digilander.libero.it/occultazioni/asteroidali.html
http://digilander.libero.it/occultazioni/asteroidali-grafiche.html

La campagna di osservazioni dei fenomeni mutui (occultazioni ed eclissi) fra Giove e i suoi satelliti medicei (PheMu09) sta per concludersi. Per l'anno 2010 sono stati calcolati gli ultimi fenomeni fino al termine del 1° semestre 2010 e collocati presso questo indirizzo Web:
http://digilander.libero.it/occultazioni/giove/1h10.htm
Per l'archivio storico dal 2007 ad oggi dei suddetti fenomeni mutui, si può consultare la seguente pagina Web:
http://digilander.libero.it/occultazioni/giove.html

Nonostante la massima cura con la quale sono state ricercate le previsioni, non si possono dare garanzie di alcun genere e gli autori compreso il curatore, non possono essere ritenuti responsabili di eventuali errori ed omissioni.

Ringraziamenti e riconoscimenti

La maggior parte dell'Almanacco è stata compilata con l'ausilio del programma Occult ad eccezione delle coordinate della Luna, che richiesero l'uso del programma Solex di Aldo Vitagliano. Alcuni grafici delle traiettorie dei pianeti per mezzo di SkyMap Pro 11.

Condizioni d'uso dell'Almanacco

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Il curatore ringrazia coloro che vorranno segnalare errori e omissioni per i quali si scusa fin d'ora. Sono apprezzati i suggerimenti per migliorare l'Almanacco. Si prega di scrivere una email a ephemerides.astronomiques[*]ifrance.com (sostituire [*] col segno @] oppure lasciare una nota all'indirizzo http://tools.mrwebmaster.it/work/forum.php?forum_id=9747 .

12 ottobre 2009

Pierre Dubochet

Indice

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C A L E N D A R F O R 2010

January

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

February

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

March

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

April

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

May

Su	Mo	Tu	We	Th	Fr	Sa
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

June

Su	Mo	Tu	We	Th	Fr	Sa
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

July

Su	Mo	Tu	We	Th	Fr	Sa
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

August

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

September

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

October

Su	Mo	Tu	We	Th	Fr	Sa
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

November

Su	Mo	Tu	We	Th	Fr	Sa
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

December

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

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Diary of Astronomical Phenomena 2010

January

d	h		d	h	
1	20	Moon at perigee	15	19	Mercury stationary
3	0	Earth at perihelion	17	1	Moon at apogee
4	2	Regulus 3.7N of Moon	17	20	Neptune 3.3S of Moon
4	18	Mercury inferior conjunction	18	6	Jupiter 4.2S of Moon
5	11	Mercury 3.4N of Venus	20	6	Uranus 5.4S of Moon
7	10	LAST QUARTER	23	10	FIRST QUARTER
7	23	Spica 3.2N of Moon	26	20	Moon furthest North (25.7)
11	13	Antares 1.1S of Moon Occn	27	8	Mercury greatest elong W(25)
11	21	Venus superior conjunction	27	19	Mars nearest to Earth
12	8	Moon furthest South (-25.7)	29	19	Mars at opposition
13	16	Mercury 4.5N of Moon	30	6	FULL MOON
14	18	Saturn stationary	30	8	Moon at perigee
15	7	NEW MOON Eclipse	31	13	Regulus 3.7N of Moon
15	9	Venus 1.4S of Moon			

February

d	h		d	h	
4	6	Spica 3.2N of Moon	15	1	Jupiter 4.6S of Moon
5	23	LAST QUARTER	16	14	Uranus 5.4S of Moon
7	19	Antares 1.2S of Moon Occn	17	2	Venus 0.5S of Jupiter
8	5	Venus 1.0S of Neptune	22	0	FIRST QUARTER
8	14	Moon furthest South (-25.7)	23	5	Moon furthest North (25.6)
12	4	Mercury 2.2S of Moon	26	3	Mars 5.2N of Moon
13	1	Moon at apogee	27	13	Mercury 1.7S of Neptune
14	2	NEW MOON	27	20	Moon at perigee
14	4	Neptune 3.4S of Moon	28	0	Regulus 3.8N of Moon
14	20	Venus 5.0S of Moon	28	10	Jupiter at conjunction
14	23	Neptune at conjunction	28	16	FULL MOON

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March

d	h		d	h	
3	16	Spica 3.0N of Moon	15	21	NEW MOON
4	4	Venus 0.6S of Uranus	15	23	Uranus 5.4S of Moon
7	2	Antares 1.3S of Moon	17	6	Uranus at conjunction
7	15	LAST QUARTER	20	17	Equinox
7	21	Moon furthest South (-25.6)	22	0	Saturn at opposition
8	1	Mercury 1.1S of Jupiter	22	11	Moon furthest North (25.4)
11	9	Mars stationary	23	10	FIRST QUARTER
12	10	Moon at apogee	25	12	Mars 4.4N of Moon
13	12	Neptune 3.6S of Moon	27	10	Regulus 3.9N of Moon
14	12	Mercury superior conjunction	28	4	Moon at perigee
14	21	Jupiter 5.0S of Moon	30	2	FULL MOON
15	21	Mercury 0.6S of Uranus	31	2	Spica 2.9N of Moon

April

d	h		d	h	
3	11	Antares 1.5S of Moon	16	10	Venus 4.0S of Moon
4	5	Moon furthest South (-25.3)	18	13	Mercury stationary
6	9	LAST QUARTER	18	17	Moon furthest North (25.2)
7	0	Pluto stationary	21	18	FIRST QUARTER
8	23	Mercury greatest elong E(19)	22	7	Mars 4.4N of Moon
9	3	Moon at apogee	23	18	Regulus 4.1N of Moon
9	21	Neptune 3.8S of Moon	24	20	Moon at perigee
11	17	Jupiter 5.5S of Moon	27	12	Spica 2.9N of Moon
12	9	Uranus 5.4S of Moon	28	12	FULL MOON
14	12	NEW MOON	28	16	Mercury inferior conjunction
15	21	Mercury 1.5S of Moon	30	20	Antares 1.7S of Moon

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May

d	h		d	h	
1	14	Moon furthest South (-25.1)	20	8	Mars 4.8N of Moon
2	20	Pluto 5.9N of Moon	20	8	Moon at perigee
6	4	LAST QUARTER	20	23	FIRST QUARTER
6	22	Moon at apogee	20	23	Regulus 4.2N of Moon
7	6	Neptune 4.0S of Moon	24	19	Spica 3.0N of Moon
9	12	Jupiter 5.9S of Moon	26	3	Mercury greatest elong W(25)
9	20	Uranus 5.6S of Moon	27	23	FULL MOON
11	0	Mercury stationary	28	5	Antares 1.8S of Moon
14	1	NEW MOON	28	22	Moon furthest South (-25.0)
15	23	Moon furthest North (25.1)	30	3	Pluto 5.9N of Moon
16	10	Venus 0.1S of Moon Occn	31	16	Saturn stationary

June

d	h		d	h	
1	1	Neptune stationary	15	17	Mercury 4.5N of Aldebaran
3	14	Neptune 4.2S of Moon	17	5	Regulus 4.3N of Moon
3	17	Moon at apogee	17	14	Mars 5.3N of Moon
4	22	LAST QUARTER	19	4	FIRST QUARTER
6	6	Uranus 5.8S of Moon	21	1	Spica 3.1N of Moon
7	4	Mars 0.8N of Regulus	21	11	Solstice
8	12	Jupiter 0.4S of Uranus	24	12	Antares 1.8S of Moon
8	17	Venus 4.7S of Pollux	25	5	Moon furthest South (-25.0)
11	0	Mercury 5.2S of Moon	25	18	Pluto at opposition
12	7	Moon furthest North (25.0)	26	10	Pluto 5.8N of Moon
12	11	NEW MOON	26	11	FULL MOON Eclipse
15	5	Venus 3.7N of Moon	28	12	Mercury superior conjunction
15	15	Moon at perigee	30	22	Neptune 4.3S of Moon

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July

d	h		d	h	
1	9	Moon at apogee	16	0	Mars 5.6N of Moon
3	14	Uranus 5.9S of Moon	18	7	Spica 3.1N of Moon
4	14	LAST QUARTER	18	10	FIRST QUARTER
6	0	Uranus stationary	21	18	Antares 1.8S of Moon
6	8	Mercury 4.9S of Pollux	22	11	Moon furthest South (-25.0)
6	9	Earth at aphelion	23	15	Pluto 5.8N of Moon
9	16	Moon furthest North (25.0)	24	3	Jupiter stationary
10	11	Venus 1.0N of Regulus	26	1	FULL MOON
11	19	NEW MOON Eclipse	27	21	Mercury 0.3S of Regulus
12	22	Mercury 3.9N of Moon	28	3	Neptune 4.2S of Moon
13	11	Moon at perigee	28	23	Moon at apogee
14	13	Regulus 4.3N of Moon	30	21	Uranus 5.9S of Moon
14	21	Venus 5.4N of Moon	31	8	Mars 1.8S of Saturn

August

d	h		d	h	
3	4	LAST QUARTER	17	23	Antares 1.9S of Moon
6	2	Moon furthest North (24.9)	18	16	Moon furthest South (-24.9)
7	0	Mercury greatest elong E(27)	19	20	Pluto 5.6N of Moon
8	17	Venus 2.7S of Saturn	20	1	Venus greatest elong E(46)
10	3	NEW MOON	20	2	Mercury stationary
10	18	Moon at perigee	20	10	Neptune at opposition
10	22	Regulus 4.3N of Moon	20	19	Venus 2.0S of Mars
11	23	Mercury 2.1N of Moon	24	8	Neptune 4.2S of Moon
13	9	Venus 4.1N of Moon	24	17	FULL MOON
13	13	Mars 5.4N of Moon	25	6	Moon at apogee
14	14	Spica 3.0N of Moon	27	2	Uranus 5.8S of Moon
16	18	FIRST QUARTER			

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September

d	h			d	h	
1	6	Venus 1.0S of Spica		14	6	Antares 2.1S of Moon
1	17	LAST QUARTER		14	23	Moon furthest South (-24.7)
2	10	Moon furthest North (24.8)		15	5	FIRST QUARTER
3	13	Mercury inferior conjunction		16	1	Pluto 5.4N of Moon
5	20	Mars 2.1N of Spica		19	1	Jupiter 0.8S of Uranus
7	9	Regulus 4.3N of Moon		19	19	Mercury greatest elong W(18)
7	21	Mercury 1.5N of Moon		20	13	Neptune 4.2S of Moon
8	4	Moon at perigee		21	8	Moon at apogee
8	10	NEW MOON		21	11	Jupiter at opposition
10	23	Spica 2.8N of Moon		21	16	Uranus at opposition
11	5	Mars 4.7N of Moon		23	3	Equinox
11	12	Venus 0.3N of Moon	Occn	23	5	Uranus 5.7S of Moon
12	2	Mercury stationary		23	9	FULL MOON
14	1	Pluto stationary		29	16	Moon furthest North (24.6)

October

d	h		d	h	
1	0	Saturn at conjunction	13	10	Pluto 5.0N of Moon
1	3	LAST QUARTER	14	21	FIRST QUARTER
4	19	Regulus 4.5N of Moon	17	1	Mercury superior conjunction
6	13	Moon at perigee	17	7	Mercury 2.9N of Spica
7	18	NEW MOON	17	18	Neptune 4.4S of Moon
7	18	Venus stationary	18	18	Moon at apogee
8	10	Spica 2.7N of Moon	20	10	Uranus 5.7S of Moon
8	11	Mercury 0.5S of Saturn	23	1	FULL MOON
9	17	Venus 3.2S of Moon	26	22	Moon furthest North (24.4)
10	0	Mars 3.5N of Moon	29	1	Venus inferior conjunction
11	15	Antares 2.3S of Moon	30	12	LAST QUARTER
12	7	Moon furthest South (-24.5)			

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November

d	h			d	h	
1	3	Regulus 4.7N of Moon		14	2	Neptune 4.6S of Moon
3	17	Moon at perigee		15	11	Moon at apogee
4	20	Spica 2.7N of Moon		15	17	Mercury 2.5N of Antares
5	8	Venus 0.1N of Moon	Occn	16	16	Uranus 5.9S of Moon
6	4	NEW MOON		16	16	Venus stationary
7	3	Mercury 1.7N of Moon		19	5	Jupiter stationary
7	7	Neptune stationary		20	19	Mercury 1.7S of Mars
7	21	Mars 1.7N of Moon		21	17	FULL MOON
8	1	Antares 2.4S of Moon		23	4	Moon furthest North (24.3)
8	17	Moon furthest South (-24.3)		28	9	Regulus 4.8N of Moon
9	20	Pluto 4.7N of Moon		28	20	LAST QUARTER
10	23	Mars 3.9N of Antares		30	18	Moon at perigee
13	16	FIRST QUARTER				

December

d	h			d	h	
1	10	Mercury greatest elong E(21)		13	23	Mercury 1.0N of Mars
2	4	Spica 2.8N of Moon		14	0	Uranus 6.0S of Moon
5	11	Antares 2.5S of Moon		14	4	Mars 5.4S of Pluto
5	17	NEW MOON		20	1	Mercury inferior conjunction
6	2	Moon furthest South (-24.3)		20	12	Moon furthest North (24.2)
6	10	Uranus stationary		21	8	FULL MOON Eclipse
6	21	Mars 0.5S of Moon	Occn	21	23	Solstice
7	7	Pluto 4.4N of Moon		25	12	Moon at perigee
7	8	Mercury 1.7S of Moon		25	15	Regulus 4.8N of Moon
10	7	Mercury stationary		27	1	Pluto at conjunction
11	11	Neptune 4.7S of Moon		28	4	LAST QUARTER
13	8	Moon at apogee		29	10	Spica 2.8N of Moon
13	13	FIRST QUARTER		30	12	Mercury stationary
13	16	Mercury 4.5S of Pluto				

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Phases of the Moon 2010

New Moon		First Quarter		Full Moon		Last Quarter	
d	h	d	h	d	h	d	h
						Jan 7	10.8
Jan 15	7.2	Jan 23	10.8	Jan 30	6.3	Feb 5	23.9
Feb 14	2.9	Feb 22	0.8	Feb 28	16.6	Mar 7	15.8
Mar 15	21.1	Mar 23	11.0	Mar 30	2.5	Apr 6	9.7
Apr 14	12.5	Apr 21	18.3	Apr 28	12.4	May 6	4.3
May 14	1.1	May 20	23.7	May 27	23.1	Jun 4	22.2
Jun 12	11.2	Jun 19	4.5	Jun 26	11.6	Jul 4	14.6
Jul 11	19.6	Jul 18	10.3	Jul 26	1.7	Aug 3	5.0
Aug 10	3.1	Aug 16	18.3	Aug 24	17.1	Sep 1	17.3
Sep 8	10.5	Sep 15	5.9	Sep 23	9.3	Oct 1	3.8
Oct 7	18.8	Oct 14	21.5	Oct 23	1.6	Oct 30	12.7
Nov 6	4.9	Nov 13	16.7	Nov 21	17.4	Nov 28	20.6
Dec 5	17.6	Dec 13	14.0	Dec 21	8.2	Dec 28	4.3

Moon at Perigee 2010

d	h	d	h	d	h	d	h
Jan 2	12	Jan 30	9	Feb 27	21	Mar 28	4
Apr 24	20	May 20	9	Jun 15	15	Jul 13	11
Aug 10	18	Sep 8	4	Oct 6	14	Nov 3	17
Nov 30	18	Dec 25	13				

Moon at Apogee 2010

d	h	d	h	d	h	d	h
Jan 17	1	Feb 13	2	Mar 12	10	Apr 9	4
May 6	23	Jun 3	17	Jul 1	10	Jul 28	23
Aug 25	6	Sep 21	8	Oct 18	18	Nov 15	11
Dec 13	8						

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Local Time of MOONRISE 2010

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	17.50	20.36	19.24	21.56	22.45	23.12	22.26	22.00	22.30	23.28	0.55	2.22
2	19.10	21.52	20.40	23.04	23.32	23.38	22.47	22.29	23.26	.....	2.08	3.35
3	20.29	23.05	21.55	.....	.....	.....	23.09	23.04	.....	0.41	3.23	4.49
4	21.45	.....	23.08	0.04	0.12	0.00	23.32	23.47	0.32	1.56	4.38	6.01
5	22.58	0.16	.....	0.56	0.44	0.22	23.59	.....	1.45	3.12	5.54	7.08
6	.....	1.25	0.17	1.39	1.11	0.44	.....	0.39	3.02	4.29	7.09	8.10
7	0.10	2.30	1.20	2.15	1.36	1.06	0.30	1.42	4.20	5.46	8.24	9.01
8	1.20	3.29	2.16	2.44	1.58	1.31	1.09	2.54	5.39	7.04	9.29	9.43
9	2.28	4.21	3.03	3.10	2.19	2.00	1.58	4.11	7.01	8.24	10.24	10.17
10	3.35	5.05	3.42	3.33	2.41	2.36	2.57	5.31	8.19	9.38	11.10	10.46
11	4.37	5.42	4.15	3.55	3.05	3.19	4.05	6.54	9.35	10.46	11.48	11.12
12	5.34	6.13	4.43	4.17	3.32	4.13	5.25	8.11	10.49	11.45	12.19	11.35
13	6.23	6.39	5.07	4.39	4.03	5.20	6.43	9.27	11.59	12.35	12.46	11.57
14	7.05	7.03	5.30	5.04	4.42	6.32	8.01	10.42	13.01	13.16	13.10	12.19
15	7.40	7.25	5.51	5.32	5.31	7.47	9.17	11.56	13.55	13.50	13.32	12.43
16	8.10	7.46	6.13	6.06	6.28	9.03	10.32	13.06	14.40	14.19	13.54	13.09
17	8.36	8.07	6.36	6.47	7.35	10.18	11.45	14.11	15.18	14.44	14.17	13.40
18	8.58	8.30	7.01	7.37	8.46	11.31	12.57	15.09	15.49	15.07	14.42	14.17
19	9.19	8.55	7.29	8.36	10.00	12.43	14.07	15.59	16.16	15.29	15.10	15.01
20	9.40	9.26	8.04	9.43	11.14	13.54	15.15	16.41	16.41	15.51	15.43	15.55
21	10.01	10.03	8.47	10.55	12.27	15.05	16.17	17.17	17.03	16.15	16.23	16.58
22	10.25	10.49	9.39	12.09	13.40	16.15	17.13	17.47	17.25	16.41	17.11	18.08
23	10.52	11.46	10.41	13.23	14.51	17.22	18.01	18.13	17.47	17.10	18.08	19.21
24	11.25	12.53	11.51	14.37	16.04	18.23	18.41	18.36	18.11	17.45	19.12	20.35
25	12.07	14.08	13.06	15.51	17.16	19.17	19.15	18.58	18.37	18.27	20.22	21.48
26	12.59	15.27	14.22	17.05	18.26	20.03	19.43	19.19	19.07	19.17	21.33	23.01
27	14.04	16.47	15.39	18.19	19.33	20.41	20.08	19.41	19.43	20.15	22.45	.....
28	15.18	18.06	16.56	19.33	20.33	21.13	20.31	20.05	20.27	21.20	23.57	0.13
29	16.38	.....	18.12	20.43	21.24	21.40	20.52	20.32	21.19	22.30	.....	1.25
30	17.59	.....	19.28	21.48	22.07	22.04	21.13	21.04	22.20	23.42	1.09	2.37
31	19.19	.....	20.43	.....	22.43	.....	21.36	21.43	.....	.....	.....	3.48

```
.....  No phenomena occurs on this date
-----  Moon continuously below the horizon
*****  Moon continuously above the horizon
```

http://digilander.libero.it/occultazioni

Local Time of MOONSET 2010

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	8.12	8.23	6.47	6.44	6.48	8.34	9.26	11.16	13.19	13.52	14.10	13.37
2	8.54	8.50	7.15	7.23	7.44	9.36	10.25	12.19	14.18	14.33	14.38	14.08
3	9.28	9.16	7.43	8.08	8.44	10.37	11.25	13.23	15.11	15.09	15.06	14.45
4	9.57	9.44	8.14	8.59	9.45	11.37	12.25	14.28	15.58	15.41	15.37	15.28
5	10.24	10.15	8.49	9.56	10.47	12.36	13.28	15.31	16.38	16.10	16.12	16.19
6	10.49	10.51	9.29	10.56	11.48	13.37	14.32	16.30	17.13	16.39	16.52	17.19
7	11.15	11.33	10.16	11.58	12.49	14.39	15.39	17.23	17.44	17.09	17.41	18.21
8	11.42	12.21	11.09	12.59	13.48	15.44	16.45	18.07	18.14	17.42	18.35	19.25
9	12.14	13.15	12.06	13.59	14.49	16.50	17.49	18.46	18.44	18.20	19.35	20.29
10	12.51	14.13	13.06	15.00	15.51	17.58	18.46	19.18	19.15	19.04	20.38	21.31
11	13.34	15.13	14.07	16.00	16.54	19.05	19.35	19.49	19.49	19.54	21.42	22.32
12	14.24	16.15	15.08	17.01	18.01	20.06	20.17	20.17	20.27	20.50	22.44	23.31
13	15.20	17.16	16.09	18.04	19.09	21.00	20.51	20.46	21.12	21.50	23.45	.....
14	16.19	18.16	17.09	19.08	20.16	21.44	21.21	21.16	22.04	22.52	.....	0.30
15	17.21	19.19	18.09	20.18	21.22	22.21	21.49	21.51	23.00	23.54	0.44	1.30
16	18.25	20.19	19.11	21.25	22.19	22.52	22.16	22.31	.....	.....	1.43	2.30
17	19.26	21.21	20.17	22.30	23.06	23.19	22.44	23.17	0.00	0.55	2.42	3.33
18	20.26	22.24	21.21	23.30	23.46	23.46	23.15	.....	1.01	1.55	3.43	4.37
19	21.26	23.29	22.28	.....	.....	.....	23.50	0.09	2.03	2.54	4.45	5.40
20	22.26	.....	23.34	0.23	0.19	0.12	.....	1.06	3.03	3.53	5.49	6.42
21	23.28	0.36	.....	1.07	0.48	0.41	0.31	2.06	4.03	4.53	6.53	7.38
22	.....	1.42	0.37	1.44	1.15	1.12	1.19	3.08	5.02	5.54	7.56	8.27
23	0.33	2.45	1.35	2.16	1.41	1.49	2.13	4.09	6.01	6.57	8.55	9.09
24	1.40	3.42	2.25	2.45	2.08	2.33	3.11	5.10	7.01	8.01	9.47	9.45
25	2.49	4.31	3.08	3.12	2.38	3.23	4.13	6.09	8.03	9.04	10.32	10.16
26	3.57	5.13	3.44	3.39	3.12	4.19	5.15	7.08	9.05	10.05	11.10	10.45
27	5.00	5.48	4.16	4.07	3.52	5.20	6.16	8.08	10.09	11.01	11.43	11.12
28	5.56	6.19	4.45	4.39	4.38	6.22	7.17	9.08	11.11	11.50	12.13	11.40
29	6.43	.....	5.12	5.16	5.31	7.25	8.16	10.10	12.10	12.32	12.40	12.10
30	7.22	.....	5.40	5.58	6.30	8.26	9.16	11.13	13.04	13.08	13.08	12.44
31	7.54	.....	6.10	.....	7.32	.....	10.15	12.16	.....	13.40	.....	13.24

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   .....  No phenomena occurs on this date
   -----  Moon continuously below the horizon
   *****  Moon continuously above the horizon
```

http://digilander.libero.it/occultazioni

Local time of Rise and Set

Date	Sun		Mercury		Venus		Mars		Jupiter		Saturn		Uranus		Neptune	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
2010 Jan 1	7 41	16 53	8 7	17 39	7 34	16 38	19 44	10 16	10 14	20 42	23 46	11 56	11 17	23 0	10 7	20 34
2010 Jan 2	7 41	16 54	7 58	17 31	7 36	16 39	19 39	10 12	10 11	20 39	23 42	11 52	11 13	22 56	10 3	20 30
2010 Jan 3	7 41	16 55	7 48	17 22	7 37	16 41	19 34	10 8	10 7	20 36	23 38	11 48	11 9	22 52	9 59	20 26
2010 Jan 4	7 41	16 56	7 38	17 13	7 38	16 43	19 29	10 3	10 4	20 33	23 34	11 44	11 5	22 49	9 55	20 22
2010 Jan 5	7 41	16 57	7 28	17 4	7 40	16 45	19 24	9 59	10 0	20 30	23 30	11 40	11 1	22 45	9 52	20 18
2010 Jan 6	7 41	16 58	7 18	16 54	7 41	16 47	19 19	9 55	9 57	20 27	23 26	11 37	10 57	22 41	9 48	20 15
2010 Jan 7	7 41	16 59	7 8	16 45	7 42	16 49	19 14	9 50	9 54	20 24	23 22	11 33	10 53	22 37	9 44	20 11
2010 Jan 8	7 41	17 0	6 59	16 36	7 43	16 51	19 8	9 46	9 50	20 22	23 19	11 29	10 49	22 33	9 40	20 7
2010 Jan 9	7 41	17 1	6 50	16 27	7 44	16 53	19 3	9 41	9 47	20 19	23 15	11 25	10 45	22 30	9 36	20 3
2010 Jan 10	7 41	17 2	6 42	16 19	7 44	16 55	18 57	9 37	9 43	20 16	23 11	11 21	10 42	22 26	9 32	19 59
2010 Jan 11	7 40	17 3	6 35	16 11	7 45	16 57	18 52	9 32	9 40	20 13	23 7	11 17	10 38	22 22	9 28	19 56
2010 Jan 12	7 40	17 4	6 28	16 4	7 46	16 59	18 46	9 28	9 37	20 10	23 3	11 13	10 34	22 18	9 24	19 52
2010 Jan 13	7 40	17 5	6 23	15 58	7 47	17 2	18 41	9 23	9 33	20 7	22 59	11 9	10 30	22 14	9 21	19 48
2010 Jan 14	7 39	17 6	6 18	15 52	7 47	17 4	18 35	9 19	9 30	20 5	22 55	11 5	10 26	22 11	9 17	19 44
2010 Jan 15	7 39	17 7	6 14	15 47	7 48	17 6	18 29	9 14	9 26	20 2	22 51	11 1	10 22	22 7	9 13	19 41
2010 Jan 16	7 38	17 8	6 10	15 42	7 48	17 9	18 23	9 9	9 23	19 59	22 47	10 57	10 18	22 3	9 9	19 37
2010 Jan 17	7 38	17 10	6 7	15 38	7 49	17 11	18 17	9 5	9 19	19 56	22 43	10 53	10 14	21 59	9 5	19 33
2010 Jan 18	7 37	17 11	6 5	15 34	7 49	17 13	18 11	9 0	9 16	19 53	22 39	10 49	10 11	21 56	9 1	19 29
2010 Jan 19	7 37	17 12	6 3	15 31	7 49	17 16	18 5	8 55	9 13	19 51	22 35	10 46	10 7	21 52	8 57	19 25
2010 Jan 20	7 36	17 13	6 2	15 29	7 50	17 18	17 59	8 50	9 9	19 48	22 31	10 42	10 3	21 48	8 53	19 22
2010 Jan 21	7 36	17 14	6 1	15 27	7 50	17 21	17 53	8 45	9 6	19 45	22 27	10 38	9 59	21 44	8 50	19 18
2010 Jan 22	7 35	17 16	6 0	15 25	7 50	17 23	17 47	8 40	9 2	19 42	22 23	10 34	9 55	21 41	8 46	19 14
2010 Jan 23	7 34	17 17	6 0	15 24	7 50	17 26	17 41	8 35	8 59	19 39	22 19	10 30	9 51	21 37	8 42	19 10
2010 Jan 24	7 34	17 18	6 0	15 23	7 50	17 28	17 35	8 30	8 56	19 37	22 15	10 26	9 47	21 33	8 38	19 7
2010 Jan 25	7 33	17 19	6 0	15 22	7 50	17 31	17 33	8 29	8 52	19 34	22 11	10 22	9 44	21 29	8 34	19 3
2010 Jan 26	7 32	17 21	6 1	15 22	7 50	17 33	17 27	8 24	8 49	19 31	22 7	10 18	9 40	21 26	8 30	18 59
2010 Jan 27	7 31	17 22	6 2	15 22	7 50	17 36	17 21	8 19	8 46	19 28	22 3	10 14	9 36	21 22	8 26	18 55
2010 Jan 28	7 30	17 23	6 2	15 22	7 50	17 38	17 15	8 14	8 42	19 26	21 58	10 10	9 32	21 18	8 23	18 52
2010 Jan 29	7 29	17 25	6 3	15 22	7 49	17 41	17 8	8 9	8 39	19 23	21 54	10 6	9 28	21 14	8 19	18 48

Local time of Rise and Set

Date	Sun		Mercury		Venus		Mars		Jupiter		Saturn		Uranus		Neptune	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
2010 Jan 30	7 28	17 26	6 4	15 23	7 49	17 43	17 2	8 4	8 35	19 20	21 50	10 2	9 24	21 11	8 15	18 44
2010 Jan 31	7 27	17 27	6 5	15 24	7 49	17 46	16 56	7 59	8 32	19 17	21 46	9 58	9 20	21 7	8 11	18 40
2010 Feb 1	7 26	17 28	6 7	15 25	7 48	17 48	16 50	7 54	8 29	19 15	21 42	9 54	9 17	21 3	8 7	18 36
2010 Feb 2	7 25	17 30	6 8	15 26	7 48	17 51	16 44	7 49	8 25	19 12	21 38	9 50	9 13	20 59	8 3	18 33
2010 Feb 3	7 24	17 31	6 9	15 28	7 47	17 54	16 38	7 44	8 22	19 9	21 34	9 46	9 9	20 56	7 59	18 29
2010 Feb 4	7 23	17 32	6 11	15 30	7 47	17 56	16 32	7 39	8 18	19 6	21 30	9 42	9 5	20 52	7 56	18 25
2010 Feb 5	7 22	17 34	6 12	15 32	7 46	17 59	16 26	7 33	8 15	19 4	21 25	9 38	9 1	20 48	7 52	18 21
2010 Feb 6	7 21	17 35	6 13	15 34	7 46	18 1	16 20	7 28	8 12	19 1	21 21	9 34	8 57	20 45	7 48	18 18
2010 Feb 7	7 20	17 36	6 14	15 36	7 45	18 4	16 14	7 23	8 8	18 58	21 17	9 30	8 53	20 41	7 44	18 14
2010 Feb 8	7 19	17 37	6 16	15 39	7 45	18 6	16 8	7 18	8 5	18 55	21 13	9 26	8 50	20 37	7 40	18 10
2010 Feb 9	7 17	17 39	6 17	15 41	7 44	18 9	16 2	7 13	8 2	18 53	21 9	9 22	8 46	20 34	7 36	18 6
2010 Feb 10	7 16	17 40	6 18	15 44	7 43	18 12	15 56	7 8	7 58	18 50	21 5	9 18	8 42	20 30	7 32	18 3
2010 Feb 11	7 15	17 41	6 20	15 47	7 42	18 14	15 51	7 3	7 55	18 47	21 0	9 14	8 38	20 26	7 29	17 59
2010 Feb 12	7 14	17 43	6 21	15 50	7 41	18 17	15 45	6 58	7 51	18 45	20 56	9 10	8 34	20 22	7 25	17 55
2010 Feb 13	7 12	17 44	6 22	15 53	7 41	18 19	15 39	6 53	7 48	18 42	20 52	9 5	8 30	20 19	7 21	17 51
2010 Feb 14	7 11	17 45	6 23	15 56	7 40	18 22	15 34	6 48	7 45	18 39	20 48	9 1	8 27	20 15	7 17	17 48
2010 Feb 15	7 10	17 46	6 24	16 0	7 39	18 24	15 28	6 43	7 41	18 36	20 43	8 57	8 23	20 11	7 13	17 44
2010 Feb 16	7 8	17 48	6 25	16 3	7 38	18 27	15 23	6 38	7 38	18 34	20 39	8 53	8 19	20 8	7 9	17 40
2010 Feb 17	7 7	17 49	6 26	16 7	7 37	18 29	15 17	6 33	7 35	18 31	20 35	8 49	8 15	20 4	7 5	17 36
2010 Feb 18	7 6	17 50	6 27	16 11	7 36	18 32	15 12	6 28	7 31	18 28	20 31	8 45	8 11	20 0	7 2	17 33
2010 Feb 19	7 4	17 51	6 28	16 15	7 35	18 34	15 7	6 23	7 28	18 26	20 26	8 41	8 7	19 57	6 58	17 29
2010 Feb 20	7 3	17 53	6 29	16 19	7 34	18 37	15 2	6 18	7 24	18 23	20 22	8 37	8 4	19 53	6 54	17 25
2010 Feb 21	7 1	17 54	6 30	16 23	7 33	18 40	14 56	6 13	7 21	18 20	20 18	8 33	8 0	19 49	6 50	17 21
2010 Feb 22	7 0	17 55	6 30	16 27	7 32	18 42	14 51	6 8	7 18	18 17	20 14	8 29	7 56	19 46	6 46	17 18
2010 Feb 23	6 58	17 56	6 31	16 32	7 31	18 45	14 46	6 3	7 14	18 15	20 9	8 25	7 52	19 42	6 42	17 14
2010 Feb 24	6 57	17 58	6 32	16 36	7 30	18 47	14 42	5 59	7 11	18 12	20 5	8 21	7 48	19 38	6 38	17 10
2010 Feb 25	6 55	17 59	6 32	16 41	7 28	18 50	14 37	5 54	7 7	18 9	20 1	8 17	7 44	19 35	6 35	17 6
2010 Feb 26	6 54	18 0	6 33	16 45	7 27	18 52	14 32	5 49	7 4	18 7	19 57	8 13	7 41	19 31	6 31	17 3
2010 Feb 27	6 52	18 1	6 33	16 50	7 26	18 54	14 27	5 45	7 1	18 4	19 52	8 8	7 37	19 27	6 27	16 59

Local time of Rise and Set

Date	Sun		Mercury		Venus		Mars		Jupiter		Saturn		Uranus		Neptune	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
2010 Feb 28	6 50	18 3	6 34	16 55	7 25	18 57	14 23	5 40	6 57	18 1	19 48	8 4	7 33	19 24	6 23	16 55
2010 Mar 1	6 49	18 4	6 34	17 0	7 24	18 59	14 18	5 36	6 54	17 58	19 44	8 0	7 29	19 20	6 19	16 51
2010 Mar 2	6 47	18 5	6 34	17 5	7 23	19 2	14 14	5 31	6 51	17 56	19 39	7 56	7 25	19 16	6 15	16 48
2010 Mar 3	6 46	18 6	6 35	17 10	7 21	19 4	14 9	5 27	6 47	17 53	19 35	7 52	7 21	19 13	6 12	16 44
2010 Mar 4	6 44	18 7	6 35	17 15	7 20	19 7	14 5	5 22	6 44	17 50	19 31	7 48	7 18	19 9	6 8	16 40
2010 Mar 5	6 42	18 9	6 35	17 20	7 19	19 9	14 1	5 18	6 40	17 48	19 26	7 44	7 14	19 5	6 4	16 36
2010 Mar 6	6 41	18 10	6 35	17 26	7 18	19 12	13 57	5 13	6 37	17 45	19 22	7 40	7 10	19 2	6 0	16 32
2010 Mar 7	6 39	18 11	6 35	17 31	7 16	19 14	13 53	5 9	6 34	17 42	19 18	7 36	7 6	18 58	5 56	16 29
2010 Mar 8	6 37	18 12	6 35	17 37	7 15	19 17	13 48	5 5	6 30	17 39	19 13	7 32	7 2	18 54	5 52	16 25
2010 Mar 9	6 36	18 13	6 35	17 43	7 14	19 19	13 45	5 0	6 27	17 37	19 9	7 27	6 58	18 51	5 48	16 21
2010 Mar 10	6 34	18 14	6 36	17 48	7 13	19 22	13 41	4 56	6 24	17 34	19 5	7 23	6 55	18 47	5 44	16 17
2010 Mar 11	6 32	18 16	6 36	17 54	7 11	19 24	13 37	4 52	6 20	17 31	19 0	7 19	6 51	18 43	5 41	16 14
2010 Mar 12	6 31	18 17	6 36	18 0	7 10	19 26	13 33	4 48	6 17	17 29	18 56	7 15	6 47	18 40	5 37	16 10
2010 Mar 13	6 29	18 18	6 35	18 6	7 9	19 29	13 29	4 44	6 13	17 26	18 52	7 11	6 43	18 36	5 33	16 6
2010 Mar 14	6 27	18 19	6 35	18 12	7 7	19 31	13 26	4 40	6 10	17 23	18 51	7 11	6 39	18 32	5 29	16 2
2010 Mar 15	6 26	18 20	6 35	18 19	7 6	19 34	13 22	4 36	6 7	17 20	18 47	7 7	6 35	18 29	5 25	15 59
2010 Mar 16	6 24	18 21	6 35	18 25	7 5	19 36	13 19	4 32	6 3	17 18	18 42	7 3	6 32	18 25	5 21	15 55
2010 Mar 17	6 22	18 23	6 35	18 31	7 4	19 39	13 15	4 28	6 0	17 15	18 38	6 58	6 28	18 21	5 17	15 51
2010 Mar 18	6 21	18 24	6 35	18 38	7 2	19 41	13 12	4 24	5 56	17 12	18 34	6 54	6 24	18 18	5 14	15 47
2010 Mar 19	6 19	18 25	6 35	18 44	7 1	19 44	13 8	4 20	5 53	17 10	18 29	6 50	6 20	18 14	5 10	15 43
2010 Mar 20	6 17	18 26	6 35	18 51	7 0	19 46	13 5	4 16	5 50	17 7	18 25	6 46	6 16	18 10	5 6	15 40
2010 Mar 21	6 15	18 27	6 34	18 57	6 59	19 48	13 2	4 13	5 46	17 4	18 21	6 42	6 13	18 7	5 2	15 36
2010 Mar 22	6 14	18 28	6 34	19 4	6 57	19 51	12 59	4 9	5 43	17 1	18 16	6 38	6 9	18 3	4 58	15 32
2010 Mar 23	6 12	18 29	6 34	19 10	6 56	19 53	12 56	4 5	5 39	16 59	18 12	6 34	6 5	17 59	4 54	15 28
2010 Mar 24	6 10	18 30	6 34	19 17	6 55	19 56	12 52	4 1	5 36	16 56	18 8	6 30	6 1	17 56	4 50	15 25
2010 Mar 25	6 8	18 32	6 33	19 24	6 54	19 58	12 49	3 58	5 33	16 53	18 3	6 25	5 57	17 52	4 46	15 21
2010 Mar 26	6 7	18 33	6 33	19 30	6 53	20 1	12 46	3 54	5 29	16 50	17 59	6 21	5 53	17 48	4 43	15 17
2010 Mar 27	6 5	18 34	6 32	19 36	6 51	20 3	12 44	3 51	5 26	16 48	17 55	6 17	5 50	17 45	4 39	15 13
2010 Mar 28	6 3	18 35	6 32	19 43	6 50	20 6	12 41	3 47	5 22	16 45	17 50	6 13	5 46	17 41	4 35	15 9

Local time of Rise and Set

Date	Sun		Mercury		Venus		Mars		Jupiter		Saturn		Uranus		Neptune	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
2010 Mar 29	6 2	18 36	6 31	19 49	6 49	20 8	12 38	3 44	5 19	16 42	17 46	6 9	5 42	17 37	4 31	15 6
2010 Mar 30	6 0	18 37	6 31	19 54	6 48	20 11	12 35	3 40	5 16	16 39	17 42	6 5	5 38	17 34	4 27	15 2
2010 Mar 31	5 58	18 38	6 30	20 0	6 47	20 13	12 32	3 37	5 12	16 37	17 37	6 1	5 34	17 30	4 23	14 58
2010 Apr 1	5 56	18 39	6 29	20 5	6 46	20 16	12 30	3 33	5 9	16 34	17 33	5 57	5 30	17 26	4 19	14 54
2010 Apr 2	5 55	18 41	6 28	20 10	6 45	20 18	12 27	3 30	5 5	16 31	17 28	5 52	5 27	17 23	4 16	14 50
2010 Apr 3	5 53	18 42	6 27	20 15	6 44	20 21	12 24	3 26	5 2	16 28	17 24	5 48	5 23	17 19	4 12	14 47
2010 Apr 4	5 51	18 43	6 26	20 19	6 43	20 23	12 22	3 23	4 58	16 26	17 20	5 44	5 19	17 15	4 8	14 43
2010 Apr 5	5 50	18 44	6 24	20 23	6 42	20 26	12 19	3 20	4 55	16 23	17 15	5 40	5 15	17 12	4 4	14 39
2010 Apr 6	5 48	18 45	6 23	20 26	6 41	20 28	12 17	3 16	4 52	16 20	17 11	5 36	5 11	17 8	4 0	14 35
2010 Apr 7	5 46	18 46	6 21	20 29	6 40	20 31	12 14	3 13	4 48	16 17	17 7	5 32	5 7	17 4	3 56	14 31
2010 Apr 8	5 45	18 47	6 20	20 31	6 39	20 33	12 12	3 10	4 45	16 14	17 2	5 28	5 4	17 1	3 52	14 28
2010 Apr 9	5 43	18 48	6 18	20 33	6 38	20 36	12 10	3 6	4 41	16 12	16 58	5 24	5 0	16 57	3 48	14 24
2010 Apr 10	5 41	18 49	6 16	20 34	6 37	20 38	12 7	3 3	4 38	16 9	16 54	5 19	4 56	16 53	3 44	14 20
2010 Apr 11	5 40	18 51	6 13	20 35	6 36	20 41	12 5	3 0	4 34	16 6	16 50	5 15	4 52	16 50	3 41	14 16
2010 Apr 12	5 38	18 52	6 11	20 35	6 35	20 44	12 3	2 57	4 31	16 3	16 45	5 11	4 48	16 46	3 37	14 12
2010 Apr 13	5 36	18 53	6 8	20 34	6 34	20 46	12 0	2 54	4 28	16 0	16 41	5 7	4 44	16 42	3 33	14 8
2010 Apr 14	5 35	18 54	6 5	20 33	6 34	20 49	11 58	2 50	4 24	15 57	16 37	5 3	4 41	16 39	3 29	14 5
2010 Apr 15	5 33	18 55	6 2	20 31	6 33	20 51	11 56	2 47	4 21	15 55	16 32	4 59	4 37	16 35	3 25	14 1
2010 Apr 16	5 32	18 56	5 59	20 28	6 32	20 54	11 54	2 44	4 17	15 52	16 28	4 55	4 33	16 31	3 21	13 57
2010 Apr 17	5 30	18 57	5 56	20 25	6 32	20 56	11 52	2 41	4 14	15 49	16 24	4 51	4 29	16 28	3 17	13 53
2010 Apr 18	5 28	18 58	5 53	20 21	6 31	20 59	11 50	2 38	4 10	15 46	16 19	4 47	4 25	16 24	3 13	13 49
2010 Apr 19	5 27	18 59	5 49	20 17	6 31	21 1	11 48	2 35	4 7	15 43	16 15	4 42	4 21	16 20	3 9	13 45
2010 Apr 20	5 25	19 1	5 45	20 12	6 30	21 4	11 46	2 32	4 3	15 40	16 11	4 38	4 18	16 16	3 6	13 42
2010 Apr 21	5 24	19 2	5 41	20 7	6 30	21 6	11 44	2 29	4 0	15 38	16 7	4 34	4 14	16 13	3 2	13 38
2010 Apr 22	5 22	19 3	5 37	20 1	6 29	21 9	11 42	2 26	3 57	15 35	16 2	4 30	4 10	16 9	2 58	13 34
2010 Apr 23	5 21	19 4	5 33	19 54	6 29	21 11	11 40	2 23	3 53	15 32	15 58	4 26	4 6	16 5	2 54	13 30
2010 Apr 24	5 19	19 5	5 29	19 47	6 29	21 14	11 38	2 20	3 50	15 29	15 54	4 22	4 2	16 2	2 50	13 26
2010 Apr 25	5 18	19 6	5 25	19 40	6 28	21 16	11 36	2 17	3 46	15 26	15 50	4 18	3 58	15 58	2 46	13 22
2010 Apr 26	5 16	19 7	5 21	19 32	6 28	21 19	11 34	2 14	3 43	15 23	15 45	4 14	3 55	15 54	2 42	13 18

Local time of Rise and Set

Date	Sun		Mercury		Venus		Mars		Jupiter		Saturn		Uranus		Neptune	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
2010 Apr 27	5 15	19 8	5 16	19 25	6 28	21 21	11 32	2 11	3 39	15 20	15 41	4 10	3 51	15 51	2 38	13 15
2010 Apr 28	5 13	19 9	5 12	19 17	6 28	21 23	11 30	2 8	3 36	15 17	15 37	4 6	3 47	15 47	2 34	13 11
2010 Apr 29	5 12	19 11	5 8	19 9	6 28	21 26	11 29	2 5	3 32	15 14	15 33	4 2	3 43	15 43	2 30	13 7
2010 Apr 30	5 11	19 12	5 3	19 0	6 28	21 28	11 27	2 2	3 29	15 12	15 29	3 57	3 39	15 39	2 27	13 3
2010 May 1	5 9	19 13	4 59	18 52	6 28	21 31	11 25	1 59	3 25	15 9	15 24	3 53	3 35	15 36	2 23	12 59
2010 May 2	5 8	19 14	4 55	18 44	6 28	21 33	11 23	1 56	3 22	15 6	15 20	3 49	3 31	15 32	2 19	12 55
2010 May 3	5 7	19 15	4 51	18 37	6 28	21 35	11 22	1 53	3 18	15 3	15 16	3 45	3 28	15 28	2 15	12 51
2010 May 4	5 5	19 16	4 47	18 29	6 28	21 37	11 20	1 50	3 15	15 0	15 12	3 41	3 24	15 25	2 11	12 48
2010 May 5	5 4	19 17	4 43	18 22	6 28	21 40	11 18	1 47	3 11	14 57	15 8	3 37	3 20	15 21	2 7	12 44
2010 May 6	5 3	19 18	4 39	18 15	6 29	21 42	11 17	1 44	3 8	14 54	15 3	3 33	3 16	15 17	2 3	12 40
2010 May 7	5 2	19 19	4 36	18 8	6 29	21 44	11 15	1 42	3 4	14 51	14 59	3 29	3 12	15 13	1 59	12 36
2010 May 8	5 0	19 20	4 32	18 2	6 30	21 46	11 13	1 39	3 1	14 48	14 55	3 25	3 8	15 10	1 55	12 32
2010 May 9	4 59	19 21	4 29	17 56	6 30	21 48	11 12	1 36	2 57	14 45	14 51	3 21	3 5	15 6	1 51	12 28
2010 May 10	4 58	19 22	4 25	17 51	6 31	21 50	11 10	1 33	2 54	14 42	14 47	3 17	3 1	15 2	1 47	12 24
2010 May 11	4 57	19 24	4 22	17 46	6 31	21 52	11 9	1 30	2 50	14 39	14 43	3 13	2 57	14 58	1 43	12 20
2010 May 12	4 56	19 25	4 19	17 41	6 32	21 54	11 7	1 27	2 47	14 36	14 39	3 9	2 53	14 55	1 40	12 16
2010 May 13	4 55	19 26	4 16	17 37	6 33	21 56	11 5	1 24	2 43	14 33	14 35	3 5	2 49	14 51	1 36	12 13
2010 May 14	4 54	19 27	4 13	17 34	6 33	21 58	11 4	1 22	2 40	14 30	14 30	3 1	2 45	14 47	1 32	12 9
2010 May 15	4 53	19 28	4 11	17 30	6 34	22 0	11 3	1 19	2 36	14 27	14 26	2 57	2 41	14 43	1 28	12 5
2010 May 16	4 52	19 29	4 8	17 28	6 35	22 2	11 1	1 16	2 33	14 24	14 22	2 53	2 37	14 40	1 24	12 1
2010 May 17	4 51	19 30	4 5	17 25	6 36	22 3	11 0	1 13	2 29	14 21	14 18	2 49	2 34	14 36	1 20	11 57
2010 May 18	4 50	19 31	4 3	17 23	6 37	22 5	10 58	1 10	2 26	14 18	14 14	2 45	2 30	14 32	1 16	11 53
2010 May 19	4 49	19 32	4 1	17 21	6 38	22 7	10 57	1 7	2 22	14 15	14 10	2 41	2 26	14 28	1 12	11 49
2010 May 20	4 48	19 33	3 59	17 20	6 40	22 8	10 55	1 5	2 18	14 12	14 6	2 37	2 22	14 25	1 8	11 45
2010 May 21	4 47	19 34	3 56	17 19	6 41	22 10	10 54	1 2	2 15	14 9	14 2	2 33	2 18	14 21	1 4	11 41
2010 May 22	4 46	19 35	3 54	17 19	6 42	22 11	10 53	0 59	2 11	14 5	13 58	2 29	2 14	14 17	1 0	11 37
2010 May 23	4 45	19 36	3 53	17 19	6 43	22 12	10 51	0 56	2 8	14 2	13 54	2 25	2 10	14 13	0 56	11 33
2010 May 24	4 45	19 37	3 51	17 19	6 45	22 14	10 50	0 53	2 4	13 59	13 50	2 21	2 6	14 9	0 52	11 29
2010 May 25	4 44	19 37	3 49	17 19	6 46	22 15	10 48	0 51	2 1	13 56	13 46	2 17	2 3	14 6	0 48	11 26

Local time of Rise and Set

Date	Sun		Mercury		Venus		Mars		Jupiter		Saturn		Uranus		Neptune	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
2010 May 26	4 43	19 38	3 47	17 20	6 48	22 16	10 47	0 48	1 57	13 53	13 42	2 13	1 59	14 2	0 44	11 22
2010 May 27	4 43	19 39	3 46	17 21	6 49	22 17	10 46	0 45	1 53	13 50	13 38	2 9	1 55	13 58	0 40	11 18
2010 May 28	4 42	19 40	3 45	17 22	6 51	22 18	10 44	0 42	1 50	13 47	13 34	2 5	1 51	13 54	0 37	11 14
2010 May 29	4 41	19 41	3 43	17 24	6 52	22 19	10 43	0 39	1 46	13 43	13 30	2 1	1 47	13 50	0 33	11 10
2010 May 30	4 41	19 42	3 42	17 26	6 54	22 20	10 42	0 37	1 43	13 40	13 26	1 57	1 43	13 47	0 29	11 6
2010 May 31	4 40	19 43	3 41	17 28	6 56	22 21	10 41	0 34	1 39	13 37	13 22	1 53	1 39	13 43	0 25	11 2
2010 Jun 1	4 40	19 43	3 40	17 31	6 58	22 22	10 39	0 31	1 36	13 34	13 18	1 49	1 35	13 39	0 21	10 58
2010 Jun 2	4 39	19 44	3 40	17 34	6 59	22 22	10 38	0 28	1 32	13 31	13 14	1 45	1 32	13 35	0 17	10 54
2010 Jun 3	4 39	19 45	3 39	17 37	7 1	22 23	10 37	0 26	1 28	13 27	13 10	1 41	1 28	13 31	0 13	10 50
2010 Jun 4	4 39	19 46	3 38	17 40	7 3	22 23	10 36	0 23	1 25	13 24	13 6	1 37	1 24	13 28	0 9	10 46
2010 Jun 5	4 38	19 46	3 38	17 44	7 5	22 24	10 34	0 20	1 21	13 21	13 3	1 33	1 20	13 24	0 5	10 42
2010 Jun 6	4 38	19 47	3 38	17 47	7 7	22 24	10 33	0 17	1 17	13 18	12 59	1 29	1 16	13 20	0 1	10 38
2010 Jun 7	4 38	19 48	3 38	17 52	7 9	22 25	10 32	0 15	1 14	13 14	12 55	1 25	1 12	13 16	23 57	10 34
2010 Jun 8	4 37	19 48	3 38	17 56	7 11	22 25	10 31	0 12	1 10	13 11	12 51	1 21	1 8	13 12	23 53	10 30
2010 Jun 9	4 37	19 49	3 38	18 0	7 13	22 25	10 30	0 9	1 7	13 8	12 47	1 17	1 4	13 8	23 49	10 26
2010 Jun 10	4 37	19 50	3 39	18 5	7 15	22 25	10 28	0 6	1 3	13 5	12 43	1 13	1 0	13 4	23 45	10 22
2010 Jun 11	4 37	19 50	3 40	18 10	7 17	22 25	10 27	0 4	0 59	13 1	12 39	1 9	0 56	13 1	23 41	10 18
2010 Jun 12	4 37	19 51	3 40	18 16	7 19	22 25	10 26	0 1	0 56	12 58	12 35	1 5	0 53	12 57	23 37	10 14
2010 Jun 13	4 37	19 51	3 42	18 21	7 21	22 25	10 25	23 58	0 52	12 55	12 32	1 1	0 49	12 53	23 33	10 10
2010 Jun 14	4 36	19 52	3 43	18 27	7 23	22 25	10 24	23 55	0 48	12 51	12 28	0 57	0 45	12 49	23 29	10 6
2010 Jun 15	4 36	19 52	3 45	18 33	7 25	22 25	10 23	23 53	0 45	12 48	12 24	0 54	0 41	12 45	23 25	10 2
2010 Jun 16	4 36	19 52	3 47	18 39	7 28	22 25	10 22	23 50	0 41	12 44	12 20	0 50	0 37	12 41	23 21	9 58
2010 Jun 17	4 37	19 53	3 49	18 45	7 30	22 25	10 20	23 47	0 37	12 41	12 16	0 46	0 33	12 37	23 17	9 54
2010 Jun 18	4 37	19 53	3 51	18 52	7 32	22 24	10 19	23 44	0 34	12 38	12 13	0 42	0 29	12 34	23 13	9 50
2010 Jun 19	4 37	19 53	3 54	18 58	7 34	22 24	10 18	23 42	0 30	12 34	12 9	0 38	0 25	12 30	23 9	9 46
2010 Jun 20	4 37	19 54	3 57	19 5	7 36	22 23	10 17	23 39	0 26	12 31	12 5	0 34	0 21	12 26	23 5	9 42
2010 Jun 21	4 37	19 54	4 1	19 11	7 38	22 23	10 16	23 36	0 22	12 27	12 1	0 30	0 17	12 22	23 1	9 38
2010 Jun 22	4 37	19 54	4 4	19 18	7 41	22 22	10 15	23 33	0 19	12 24	11 57	0 26	0 13	12 18	22 57	9 34
2010 Jun 23	4 38	19 54	4 8	19 25	7 43	22 22	10 14	23 31	0 15	12 20	11 54	0 22	0 9	12 14	22 53	9 30
2010 Jun 24	4 38	19 55	4 13	19 31	7 45	22 21	10 13	23 28	0 11	12 17	11 50	0 18	0 6	12 10	22 50	9 26

Local time of Rise and Set

Date	Sun		Mercury		Venus		Mars		Jupiter		Saturn		Uranus		Neptune	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
2010 Jun 25	4 38	19 55	4 17	19 38	7 47	22 20	10 12	23 25	0 8	12 13	11 46	0 15	0 2	12 6	22 46	9 22
2010 Jun 26	4 38	19 55	4 22	19 44	7 49	22 20	10 11	23 22	0 4	12 10	11 43	0 11	23 58	12 2	22 42	9 18
2010 Jun 27	4 39	19 55	4 27	19 50	7 52	22 19	10 10	23 20	0 0	12 6	11 39	0 7	23 54	11 58	22 38	9 14
2010 Jun 28	4 39	19 55	4 33	19 56	7 54	22 18	10 9	23 17	23 56	12 3	11 35	0 3	23 50	11 55	22 34	9 10
2010 Jun 29	4 40	19 55	4 38	20 2	7 56	22 17	10 8	23 14	23 53	11 59	11 31	23 59	23 46	11 51	22 30	9 6
2010 Jun 30	4 40	19 55	4 44	20 8	7 58	22 16	10 7	23 12	23 49	11 56	11 28	23 55	23 42	11 47	22 26	9 2
2010 Jul 1	4 41	19 55	4 50	20 13	8 0	22 15	10 6	23 9	23 45	11 52	11 24	23 51	23 38	11 43	22 22	8 58
2010 Jul 2	4 41	19 55	4 56	20 18	8 2	22 14	10 5	23 6	23 41	11 49	11 20	23 48	23 34	11 39	22 18	8 54
2010 Jul 3	4 42	19 54	5 3	20 22	8 4	22 13	10 4	23 3	23 37	11 45	11 17	23 44	23 30	11 35	22 14	8 50
2010 Jul 4	4 42	19 54	5 9	20 26	8 7	22 12	10 3	23 1	23 34	11 41	11 13	23 40	23 26	11 31	22 10	8 46
2010 Jul 5	4 43	19 54	5 15	20 30	8 9	22 11	10 2	22 58	23 30	11 38	11 9	23 36	23 22	11 27	22 6	8 42
2010 Jul 6	4 43	19 54	5 21	20 34	8 11	22 9	10 1	22 55	23 26	11 34	11 6	23 32	23 18	11 23	22 2	8 38
2010 Jul 7	4 44	19 53	5 28	20 37	8 13	22 8	10 0	22 53	23 22	11 30	11 2	23 28	23 14	11 19	21 58	8 34
2010 Jul 8	4 45	19 53	5 34	20 40	8 15	22 7	9 59	22 50	23 18	11 27	10 58	23 24	23 10	11 15	21 54	8 30
2010 Jul 9	4 45	19 53	5 40	20 43	8 17	22 5	9 58	22 47	23 15	11 23	10 55	23 21	23 6	11 11	21 50	8 26
2010 Jul 10	4 46	19 52	5 46	20 45	8 19	22 4	9 57	22 44	23 11	11 19	10 51	23 17	23 2	11 7	21 46	8 22
2010 Jul 11	4 47	19 52	5 53	20 47	8 21	22 3	9 56	22 42	23 7	11 15	10 48	23 13	22 58	11 3	21 42	8 18
2010 Jul 12	4 48	19 51	5 59	20 49	8 23	22 1	9 55	22 39	23 3	11 12	10 44	23 9	22 54	10 59	21 38	8 14
2010 Jul 13	4 48	19 51	6 4	20 50	8 25	22 0	9 54	22 36	22 59	11 8	10 40	23 5	22 51	10 55	21 34	8 9
2010 Jul 14	4 49	19 50	6 10	20 52	8 27	21 58	9 53	22 34	22 55	11 4	10 37	23 2	22 47	10 51	21 30	8 5
2010 Jul 15	4 50	19 50	6 16	20 53	8 29	21 57	9 52	22 31	22 52	11 0	10 33	22 58	22 43	10 47	21 26	8 1
2010 Jul 16	4 51	19 49	6 21	20 53	8 31	21 55	9 51	22 28	22 48	10 56	10 30	22 54	22 39	10 43	21 22	7 57
2010 Jul 17	4 52	19 48	6 27	20 54	8 33	21 54	9 51	22 26	22 44	10 53	10 26	22 50	22 35	10 39	21 18	7 53
2010 Jul 18	4 53	19 48	6 32	20 54	8 35	21 52	9 50	22 23	22 40	10 49	10 22	22 46	22 31	10 35	21 14	7 49
2010 Jul 19	4 53	19 47	6 37	20 54	8 37	21 50	9 49	22 20	22 36	10 45	10 19	22 43	22 27	10 31	21 10	7 45
2010 Jul 20	4 54	19 46	6 42	20 54	8 38	21 49	9 48	22 17	22 32	10 41	10 15	22 39	22 23	10 27	21 6	7 41
2010 Jul 21	4 55	19 45	6 46	20 54	8 40	21 47	9 47	22 15	22 28	10 37	10 12	22 35	22 19	10 23	21 2	7 37
2010 Jul 22	4 56	19 45	6 51	20 54	8 42	21 45	9 46	22 12	22 24	10 33	10 8	22 31	22 15	10 19	20 58	7 33
2010 Jul 23	4 57	19 44	6 55	20 53	8 44	21 43	9 45	22 9	22 20	10 29	10 5	22 27	22 11	10 15	20 54	7 29
2010 Jul 24	4 58	19 43	6 59	20 52	8 46	21 42	9 44	22 7	22 17	10 25	10 1	22 24	22 7	10 11	20 50	7 25

Local time of Rise and Set

Date	Sun		Mercury		Venus		Mars		Jupiter		Saturn		Uranus		Neptune	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
2010 Jul 25	4 59	19 42	7 3	20 51	8 47	21 40	9 44	22 4	22 13	10 21	9 58	22 20	22 3	10 7	20 46	7 21
2010 Jul 26	5 0	19 41	7 7	20 50	8 49	21 38	9 43	22 1	22 9	10 17	9 54	22 16	21 59	10 3	20 42	7 17
2010 Jul 27	5 1	19 40	7 11	20 49	8 51	21 36	9 42	21 59	22 5	10 13	9 51	22 12	21 55	9 59	20 38	7 12
2010 Jul 28	5 2	19 39	7 14	20 48	8 53	21 34	9 41	21 56	22 1	10 9	9 47	22 8	21 51	9 55	20 34	7 8
2010 Jul 29	5 3	19 38	7 17	20 46	8 54	21 32	9 40	21 53	21 57	10 5	9 44	22 5	21 47	9 51	20 30	7 4
2010 Jul 30	5 4	19 37	7 21	20 45	8 56	21 31	9 39	21 51	21 53	10 1	9 40	22 1	21 43	9 47	20 25	7 0
2010 Jul 31	5 5	19 36	7 23	20 43	8 58	21 29	9 39	21 48	21 49	9 57	9 37	21 57	21 39	9 43	20 21	6 56
2010 Aug 1	5 6	19 35	7 26	20 41	8 59	21 27	9 38	21 45	21 45	9 53	9 33	21 53	21 35	9 39	20 17	6 52
2010 Aug 2	5 7	19 34	7 29	20 39	9 1	21 25	9 37	21 43	21 41	9 49	9 30	21 50	21 31	9 35	20 13	6 48
2010 Aug 3	5 8	19 33	7 31	20 37	9 2	21 23	9 36	21 40	21 37	9 45	9 26	21 46	21 27	9 31	20 9	6 44
2010 Aug 4	5 9	19 31	7 33	20 35	9 4	21 21	9 35	21 38	21 33	9 40	9 23	21 42	21 23	9 27	20 5	6 40
2010 Aug 5	5 10	19 30	7 35	20 33	9 5	21 19	9 35	21 35	21 29	9 36	9 19	21 38	21 19	9 23	20 1	6 36
2010 Aug 6	5 11	19 29	7 37	20 30	9 7	21 17	9 34	21 32	21 25	9 32	9 16	21 35	21 15	9 18	19 57	6 32
2010 Aug 7	5 12	19 28	7 38	20 28	9 8	21 15	9 33	21 30	21 21	9 28	9 12	21 31	21 11	9 14	19 53	6 28
2010 Aug 8	5 13	19 26	7 39	20 25	9 10	21 12	9 32	21 27	21 17	9 24	9 9	21 27	21 7	9 10	19 49	6 23
2010 Aug 9	5 14	19 25	7 40	20 22	9 11	21 10	9 32	21 24	21 13	9 19	9 5	21 23	21 3	9 6	19 45	6 19
2010 Aug 10	5 15	19 24	7 41	20 19	9 13	21 8	9 31	21 22	21 9	9 15	9 2	21 20	20 59	9 2	19 45	6 19
2010 Aug 11	5 16	19 22	7 41	20 16	9 14	21 6	9 30	21 19	21 5	9 11	8 58	21 16	20 55	8 58	19 41	6 15
2010 Aug 12	5 17	19 21	7 41	20 13	9 16	21 4	9 29	21 17	21 0	9 7	8 55	21 12	20 51	8 54	19 37	6 11
2010 Aug 13	5 18	19 20	7 41	20 9	9 17	21 2	9 29	21 14	20 56	9 2	8 52	21 8	20 47	8 50	19 33	6 7
2010 Aug 14	5 19	19 18	7 40	20 6	9 18	21 0	9 28	21 11	20 52	8 58	8 48	21 5	20 43	8 46	19 29	6 3
2010 Aug 15	5 20	19 17	7 39	20 2	9 20	20 57	9 27	21 9	20 48	8 54	8 45	21 1	20 39	8 42	19 25	5 59
2010 Aug 16	5 21	19 15	7 38	19 58	9 21	20 55	9 27	21 6	20 44	8 49	8 41	20 57	20 35	8 38	19 21	5 55
2010 Aug 17	5 22	19 14	7 36	19 54	9 22	20 53	9 26	21 4	20 40	8 45	8 38	20 54	20 31	8 33	19 17	5 51
2010 Aug 18	5 23	19 12	7 34	19 50	9 24	20 51	9 25	21 1	20 36	8 41	8 35	20 50	20 27	8 29	19 13	5 46
2010 Aug 19	5 24	19 11	7 31	19 46	9 25	20 48	9 25	20 59	20 32	8 36	8 31	20 46	20 23	8 25	19 9	5 42
2010 Aug 20	5 25	19 9	7 28	19 41	9 26	20 46	9 24	20 56	20 28	8 32	8 28	20 42	20 19	8 21	19 5	5 38
2010 Aug 21	5 26	19 8	7 24	19 37	9 27	20 44	9 23	20 53	20 24	8 28	8 24	20 39	20 15	8 17	19 1	5 34
2010 Aug 22	5 27	19 6	7 20	19 32	9 28	20 42	9 23	20 51	20 19	8 23	8 21	20 35	20 11	8 13	18 57	5 30
2010 Aug 23	5 29	19 5	7 16	19 27	9 29	20 39	9 22	20 48	20 15	8 19	8 18	20 31	20 7	8 9	18 53	5 26

Local time of Rise and Set

Date	Sun		Mercury		Venus		Mars		Jupiter		Saturn		Uranus		Neptune	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
2010 Aug 24	5 30	19 3	7 11	19 22	9 30	20 37	9 21	20 46	20 11	8 14	8 14	20 27	20 3	8 5	18 49	5 22
2010 Aug 25	5 31	19 2	7 5	19 17	9 32	20 34	9 21	20 43	20 7	8 10	8 11	20 24	19 59	8 1	18 45	5 18
2010 Aug 26	5 32	19 0	6 59	19 12	9 33	20 32	9 20	20 41	20 3	8 5	8 7	20 20	19 55	7 56	18 41	5 14
2010 Aug 27	5 33	18 58	6 52	19 6	9 34	20 30	9 19	20 38	19 59	8 1	8 4	20 16	19 51	7 52	18 37	5 10
2010 Aug 28	5 34	18 57	6 45	19 1	9 34	20 27	9 19	20 36	19 54	7 56	8 1	20 13	19 46	7 48	18 33	5 6
2010 Aug 29	5 35	18 55	6 37	18 56	9 35	20 25	9 18	20 33	19 50	7 52	7 57	20 9	19 42	7 44	18 29	5 1
2010 Aug 30	5 36	18 54	6 29	18 50	9 36	20 22	9 18	20 31	19 46	7 47	7 54	20 5	19 38	7 40	18 25	4 57
2010 Aug 31	5 37	18 52	6 21	18 44	9 37	20 20	9 17	20 28	19 42	7 43	7 51	20 2	19 34	7 36	18 21	4 53
2010 Sep 1	5 38	18 50	6 12	18 39	9 38	20 17	9 16	20 26	19 38	7 38	7 47	19 58	19 30	7 32	18 17	4 49
2010 Sep 2	5 39	18 49	6 3	18 33	9 39	20 15	9 16	20 23	19 34	7 34	7 44	19 54	19 26	7 27	18 13	4 45
2010 Sep 3	5 40	18 47	5 54	18 28	9 39	20 12	9 15	20 21	19 29	7 29	7 40	19 50	19 22	7 23	18 9	4 41
2010 Sep 4	5 41	18 45	5 45	18 23	9 40	20 10	9 15	20 18	19 25	7 25	7 37	19 47	19 18	7 19	18 5	4 37
2010 Sep 5	5 42	18 43	5 36	18 18	9 41	20 7	9 14	20 16	19 21	7 20	7 34	19 43	19 14	7 15	18 1	4 33
2010 Sep 6	5 43	18 42	5 27	18 13	9 41	20 4	9 14	20 14	19 17	7 15	7 30	19 39	19 10	7 11	17 57	4 29
2010 Sep 7	5 44	18 40	5 18	18 9	9 42	20 2	9 13	20 11	19 12	7 11	7 27	19 36	19 6	7 7	17 53	4 25
2010 Sep 8	5 45	18 38	5 10	18 5	9 42	19 59	9 12	20 9	19 8	7 6	7 24	19 32	19 2	7 3	17 49	4 21
2010 Sep 9	5 46	18 37	5 2	18 1	9 42	19 56	9 12	20 6	19 4	7 2	7 20	19 28	19 2	7 2	17 45	4 16
2010 Sep 10	5 47	18 35	4 55	17 57	9 43	19 54	9 11	20 4	19 0	6 57	7 17	19 25	18 58	6 58	17 41	4 12
2010 Sep 11	5 48	18 33	4 49	17 54	9 43	19 51	9 11	20 2	18 56	6 53	7 14	19 21	18 54	6 54	17 37	4 8
2010 Sep 12	5 49	18 31	4 43	17 51	9 43	19 48	9 10	19 59	18 51	6 48	7 10	19 17	18 50	6 50	17 33	4 4
2010 Sep 13	5 50	18 30	4 38	17 48	9 43	19 45	9 10	19 57	18 47	6 43	7 7	19 14	18 46	6 46	17 29	4 0
2010 Sep 14	5 51	18 28	4 34	17 46	9 43	19 42	9 9	19 54	18 43	6 39	7 4	19 10	18 42	6 42	17 25	3 56
2010 Sep 15	5 52	18 26	4 31	17 44	9 43	19 39	9 9	19 52	18 43	6 38	7 0	19 6	18 38	6 37	17 21	3 52
2010 Sep 16	5 53	18 24	4 28	17 43	9 43	19 36	9 8	19 50	18 38	6 33	6 57	19 3	18 34	6 33	17 17	3 48
2010 Sep 17	5 55	18 23	4 26	17 42	9 43	19 33	9 8	19 47	18 34	6 29	6 54	18 59	18 30	6 29	17 12	3 44
2010 Sep 18	5 56	18 21	4 25	17 40	9 42	19 30	9 8	19 45	18 30	6 24	6 50	18 55	18 26	6 25	17 8	3 40
2010 Sep 19	5 57	18 19	4 25	17 40	9 42	19 27	9 7	19 43	18 26	6 19	6 47	18 51	18 22	6 21	17 4	3 36
2010 Sep 20	5 58	18 17	4 26	17 39	9 41	19 24	9 7	19 40	18 21	6 15	6 44	18 48	18 18	6 17	17 0	3 32
2010 Sep 21	5 59	18 16	4 27	17 39	9 41	19 21	9 6	19 38	18 17	6 10	6 40	18 44	18 13	6 12	16 56	3 27
2010 Sep 22	6 0	18 14	4 29	17 38	9 40	19 18	9 6	19 36	18 13	6 6	6 37	18 40	18 9	6 8	16 52	3 23

Local time of Rise and Set

Date	Sun		Mercury		Venus		Mars		Jupiter		Saturn		Uranus		Neptune	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
2010 Sep 23	6 1	18 12	4 31	17 38	9 39	19 15	9 5	19 34	18 9	6 1	6 34	18 37	18 5	6 4	16 48	3 19
2010 Sep 24	6 2	18 10	4 34	17 38	9 38	19 11	9 5	19 31	18 4	5 56	6 30	18 33	18 1	6 0	16 44	3 15
2010 Sep 25	6 3	18 9	4 38	17 38	9 37	19 8	9 5	19 29	18 0	5 52	6 27	18 29	17 57	5 56	16 40	3 11
2010 Sep 26	6 4	18 7	4 41	17 38	9 35	19 4	9 4	19 27	17 56	5 47	6 24	18 26	17 53	5 52	16 36	3 7
2010 Sep 27	6 5	18 5	4 46	17 38	9 34	19 1	9 4	19 25	17 52	5 42	6 20	18 22	17 49	5 48	16 32	3 3
2010 Sep 28	6 6	18 3	4 50	17 38	9 32	18 57	9 3	19 23	17 47	5 38	6 17	18 18	17 45	5 43	16 28	2 59
2010 Sep 29	6 7	18 2	4 54	17 38	9 30	18 54	9 3	19 20	17 43	5 33	6 14	18 15	17 41	5 39	16 24	2 55
2010 Sep 30	6 8	18 0	4 59	17 38	9 28	18 50	9 3	19 18	17 39	5 28	6 10	18 11	17 37	5 35	16 20	2 51
2010 Oct 1	6 9	17 58	5 4	17 38	9 26	18 46	9 2	19 16	17 35	5 24	6 7	18 7	17 33	5 31	16 16	2 47
2010 Oct 2	6 10	17 56	5 9	17 38	9 24	18 42	9 2	19 14	17 30	5 19	6 4	18 4	17 29	5 27	16 12	2 43
2010 Oct 3	6 11	17 55	5 14	17 38	9 21	18 39	9 2	19 12	17 26	5 15	6 0	18 0	17 25	5 23	16 8	2 39
2010 Oct 4	6 13	17 53	5 20	17 38	9 19	18 35	9 1	19 10	17 22	5 10	5 57	17 56	17 21	5 18	16 4	2 35
2010 Oct 5	6 14	17 51	5 25	17 38	9 16	18 31	9 1	19 8	17 18	5 5	5 54	17 53	17 17	5 14	16 0	2 31
2010 Oct 6	6 15	17 50	5 30	17 38	9 13	18 27	9 0	19 5	17 13	5 1	5 50	17 49	17 13	5 10	15 56	2 27
2010 Oct 7	6 16	17 48	5 35	17 38	9 9	18 22	9 0	19 3	17 9	4 56	5 47	17 45	17 9	5 6	15 52	2 23
2010 Oct 8	6 17	17 46	5 41	17 37	9 6	18 18	9 0	19 1	17 5	4 52	5 44	17 42	17 5	5 2	15 48	2 19
2010 Oct 9	6 18	17 44	5 46	17 37	9 2	18 14	8 59	18 59	17 1	4 47	5 40	17 38	17 1	4 58	15 44	2 15
2010 Oct 10	6 19	17 43	5 51	17 37	8 58	18 10	8 59	18 57	16 56	4 43	5 37	17 34	16 57	4 54	15 40	2 11
2010 Oct 11	6 20	17 41	5 56	17 37	8 53	18 5	8 59	18 55	16 52	4 38	5 34	17 31	16 53	4 49	15 36	2 6
2010 Oct 12	6 21	17 40	6 1	17 36	8 49	18 1	8 59	18 53	16 48	4 34	5 30	17 27	16 49	4 45	15 32	2 2
2010 Oct 13	6 23	17 38	6 7	17 36	8 44	17 56	8 58	18 51	16 44	4 29	5 27	17 23	16 45	4 41	15 28	1 58
2010 Oct 14	6 24	17 36	6 12	17 36	8 39	17 52	8 58	18 49	16 40	4 25	5 24	17 20	16 41	4 37	15 24	1 54
2010 Oct 15	6 25	17 35	6 17	17 35	8 33	17 47	8 58	18 48	16 35	4 20	5 20	17 16	16 37	4 33	15 20	1 50
2010 Oct 16	6 26	17 33	6 22	17 35	8 28	17 42	8 57	18 46	16 31	4 16	5 17	17 12	16 32	4 29	15 17	1 46
2010 Oct 17	6 27	17 32	6 27	17 34	8 22	17 38	8 57	18 44	16 27	4 11	5 14	17 9	16 28	4 25	15 13	1 42
2010 Oct 18	6 28	17 30	6 32	17 34	8 16	17 33	8 57	18 42	16 23	4 7	5 10	17 5	16 24	4 20	15 9	1 38
2010 Oct 19	6 29	17 28	6 37	17 34	8 10	17 28	8 57	18 40	16 19	4 2	5 7	17 1	16 20	4 16	15 5	1 34
2010 Oct 20	6 31	17 27	6 41	17 33	8 3	17 23	8 56	18 38	16 14	3 58	5 4	16 58	16 16	4 12	15 1	1 30
2010 Oct 21	6 32	17 25	6 46	17 33	7 57	17 19	8 56	18 36	16 10	3 53	5 0	16 54	16 12	4 8	14 57	1 26
2010 Oct 22	6 33	17 24	6 51	17 32	7 50	17 14	8 56	18 35	16 6	3 49	4 57	16 50	16 8	4 4	14 53	1 22

Local time of Rise and Set

Date	Sun		Mercury		Venus		Mars		Jupiter		Saturn		Uranus		Neptune	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
2010 Oct 23	6 34	17 22	6 56	17 32	7 43	17 9	8 55	18 33	16 2	3 44	4 54	16 47	16 4	4 0	14 49	1 18
2010 Oct 24	6 35	17 21	7 1	17 32	7 35	17 4	8 55	18 31	15 58	3 40	4 50	16 43	16 0	3 56	14 45	1 14
2010 Oct 25	6 37	17 19	7 5	17 31	7 28	17 0	8 55	18 29	15 54	3 36	4 47	16 39	15 56	3 52	14 41	1 10
2010 Oct 26	6 38	17 18	7 10	17 31	7 20	16 55	8 55	18 28	15 49	3 31	4 44	16 36	15 52	3 48	14 37	1 6
2010 Oct 27	6 39	17 17	7 14	17 31	7 13	16 50	8 54	18 26	15 45	3 27	4 40	16 32	15 48	3 43	14 33	1 2
2010 Oct 28	6 40	17 15	7 19	17 31	7 5	16 46	8 54	18 24	15 41	3 23	4 37	16 28	15 44	3 39	14 29	0 58
2010 Oct 29	6 41	17 14	7 24	17 31	6 58	16 41	8 54	18 22	15 37	3 18	4 34	16 25	15 40	3 35	14 25	0 54
2010 Oct 30	6 43	17 12	7 28	17 30	6 50	16 37	8 54	18 21	15 33	3 14	4 30	16 21	15 36	3 31	14 21	0 50
2010 Oct 31	6 44	17 11	7 33	17 30	6 42	16 33	8 53	18 19	15 29	3 10	4 27	16 17	15 32	3 27	14 17	0 46
2010 Nov 1	6 45	17 10	7 37	17 30	6 34	16 28	8 53	18 18	15 25	3 6	4 24	16 13	15 28	3 23	14 13	0 42
2010 Nov 2	6 46	17 9	7 42	17 30	6 27	16 24	8 53	18 16	15 21	3 1	4 20	16 10	15 24	3 19	14 9	0 39
2010 Nov 3	6 47	17 7	7 46	17 30	6 19	16 20	8 53	18 15	15 16	2 57	4 17	16 6	15 20	3 15	14 5	0 35
2010 Nov 4	6 49	17 6	7 50	17 30	6 12	16 16	8 52	18 13	15 12	2 53	4 13	16 2	15 16	3 11	14 1	0 31
2010 Nov 5	6 50	17 5	7 55	17 31	6 4	16 12	8 52	18 11	15 8	2 49	4 10	15 59	15 12	3 7	13 57	0 27
2010 Nov 6	6 51	17 4	7 59	17 31	5 57	16 8	8 52	18 10	15 4	2 44	4 7	15 55	15 8	3 2	13 53	0 23
2010 Nov 7	6 52	17 3	8 3	17 31	5 50	16 4	8 51	18 9	15 0	2 40	4 3	15 51	15 4	2 58	13 49	0 19
2010 Nov 8	6 54	17 1	8 7	17 31	5 43	16 0	8 51	18 7	14 56	2 36	4 0	15 48	15 0	2 54	13 45	0 15
2010 Nov 9	6 55	17 0	8 11	17 32	5 37	15 57	8 51	18 6	14 52	2 32	3 56	15 44	14 56	2 50	13 41	0 11
2010 Nov 10	6 56	16 59	8 15	17 32	5 30	15 53	8 51	18 4	14 48	2 28	3 53	15 40	14 52	2 46	13 37	0 7
2010 Nov 11	6 57	16 58	8 19	17 33	5 24	15 50	8 50	18 3	14 44	2 24	3 50	15 37	14 48	2 42	13 33	0 3
2010 Nov 12	6 59	16 57	8 23	17 34	5 18	15 46	8 50	18 2	14 40	2 20	3 46	15 33	14 44	2 38	13 29	23 59
2010 Nov 13	7 0	16 56	8 27	17 34	5 12	15 43	8 50	18 0	14 36	2 16	3 43	15 29	14 40	2 34	13 25	23 55
2010 Nov 14	7 1	16 55	8 31	17 35	5 6	15 40	8 49	17 59	14 32	2 12	3 39	15 26	14 36	2 30	13 22	23 51
2010 Nov 15	7 2	16 54	8 35	17 36	5 1	15 36	8 49	17 58	14 28	2 8	3 36	15 22	14 32	2 26	13 18	23 47
2010 Nov 16	7 4	16 53	8 38	17 37	4 56	15 33	8 49	17 57	14 24	2 4	3 33	15 18	14 28	2 22	13 14	23 43
2010 Nov 17	7 5	16 53	8 42	17 38	4 51	15 30	8 48	17 55	14 20	2 0	3 29	15 14	14 24	2 18	13 10	23 39
2010 Nov 18	7 6	16 52	8 45	17 39	4 46	15 27	8 48	17 54	14 16	1 56	3 26	15 11	14 20	2 14	13 6	23 35
2010 Nov 19	7 7	16 51	8 49	17 40	4 42	15 25	8 48	17 53	14 12	1 52	3 22	15 7	14 16	2 10	13 2	23 31
2010 Nov 20	7 8	16 50	8 52	17 42	4 37	15 22	8 47	17 52	14 8	1 48	3 19	15 3	14 12	2 6	12 58	23 28
2010 Nov 21	7 10	16 50	8 55	17 43	4 33	15 19	8 47	17 51	14 4	1 44	3 15	15 0	14 8	2 2	12 54	23 24

Local time of Rise and Set

Date	Sun		Mercury		Venus		Mars		Jupiter		Saturn		Uranus		Neptune	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
2010 Nov 22	7 11	16 49	8 58	17 44	4 29	15 16	8 47	17 50	14 0	1 40	3 12	14 56	14 4	1 58	12 50	23 20
2010 Nov 23	7 12	16 48	9 0	17 46	4 26	15 14	8 46	17 49	13 56	1 36	3 8	14 52	14 0	1 54	12 46	23 16
2010 Nov 24	7 13	16 48	9 3	17 47	4 22	15 11	8 46	17 48	13 52	1 32	3 5	14 48	13 56	1 50	12 42	23 12
2010 Nov 25	7 14	16 47	9 5	17 48	4 19	15 9	8 45	17 47	13 48	1 28	3 1	14 45	13 52	1 46	12 38	23 8
2010 Nov 26	7 15	16 46	9 7	17 50	4 16	15 7	8 45	17 46	13 44	1 25	2 58	14 41	13 48	1 42	12 34	23 4
2010 Nov 27	7 17	16 46	9 9	17 51	4 13	15 4	8 45	17 45	13 40	1 21	2 55	14 37	13 44	1 38	12 30	23 0
2010 Nov 28	7 18	16 46	9 11	17 53	4 10	15 2	8 44	17 44	13 37	1 17	2 51	14 34	13 40	1 34	12 26	22 56
2010 Nov 29	7 19	16 45	9 12	17 54	4 8	15 0	8 44	17 43	13 33	1 13	2 48	14 30	13 36	1 30	12 23	22 52
2010 Nov 30	7 20	16 45	9 13	17 55	4 6	14 57	8 43	17 42	13 29	1 9	2 44	14 26	13 32	1 26	12 19	22 49
2010 Dec 1	7 21	16 44	9 14	17 56	4 4	14 55	8 43	17 41	13 25	1 6	2 41	14 22	13 28	1 22	12 15	22 45
2010 Dec 2	7 22	16 44	9 14	17 57	4 2	14 53	8 42	17 40	13 21	1 2	2 37	14 19	13 24	1 18	12 11	22 41
2010 Dec 3	7 23	16 44	9 14	17 58	4 0	14 51	8 42	17 40	13 17	0 58	2 33	14 15	13 20	1 14	12 7	22 37
2010 Dec 4	7 24	16 44	9 13	17 59	3 58	14 49	8 41	17 39	13 13	0 55	2 30	14 11	13 16	1 10	12 3	22 33
2010 Dec 5	7 25	16 43	9 12	17 59	3 57	14 47	8 41	17 38	13 9	0 51	2 26	14 7	13 12	1 6	11 59	22 29
2010 Dec 6	7 26	16 43	9 10	17 59	3 55	14 45	8 40	17 37	13 6	0 47	2 23	14 4	13 8	1 2	11 55	22 25
2010 Dec 7	7 27	16 43	9 8	17 59	3 54	14 43	8 40	17 37	13 2	0 44	2 19	14 0	13 5	0 58	11 51	22 21
2010 Dec 8	7 28	16 43	9 5	17 58	3 53	14 41	8 39	17 36	12 58	0 40	2 16	13 56	13 1	0 54	11 47	22 18
2010 Dec 9	7 29	16 43	9 2	17 56	3 52	14 40	8 38	17 35	12 54	0 36	2 12	13 52	12 57	0 50	11 43	22 14
2010 Dec 10	7 30	16 43	8 57	17 54	3 51	14 38	8 38	17 35	12 50	0 33	2 9	13 49	12 53	0 46	11 39	22 10
2010 Dec 11	7 31	16 43	8 52	17 51	3 50	14 36	8 37	17 34	12 46	0 29	2 5	13 45	12 49	0 42	11 36	22 6
2010 Dec 12	7 31	16 43	8 46	17 47	3 49	14 34	8 36	17 34	12 43	0 26	2 2	13 41	12 45	0 38	11 32	22 2
2010 Dec 13	7 32	16 43	8 39	17 43	3 49	14 33	8 36	17 33	12 39	0 22	1 58	13 37	12 41	0 34	11 28	21 58
2010 Dec 14	7 33	16 43	8 31	17 38	3 48	14 31	8 35	17 32	12 35	0 19	1 54	13 34	12 37	0 31	11 24	21 54
2010 Dec 15	7 34	16 44	8 23	17 32	3 48	14 29	8 34	17 32	12 31	0 15	1 51	13 30	12 33	0 27	11 20	21 51
2010 Dec 16	7 34	16 44	8 13	17 25	3 48	14 28	8 34	17 31	12 27	0 12	1 47	13 26	12 29	0 23	11 16	21 47
2010 Dec 17	7 35	16 44	8 3	17 18	3 47	14 26	8 33	17 31	12 24	0 8	1 44	13 22	12 25	0 19	11 12	21 43
2010 Dec 18	7 36	16 45	7 52	17 10	3 47	14 25	8 32	17 31	12 20	0 5	1 40	13 19	12 21	0 15	11 8	21 39
2010 Dec 19	7 36	16 45	7 41	17 2	3 47	14 23	8 31	17 30	12 16	0 1	1 36	13 15	12 17	0 11	11 4	21 35
2010 Dec 20	7 37	16 45	7 30	16 53	3 47	14 22	8 31	17 30	12 12	23 58	1 33	13 11	12 13	0 7	11 0	21 31
2010 Dec 21	7 38	16 46	7 19	16 45	3 48	14 21	8 30	17 29	12 9	23 54	1 29	13 7	12 9	0 3	10 57	21 28

Local time of Rise and Set

Date	Sun		Mercury		Venus		Mars		Jupiter		Saturn		Uranus		Neptune	
	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set	Rise	Set
2010 Dec 22	7 38	16 46	7 8	16 36	3 48	14 19	8 29	17 29	12 5	23 51	1 25	13 3	12 5	23 59	10 53	21 24
2010 Dec 23	7 39	16 47	6 58	16 28	3 48	14 18	8 28	17 29	12 1	23 48	1 22	13 0	12 1	23 55	10 49	21 20
2010 Dec 24	7 39	16 47	6 48	16 20	3 48	14 17	8 27	17 28	11 57	23 44	1 18	12 56	11 58	23 52	10 45	21 16
2010 Dec 25	7 39	16 48	6 39	16 13	3 49	14 15	8 26	17 28	11 54	23 41	1 14	12 52	11 54	23 48	10 41	21 12
2010 Dec 26	7 40	16 49	6 31	16 6	3 49	14 14	8 25	17 28	11 50	23 38	1 11	12 48	11 50	23 44	10 37	21 8
2010 Dec 27	7 40	16 49	6 24	15 59	3 50	14 13	8 24	17 28	11 46	23 34	1 7	12 44	11 46	23 40	10 33	21 5
2010 Dec 28	7 40	16 50	6 18	15 54	3 50	14 12	8 23	17 27	11 43	23 31	1 3	12 41	11 42	23 36	10 29	21 1
2010 Dec 29	7 41	16 51	6 13	15 48	3 51	14 11	8 22	17 27	11 39	23 28	1 0	12 37	11 38	23 32	10 25	20 57
2010 Dec 30	7 41	16 51	6 9	15 44	3 52	14 10	8 21	17 27	11 35	23 24	0 56	12 33	11 34	23 28	10 22	20 53
2010 Dec 31	7 41	16 52	6 5	15 40	3 52	14 9	8 20	17 27	11 32	23 21	0 52	12 29	11 30	23 25	10 18	20 49

Geocentric Angular Equatorial Coordinates of Moon
True Equinox of Date (Corrected for Aberr. & L-time)
Time is TT

Date	Time	Alpha	Decl.	Dist.
2010/01/01	00:00:00	6 57 48.857	+23 30 5.48	0.35936769
2010/01/02	00:00:00	8 1 4.326	+19 50 48.28	0.35870129
2010/01/03	00:00:00	9 0 52.556	+14 53 9.28	0.35985957
2010/01/04	00:00:00	9 57 4.224	+ 9 5 0.96	0.36263294
2010/01/05	00:00:00	10 50 18.228	+ 2 53 45.23	0.36665875
2010/01/06	00:00:00	11 41 35.999	- 3 17 1.80	0.37149901
2010/01/07	00:00:00	12 32 3.102	- 9 8 6.09	0.37671749
2010/01/08	00:00:00	13 22 38.096	-14 23 49.18	0.38193788
2010/01/09	00:00:00	14 14 4.752	-18 51 5.75	0.38687573
2010/01/10	00:00:00	15 6 45.078	-22 18 48.93	0.39134582
2010/01/11	00:00:00	16 0 33.735	-24 38 3.98	0.39525118
2010/01/12	00:00:00	16 54 57.417	-25 43 5.74	0.39856078
2010/01/13	00:00:00	17 49 2.977	-25 32 26.79	0.40128237
2010/01/14	00:00:00	18 41 53.494	-24 9 28.50	0.40343547
2010/01/15	00:00:00	19 32 45.407	-21 41 45.91	0.40502876
2010/01/16	00:00:00	20 21 18.834	-18 19 39.50	0.40604465
2010/01/17	00:00:00	21 7 38.679	-14 14 35.18	0.40643296
2010/01/18	00:00:00	21 52 9.769	- 9 37 48.92	0.40611406
2010/01/19	00:00:00	22 35 30.652	- 4 39 50.30	0.40499077
2010/01/20	00:00:00	23 18 28.808	+ 0 29 37.60	0.40296748
2010/01/21	00:00:00	0 1 57.843	+ 5 41 10.19	0.39997413
2010/01/22	00:00:00	0 46 55.813	+10 44 52.15	0.39599260
2010/01/23	00:00:00	1 34 22.925	+15 29 13.76	0.39108269
2010/01/24	00:00:00	2 25 16.066	+19 40 4.67	0.38540445
2010/01/25	00:00:00	3 20 17.060	+22 59 54.03	0.37923240
2010/01/26	00:00:00	4 19 33.560	+25 8 32.21	0.37295584
2010/01/27	00:00:00	5 22 19.248	+25 46 20.53	0.36705850
2010/01/28	00:00:00	6 26 51.313	+24 39 53.11	0.36207173
2010/01/29	00:00:00	7 31 0.470	+21 47 45.55	0.35850140

Date	Time	Alpha	Decl.	Dist.
2010/01/30	00:00:00	8 33 0.271	+17 22 39.49	0.35673950
2010/01/31	00:00:00	9 32 0.321	+11 48 16.42	0.35698409
2010/02/01	00:00:00	10 28 6.360	+ 5 33 23.58	0.35919549
2010/02/02	00:00:00	11 22 0.274	- 0 53 28.85	0.36310665
2010/02/03	00:00:00	12 14 38.483	- 7 7 20.56	0.36828324
2010/02/04	00:00:00	13 6 56.225	-12 47 47.37	0.37421023
2010/02/05	00:00:00	13 59 36.997	-17 38 49.51	0.38037672
2010/02/06	00:00:00	14 53 4.826	-21 28 16.68	0.38633963
2010/02/07	00:00:00	15 47 19.058	-24 7 29.06	0.39175953
2010/02/08	00:00:00	16 41 53.898	-25 31 27.48	0.39641135
2010/02/09	00:00:00	17 36 5.278	-25 39 17.12	0.40017676
2010/02/10	00:00:00	18 29 4.330	-24 34 13.56	0.40302502
2010/02/11	00:00:00	19 20 12.116	-22 23 9.16	0.40498789
2010/02/12	00:00:00	20 9 9.237	-19 15 25.77	0.40613285
2010/02/13	00:00:00	20 55 57.840	-15 21 39.98	0.40653784
2010/02/14	00:00:00	21 40 58.162	-10 52 45.10	0.40627030
2010/02/15	00:00:00	22 24 43.295	- 5 59 20.05	0.40537291
2010/02/16	00:00:00	23 7 54.709	- 0 51 43.06	0.40385755
2010/02/17	00:00:00	23 51 19.297	+ 4 19 55.73	0.40170846
2010/02/18	00:00:00	0 35 47.467	+ 9 25 7.64	0.39889445
2010/02/19	00:00:00	1 22 11.086	+14 12 28.87	0.39538870
2010/02/20	00:00:00	2 11 19.533	+18 29 0.81	0.39119382
2010/02/21	00:00:00	3 3 51.873	+21 59 42.89	0.38636911
2010/02/22	00:00:00	4 0 4.154	+24 27 48.67	0.38105550
2010/02/23	00:00:00	4 59 34.869	+25 36 25.74	0.37549311
2010/02/24	00:00:00	6 1 18.476	+25 11 58.83	0.37002468
2010/02/25	00:00:00	7 3 38.793	+23 8 23.52	0.36507804
2010/02/26	00:00:00	8 5 1.341	+19 30 5.03	0.36112223
2010/02/27	00:00:00	9 4 25.245	+14 31 59.93	0.35859848
2010/02/28	00:00:00	10 1 35.498	+ 8 36 55.43	0.35783772
2010/03/01	00:00:00	10 56 54.896	+ 2 11 41.79	0.35898707

Date	Time	Alpha	Decl.	Dist.
2010/03/02	00:00:00	11 51 7.229	- 4 16 19.49	0.36197109
2010/03/03	00:00:00	12 45 1.024	-10 21 54.60	0.36650277
2010/03/04	00:00:00	13 39 16.563	-15 43 37.00	0.37213941
2010/03/05	00:00:00	14 34 15.833	-20 4 39.68	0.37836230
2010/03/06	00:00:00	15 29 55.906	-23 13 21.52	0.38465548
2010/03/07	00:00:00	16 25 48.233	-25 3 22.67	0.39056635
2010/03/08	00:00:00	17 21 6.314	-25 33 44.99	0.39574220
2010/03/09	00:00:00	18 15 0.278	-24 48 20.08	0.39994468
2010/03/10	00:00:00	19 6 52.047	-22 54 38.61	0.40304764
2010/03/11	00:00:00	19 56 24.412	-20 2 19.23	0.40502395
2010/03/12	00:00:00	20 43 42.038	-16 21 47.97	0.40592554
2010/03/13	00:00:00	21 29 7.152	-12 3 28.75	0.40585996
2010/03/14	00:00:00	22 13 13.853	- 7 17 27.46	0.40496563
2010/03/15	00:00:00	22 56 43.458	- 2 13 40.56	0.40338827
2010/03/16	00:00:00	23 40 21.446	+ 2 57 42.85	0.40126054
2010/03/17	00:00:00	0 24 55.421	+ 8 5 53.63	0.39868760
2010/03/18	00:00:00	1 11 12.927	+12 58 55.48	0.39574073
2010/03/19	00:00:00	1 59 57.628	+17 23 24.35	0.39246034
2010/03/20	00:00:00	2 51 42.431	+21 4 25.80	0.38886866
2010/03/21	00:00:00	3 46 39.165	+23 46 10.00	0.38499032
2010/03/22	00:00:00	4 44 27.757	+25 13 26.40	0.38087763
2010/03/23	00:00:00	5 44 12.443	+25 14 21.03	0.37663560
2010/03/24	00:00:00	6 44 33.110	+23 43 12.37	0.37244057
2010/03/25	00:00:00	7 44 10.640	+20 42 24.89	0.36854579
2010/03/26	00:00:00	8 42 12.435	+16 22 26.11	0.36526782
2010/03/27	00:00:00	9 38 24.008	+11 0 9.61	0.36295053
2010/03/28	00:00:00	10 33 4.746	+ 4 56 48.84	0.36190934
2010/03/29	00:00:00	11 26 55.360	- 1 23 56.23	0.36236661
2010/03/30	00:00:00	12 20 44.031	- 7 37 37.57	0.36439599
2010/03/31	00:00:00	13 15 13.702	-13 20 36.24	0.36789415
2010/04/01	00:00:00	14 10 50.438	-18 11 45.41	0.37258961
2010/04/02	00:00:00	15 7 33.691	-21 54 16.91	0.37808506

Date	Time	Alpha	Decl.	Dist.
2010/04/03	00:00:00	16 4 52.239	-24 17 17.97	0.38391850
2010/04/04	00:00:00	17 1 50.577	-25 16 50.11	0.38962585
2010/04/05	00:00:00	17 57 25.940	-24 55 36.82	0.39479238
2010/04/06	00:00:00	18 50 48.271	-23 21 30.65	0.39908749
2010/04/07	00:00:00	19 41 33.003	-20 45 14.97	0.40228304
2010/04/08	00:00:00	20 29 42.755	-17 18 17.40	0.40425819
2010/04/09	00:00:00	21 15 41.519	-13 11 32.74	0.40499430
2010/04/10	00:00:00	22 0 6.993	- 8 35 0.48	0.40456269
2010/04/11	00:00:00	22 43 44.505	- 3 38 1.75	0.40310698
2010/04/12	00:00:00	23 27 23.243	+ 1 30 2.31	0.40082156
2010/04/13	00:00:00	0 11 53.994	+ 6 39 4.54	0.39792736
2010/04/14	00:00:00	0 58 6.911	+11 37 28.23	0.39464691
2010/04/15	00:00:00	1 46 47.632	+16 11 36.66	0.39118136
2010/04/16	00:00:00	2 38 30.087	+20 5 51.27	0.38769277
2010/04/17	00:00:00	3 33 25.597	+23 3 20.49	0.38429532
2010/04/18	00:00:00	4 31 11.475	+24 47 59.26	0.38105735
2010/04/19	00:00:00	5 30 47.387	+25 7 31.26	0.37801474
2010/04/20	00:00:00	6 30 48.147	+23 56 31.89	0.37519272
2010/04/21	00:00:00	7 29 51.084	+21 17 57.48	0.37263085
2010/04/22	00:00:00	8 27 2.631	+17 22 14.82	0.37040458
2010/04/23	00:00:00	9 22 9.503	+12 25 0.98	0.36863611
2010/04/24	00:00:00	10 15 33.607	+ 6 44 44.86	0.36748954
2010/04/25	00:00:00	11 7 59.317	+ 0 41 22.28	0.36714822
2010/04/26	00:00:00	12 0 20.367	- 5 24 21.02	0.36777762
2010/04/27	00:00:00	12 53 28.321	-11 11 13.08	0.36948205
2010/04/28	00:00:00	13 48 1.427	-16 18 20.79	0.37226714
2010/04/29	00:00:00	14 44 13.164	-20 26 37.87	0.37601949
2010/04/30	00:00:00	15 41 43.245	-23 20 55.31	0.38050973
2010/05/01	00:00:00	16 39 37.632	-24 52 20.44	0.38541750
2010/05/02	00:00:00	17 36 42.685	-24 59 39.31	0.39037076
2010/05/03	00:00:00	18 31 49.175	-23 48 45.59	0.39498961
2010/05/04	00:00:00	19 24 13.141	-21 30 22.12	0.39892615
2010/05/05	00:00:00	20 13 43.620	-18 17 6.90	0.40189580

Date	Time	Alpha	Decl.	Dist.
2010/05/06	00:00:00	21 0 38.182	-14 21 19.06	0.40369853
2010/05/07	00:00:00	21 45 33.552	- 9 53 56.10	0.40423062
2010/05/08	00:00:00	22 29 17.224	- 5 4 32.76	0.40348825
2010/05/09	00:00:00	23 12 42.131	- 0 1 58.40	0.40156409
2010/05/10	00:00:00	23 56 43.772	+ 5 4 46.33	0.39863721
2010/05/11	00:00:00	0 42 18.188	+10 5 26.60	0.39495645
2010/05/12	00:00:00	1 30 18.717	+14 47 35.75	0.39081726
2010/05/13	00:00:00	2 21 29.298	+18 56 1.17	0.38653262
2010/05/14	00:00:00	3 16 12.749	+22 13 3.89	0.38240067
2010/05/15	00:00:00	4 14 15.880	+24 20 28.87	0.37867333
2010/05/16	00:00:00	5 14 40.065	+25 2 58.36	0.37553181
2010/05/17	00:00:00	6 15 50.125	+24 12 26.60	0.37307507
2010/05/18	00:00:00	7 16 4.665	+21 50 39.88	0.37132449
2010/05/19	00:00:00	8 14 11.123	+18 8 39.85	0.37024383
2010/05/20	00:00:00	9 9 43.700	+13 23 30.48	0.36976873
2010/05/21	00:00:00	10 2 59.447	+ 7 54 43.62	0.36983728
2010/05/22	00:00:00	10 54 43.380	+ 2 2 2.11	0.37041279
2010/05/23	00:00:00	11 45 53.351	- 3 55 26.93	0.37149285
2010/05/24	00:00:00	12 37 28.175	- 9 39 5.88	0.37310240
2010/05/25	00:00:00	13 30 17.523	-14 50 33.91	0.37527356
2010/05/26	00:00:00	14 24 51.372	-19 12 6.76	0.37801811
2010/05/27	00:00:00	15 21 9.292	-22 27 53.64	0.38130081
2010/05/28	00:00:00	16 18 34.362	-24 26 8.37	0.38502104
2010/05/29	00:00:00	17 15 59.134	-25 1 27.10	0.38900769
2010/05/30	00:00:00	18 12 5.841	-24 15 53.00	0.39302829
2010/05/31	00:00:00	19 5 51.717	-22 17 55.63	0.39680965
2010/06/01	00:00:00	19 56 45.457	-19 19 53.62	0.40006528
2010/06/02	00:00:00	20 44 49.062	-15 35 4.75	0.40252460
2010/06/03	00:00:00	21 30 30.033	-11 15 50.86	0.40396008
2010/06/04	00:00:00	22 14 31.657	- 6 32 54.69	0.40420997
2010/06/05	00:00:00	22 57 45.790	- 1 35 32.48	0.40319572
2010/06/06	00:00:00	23 41 8.803	+ 3 27 39.90	0.40093347

Date	Time	Alpha	Decl.	Dist.
2010/06/07	00:00:00	0 25 39.467	+ 8 27 43.26	0.39753932
2010/06/08	00:00:00	1 12 16.775	+13 14 4.62	0.39322741
2010/06/09	00:00:00	2 1 55.270	+17 33 32.80	0.38829903
2010/06/10	00:00:00	2 55 15.283	+21 9 46.00	0.38312126
2010/06/11	00:00:00	3 52 27.132	+23 43 55.71	0.37809384
2010/06/12	00:00:00	4 52 54.360	+24 57 35.16	0.37360602
2010/06/13	00:00:00	5 55 9.951	+24 37 27.35	0.36998858
2010/06/14	00:00:00	6 57 18.859	+22 40 12.17	0.36747082
2010/06/15	00:00:00	7 57 39.526	+19 14 9.25	0.36615383
2010/06/16	00:00:00	8 55 16.739	+14 36 48.77	0.36600852
2010/06/17	00:00:00	9 50 7.723	+ 9 10 11.42	0.36689943
2010/06/18	00:00:00	10 42 48.220	+ 3 16 46.89	0.36862655
2010/06/19	00:00:00	11 34 14.005	- 2 42 31.52	0.37097240
2010/06/20	00:00:00	12 25 26.126	- 8 28 52.51	0.37374127
2010/06/21	00:00:00	13 17 20.054	-13 45 3.51	0.37678266
2010/06/22	00:00:00	14 10 36.095	-18 15 8.28	0.37999641
2010/06/23	00:00:00	15 5 29.637	-21 44 42.59	0.38332241
2010/06/24	00:00:00	16 1 43.395	-24 2 6.20	0.38672022
2010/06/25	00:00:00	16 58 27.493	-25 0 14.95	0.39014561
2010/06/26	00:00:00	17 54 32.214	-24 38 16.34	0.39353009
2010/06/27	00:00:00	18 48 50.170	-23 1 41.58	0.39676798
2010/06/28	00:00:00	19 40 36.438	-20 20 54.37	0.39971354
2010/06/29	00:00:00	20 29 37.116	-16 48 43.41	0.40218792
2010/06/30	00:00:00	21 16 6.268	-12 38 8.37	0.40399430
2010/07/01	00:00:00	22 0 37.594	- 8 1 0.17	0.40493843
2010/07/02	00:00:00	22 43 56.539	- 3 7 38.78	0.40485163
2010/07/03	00:00:00	23 26 55.128	+ 1 52 47.00	0.40361392
2010/07/04	00:00:00	0 10 29.246	+ 6 51 33.62	0.40117525
2010/07/05	00:00:00	0 55 36.922	+11 39 21.76	0.39757353
2010/07/06	00:00:00	1 43 15.603	+16 5 9.19	0.39294746
2010/07/07	00:00:00	2 34 15.924	+19 55 12.45	0.38754208
2010/07/08	00:00:00	3 29 9.691	+22 52 48.39	0.38170356
2010/07/09	00:00:00	4 27 52.669	+24 39 25.93	0.37585939

Date	Time	Alpha	Decl.	Dist.
2010/07/10	00:00:00	5 29 30.447	+24 58 12.73	0.37048088
2010/07/11	00:00:00	6 32 23.044	+23 39 5.94	0.36602827
2010/07/12	00:00:00	7 34 36.286	+20 43 16.09	0.36288528
2010/07/13	00:00:00	8 34 43.393	+16 23 49.09	0.36129752
2010/07/14	00:00:00	9 32 8.822	+11 2 25.31	0.36133343
2010/07/15	00:00:00	10 27 5.286	+ 5 4 21.21	0.36288148
2010/07/16	00:00:00	11 20 16.294	- 1 5 32.83	0.36568524
2010/07/17	00:00:00	12 12 38.031	- 7 4 59.71	0.36940362
2010/07/18	00:00:00	13 5 5.561	-12 34 47.82	0.37367657
2010/07/19	00:00:00	13 58 22.275	-17 18 36.86	0.37817899
2010/07/20	00:00:00	14 52 50.729	-21 2 45.47	0.38265338
2010/07/21	00:00:00	15 48 25.432	-23 36 32.55	0.38692035
2010/07/22	00:00:00	16 44 31.336	-24 53 16.45	0.39087123
2010/07/23	00:00:00	17 40 12.141	-24 51 21.24	0.39444918
2010/07/24	00:00:00	18 34 27.517	-23 34 39.99	0.39762534
2010/07/25	00:00:00	19 26 31.475	-21 11 45.29	0.40037533
2010/07/26	00:00:00	20 16 3.115	-17 54 4.32	0.40266064
2010/07/27	00:00:00	21 3 7.222	-13 54 5.39	0.40441730
2010/07/28	00:00:00	21 48 8.536	- 9 23 54.96	0.40555341
2010/07/29	00:00:00	22 31 44.746	- 4 34 37.43	0.40595521
2010/07/30	00:00:00	23 14 41.145	+ 0 23 48.00	0.40550054
2010/07/31	00:00:00	23 57 47.454	+ 5 22 4.41	0.40407788
2010/08/01	00:00:00	0 41 55.996	+10 10 57.23	0.40160870
2010/08/02	00:00:00	1 27 59.800	+14 40 23.99	0.39807106
2010/08/03	00:00:00	2 16 48.797	+18 38 42.49	0.39352216
2010/08/04	00:00:00	3 9 2.128	+21 51 54.77	0.38811704
2010/08/05	00:00:00	4 4 55.623	+24 3 59.06	0.38211999
2010/08/06	00:00:00	5 4 7.632	+24 58 32.05	0.37590366
2010/08/07	00:00:00	6 5 32.999	+24 22 21.01	0.36993011
2010/08/08	00:00:00	7 7 36.684	+22 9 49.61	0.36470883
2010/08/09	00:00:00	8 8 45.762	+18 26 3.22	0.36073165
2010/08/10	00:00:00	9 8 0.661	+13 26 43.26	0.35839329

Date	Time	Alpha	Decl.	Dist.
2010/08/11	00:00:00	10 5 7.042	+ 7 35 5.41	0.35791738
2010/08/12	00:00:00	11 0 27.857	+ 1 17 49.63	0.35931240
2010/08/13	00:00:00	11 54 46.904	- 4 58 38.21	0.36237481
2010/08/14	00:00:00	12 48 52.874	-10 50 28.97	0.36673823
2010/08/15	00:00:00	13 43 26.431	-15 57 39.98	0.37194994
2010/08/16	00:00:00	14 38 49.886	-20 4 20.99	0.37754935
2010/08/17	00:00:00	15 34 59.957	-22 59 10.75	0.38312920
2010/08/18	00:00:00	16 31 26.444	-24 35 42.19	0.38837107
2010/08/19	00:00:00	17 27 19.790	-24 52 45.09	0.39305685
2010/08/20	00:00:00	18 21 46.345	-23 54 16.68	0.39706157
2010/08/21	00:00:00	19 14 4.635	-21 48 22.64	0.40033491
2010/08/22	00:00:00	20 3 55.184	-18 45 43.54	0.40287697
2010/08/23	00:00:00	20 51 21.540	-14 58 1.45	0.40471325
2010/08/24	00:00:00	21 36 45.527	-10 36 53.48	0.40587230
2010/08/25	00:00:00	22 20 41.012	- 5 53 19.47	0.40636879
2010/08/26	00:00:00	23 3 48.873	- 0 57 37.17	0.40619386
2010/08/27	00:00:00	23 46 53.787	+ 4 0 24.62	0.40531371
2010/08/28	00:00:00	0 30 42.295	+ 8 51 1.82	0.40367665
2010/08/29	00:00:00	1 16 1.048	+13 24 4.45	0.40122750
2010/08/30	00:00:00	2 3 33.921	+17 28 24.71	0.39792801
2010/08/31	00:00:00	2 53 56.642	+20 51 33.67	0.39378102
2010/09/01	00:00:00	3 47 28.227	+23 19 45.03	0.38885550
2010/09/02	00:00:00	4 44 0.840	+24 38 51.36	0.38330897
2010/09/03	00:00:00	5 42 53.642	+24 36 30.44	0.37740253
2010/09/04	00:00:00	6 42 58.443	+23 5 3.63	0.37150245
2010/09/05	00:00:00	7 42 59.561	+20 4 20.87	0.36606145
2010/09/06	00:00:00	8 41 58.771	+15 42 56.30	0.36157419
2010/09/07	00:00:00	9 39 31.153	+10 17 28.52	0.35850766
2010/09/08	00:00:00	10 35 45.650	+ 4 10 37.72	0.35721752
2010/09/09	00:00:00	11 31 14.722	- 2 11 33.21	0.35787311
2010/09/10	00:00:00	12 26 40.219	- 8 22 22.43	0.36041738
2010/09/11	00:00:00	13 22 39.433	-13 56 58.84	0.36457768
2010/09/12	00:00:00	14 19 32.638	-18 34 26.21	0.36992285

Date	Time	Alpha	Decl.	Dist.
2010/09/13	00:00:00	15 17 13.841	-21 59 18.15	0.37594491
2010/09/14	00:00:00	16 15 8.526	-24 2 42.59	0.38213925
2010/09/15	00:00:00	17 12 21.947	-24 42 43.21	0.38806542
2010/09/16	00:00:00	18 7 56.289	-24 3 38.79	0.39338236
2010/09/17	00:00:00	19 1 8.464	-22 14 21.41	0.39786034
2010/09/18	00:00:00	19 51 39.981	-19 26 8.07	0.40137572
2010/09/19	00:00:00	20 39 36.881	-15 50 51.27	0.40389471
2010/09/20	00:00:00	21 25 23.689	-11 39 54.89	0.40545116
2010/09/21	00:00:00	22 9 36.322	- 7 3 54.12	0.40612202
2010/09/22	00:00:00	22 52 56.639	- 2 12 44.89	0.40600336
2010/09/23	00:00:00	23 36 9.076	+ 2 43 52.47	0.40518927
2010/09/24	00:00:00	0 19 58.609	+ 7 36 5.49	0.40375603
2010/09/25	00:00:00	1 5 8.935	+12 13 23.73	0.40175319
2010/09/26	00:00:00	1 52 19.678	+16 24 19.62	0.39920316
2010/09/27	00:00:00	2 42 1.574	+19 56 23.12	0.39610946
2010/09/28	00:00:00	3 34 29.408	+22 36 22.10	0.39247312
2010/09/29	00:00:00	4 29 34.369	+24 11 22.00	0.38831524
2010/09/30	00:00:00	5 26 40.342	+24 30 29.44	0.38370241
2010/10/01	00:00:00	6 24 49.642	+23 26 59.00	0.37877078
2010/10/02	00:00:00	7 22 59.288	+20 59 57.52	0.37374309
2010/10/03	00:00:00	8 20 20.899	+17 15 4.51	0.36893186
2010/10/04	00:00:00	9 16 33.948	+12 24 6.64	0.36472226
2010/10/05	00:00:00	10 11 47.570	+ 6 43 59.08	0.36153027
2010/10/06	00:00:00	11 6 33.423	+ 0 35 41.69	0.35973831
2010/10/07	00:00:00	12 1 34.434	- 5 36 50.09	0.35962038
2010/10/08	00:00:00	12 57 32.113	-11 28 18.28	0.36127769
2010/10/09	00:00:00	13 54 53.081	-16 34 13.38	0.36460719
2010/10/10	00:00:00	14 53 36.310	-20 33 38.45	0.36931482
2010/10/11	00:00:00	15 53 6.021	-23 11 57.58	0.37496789
2010/10/12	00:00:00	16 52 17.224	-24 22 55.66	0.38106774
2010/10/13	00:00:00	17 49 55.408	-24 8 50.98	0.38712120
2010/10/14	00:00:00	18 45 0.955	-22 38 42.86	0.39269616

Date	Time	Alpha	Decl.	Dist.
2010/10/15	00:00:00	19 37 4.632	-20 5 7.28	0.39745597
2010/10/16	00:00:00	20 26 8.881	-16 41 25.58	0.40117433
2010/10/17	00:00:00	21 12 39.860	-12 40 0.90	0.40373508
2010/10/18	00:00:00	21 57 17.683	- 8 11 46.15	0.40512167
2010/10/19	00:00:00	22 40 49.060	- 3 26 20.21	0.40539990
2010/10/20	00:00:00	23 24 2.950	+ 1 27 12.69	0.40469653
2010/10/21	00:00:00	0 7 48.196	+ 6 19 37.41	0.40317565
2010/10/22	00:00:00	0 52 51.627	+11 0 46.42	0.40101477
2010/10/23	00:00:00	1 39 55.183	+15 19 10.50	0.39838273
2010/10/24	00:00:00	2 29 30.821	+19 1 51.92	0.39542204
2010/10/25	00:00:00	3 21 52.937	+21 54 54.09	0.39223843
2010/10/26	00:00:00	4 16 50.211	+23 44 40.36	0.38889968
2010/10/27	00:00:00	5 13 41.990	+24 19 59.71	0.38544463
2010/10/28	00:00:00	6 11 25.199	+23 34 25.01	0.38190139
2010/10/29	00:00:00	7 8 52.524	+21 27 44.19	0.37831148
2010/10/30	00:00:00	8 5 13.661	+18 6 2.03	0.37475503
2010/10/31	00:00:00	9 0 8.592	+13 40 27.07	0.37137038
2010/11/01	00:00:00	9 53 48.660	+ 8 25 40.78	0.36836143
2010/11/02	00:00:00	10 46 49.150	+ 2 38 56.66	0.36598678
2010/11/03	00:00:00	11 39 58.811	- 3 20 22.93	0.36452808
2010/11/04	00:00:00	12 34 8.800	- 9 10 57.54	0.36424071
2010/11/05	00:00:00	13 30 0.554	-14 30 6.53	0.36529686
2010/11/06	00:00:00	14 27 51.862	-18 55 28.51	0.36773702
2010/11/07	00:00:00	15 27 23.895	-22 7 53.53	0.37144543
2010/11/08	00:00:00	16 27 37.385	-23 54 50.88	0.37615769
2010/11/09	00:00:00	17 27 6.404	-24 13 0.44	0.38149739
2010/11/10	00:00:00	18 24 26.905	-23 8 11.17	0.38702977
2010/11/11	00:00:00	19 18 43.521	-20 52 37.56	0.39231776
2010/11/12	00:00:00	20 9 40.016	-17 41 10.08	0.39696951
2010/11/13	00:00:00	20 57 33.632	-13 48 12.49	0.40067219
2010/11/14	00:00:00	21 43 2.992	- 9 26 13.38	0.40321148
2010/11/15	00:00:00	22 26 57.475	- 4 45 37.81	0.40447922
2010/11/16	00:00:00	23 10 10.619	+ 0 4 35.00	0.40447141

Date	Time	Alpha	Decl.	Dist.
2010/11/17	00:00:00	23 53 36.750	+ 4 55 54.83	0.40327904
2010/11/18	00:00:00	0 38 9.030	+ 9 39 20.32	0.40107278
2010/11/19	00:00:00	1 24 36.982	+14 4 25.64	0.39808248
2010/11/20	00:00:00	2 13 41.742	+17 58 46.43	0.39457203
2010/11/21	00:00:00	3 5 47.876	+21 8 4.27	0.39081137
2010/11/22	00:00:00	4 0 52.760	+23 17 14.24	0.38704820
2010/11/23	00:00:00	4 58 18.679	+24 12 47.76	0.38348363
2010/11/24	00:00:00	5 56 56.164	+23 46 1.05	0.38025643
2010/11/25	00:00:00	6 55 23.002	+21 55 26.56	0.37743980
2010/11/26	00:00:00	7 52 31.213	+18 47 22.55	0.37505220
2010/11/27	00:00:00	8 47 46.587	+14 34 12.90	0.37307987
2010/11/28	00:00:00	9 41 12.486	+ 9 31 52.75	0.37150559
2010/11/29	00:00:00	10 33 21.767	+ 3 57 45.28	0.37033587
2010/11/30	00:00:00	11 25 4.879	- 1 50 14.56	0.36961848
2010/12/01	00:00:00	12 17 18.645	- 7 33 42.91	0.36944469
2010/12/02	00:00:00	13 10 55.690	-12 53 33.46	0.36993382
2010/12/03	00:00:00	14 6 32.588	-17 30 10.71	0.37120278
2010/12/04	00:00:00	15 4 16.342	-21 4 48.44	0.37332786
2010/12/05	00:00:00	16 3 33.714	-23 22 7.24	0.37630919
2010/12/06	00:00:00	17 3 12.869	-24 13 29.03	0.38004836
2010/12/07	00:00:00	18 1 43.475	-23 39 5.79	0.38434555
2010/12/08	00:00:00	18 57 47.189	-21 47 29.14	0.38891645
2010/12/09	00:00:00	19 50 40.311	-18 52 30.94	0.39342398
2010/12/10	00:00:00	20 40 18.266	-15 9 41.65	0.39751663
2010/12/11	00:00:00	21 27 6.644	-10 53 28.78	0.40086606
2010/12/12	00:00:00	22 11 48.965	- 6 16 7.78	0.40319893
2010/12/13	00:00:00	22 55 17.354	- 1 27 45.38	0.40432084
2010/12/14	00:00:00	23 38 27.250	+ 3 22 56.61	0.40413198
2010/12/15	00:00:00	0 22 14.800	+ 8 7 40.10	0.40263521
2010/12/16	00:00:00	1 7 34.944	+12 37 25.70	0.39993699
2010/12/17	00:00:00	1 55 18.127	+16 41 34.17	0.39624102
2010/12/18	00:00:00	2 46 3.718	+20 7 10.55	0.39183378

Date	Time	Alpha	Decl.	Dist.
2010/12/19	00:00:00	3 40 9.267	+22 39 18.17	0.38706113
2010/12/20	00:00:00	4 37 18.115	+24 2 35.79	0.38229566
2010/12/21	00:00:00	5 36 33.471	+24 4 27.74	0.37789673
2010/12/22	00:00:00	6 36 28.949	+22 38 51.60	0.37416843
2010/12/23	00:00:00	7 35 36.037	+19 48 45.69	0.37132342
2010/12/24	00:00:00	8 32 53.458	+15 45 46.51	0.36946208
2010/12/25	00:00:00	9 28 1.445	+10 47 22.68	0.36857332
2010/12/26	00:00:00	10 21 18.061	+ 5 13 34.87	0.36855746
2010/12/27	00:00:00	11 13 26.407	- 0 35 27.81	0.36926447
2010/12/28	00:00:00	12 5 21.181	- 6 20 30.63	0.37053633
2010/12/29	00:00:00	12 57 57.278	-11 43 18.65	0.37224198
2010/12/30	00:00:00	13 51 59.215	-16 26 25.52	0.37429690
2010/12/31	00:00:00	14 47 49.817	-20 13 27.96	0.37666435
2011/01/01	00:00:00	15 45 19.557	-22 50 17.03	0.37934027

http://digilander.libero.it/occultazioni

The data produced in the ephemeris is:

Right Asc.	right ascension, in hours, min, sec.
Declination	declination, in deg, min, sec
Distance	the geocentric distance to the planet, in AU
dia	the planet's apparent equatorial diameter, in arc sec
Po	Position Angle of the Sun's north pole
Bo	Latitude of the earth, referred to the Sun's equator
Lo	Longitude of the central meridian of the Sun
Carrington Rotation #	The current Carrington Solar Rotation number - in continuation of the series that started on 1983 Nov 9.946

Sun

Sun
Apparent position

Date			Right Asc.			Declination			Distance	dia	Po	Bo	Lo	Carrington
year	mth	d	h	m	s	o	'	"	AU	"	o	o	o	Rotation #
2010	Jan	1	18	45	28.22	-23	1	38.3	0.983303	1951.9	2.10	-3.01	32.98	2091
2010	Jan	2	18	49	52.94	-22	56	37.1	0.983293	1951.9	1.62	-3.12	19.81	2091
2010	Jan	3	18	54	17.32	-22	51	8.6	0.983290	1951.9	1.13	-3.24	6.64	2091
2010	Jan	4	18	58	41.34	-22	45	12.8	0.983293	1951.9	0.65	-3.35	353.47	2092
2010	Jan	5	19	3	4.98	-22	38	49.9	0.983302	1951.9	0.16	-3.47	340.30	2092
2010	Jan	6	19	7	28.20	-22	31	59.9	0.983317	1951.8	-0.32	-3.58	327.13	2092
2010	Jan	7	19	11	51.00	-22	24	43.2	0.983338	1951.8	-0.80	-3.69	313.96	2092
2010	Jan	8	19	16	13.33	-22	16	59.9	0.983364	1951.7	-1.28	-3.80	300.79	2092
2010	Jan	9	19	20	35.19	-22	8	50.3	0.983395	1951.7	-1.77	-3.91	287.62	2092
2010	Jan	10	19	24	56.53	-22	0	14.5	0.983431	1951.6	-2.24	-4.02	274.45	2092
2010	Jan	11	19	29	17.33	-21	51	12.9	0.983471	1951.5	-2.72	-4.13	261.28	2092
2010	Jan	12	19	33	37.57	-21	41	45.8	0.983515	1951.4	-3.20	-4.23	248.12	2092
2010	Jan	13	19	37	57.22	-21	31	53.3	0.983563	1951.3	-3.67	-4.33	234.95	2092
2010	Jan	14	19	42	16.25	-21	21	35.8	0.983615	1951.2	-4.15	-4.44	221.78	2092
2010	Jan	15	19	46	34.64	-21	10	53.6	0.983671	1951.1	-4.62	-4.54	208.61	2092
2010	Jan	16	19	50	52.36	-20	59	47.0	0.983730	1951.0	-5.08	-4.64	195.45	2092
2010	Jan	17	19	55	9.40	-20	48	16.4	0.983794	1950.9	-5.55	-4.74	182.28	2092
2010	Jan	18	19	59	25.72	-20	36	22.1	0.983861	1950.7	-6.01	-4.83	169.11	2092
2010	Jan	19	20	3	41.32	-20	24	4.3	0.983932	1950.6	-6.47	-4.93	155.95	2092
2010	Jan	20	20	7	56.18	-20	11	23.5	0.984007	1950.5	-6.93	-5.02	142.78	2092
2010	Jan	21	20	12	10.28	-19	58	20.0	0.984086	1950.3	-7.38	-5.11	129.61	2092
2010	Jan	22	20	16	23.61	-19	44	54.1	0.984169	1950.1	-7.83	-5.21	116.45	2092
2010	Jan	23	20	20	36.16	-19	31	6.3	0.984257	1950.0	-8.28	-5.29	103.28	2092
2010	Jan	24	20	24	47.91	-19	16	56.9	0.984350	1949.8	-8.72	-5.38	90.11	2092
2010	Jan	25	20	28	58.86	-19	2	26.2	0.984447	1949.6	-9.16	-5.47	76.95	2092
2010	Jan	26	20	33	9.01	-18	47	34.8	0.984550	1949.4	-9.60	-5.55	63.78	2092
2010	Jan	27	20	37	18.34	-18	32	22.8	0.984658	1949.2	-10.03	-5.63	50.61	2092
2010	Jan	28	20	41	26.85	-18	16	50.8	0.984771	1948.9	-10.46	-5.71	37.45	2092

Sun
Apparent position

Date			Right Asc.			Declination			Distance	dia	Po	Bo	Lo	Carrington
year	mth	d	h	m	s	o	'	"	AU	"	o	o	o	Rotation #
2010	Jan	29	20	45	34.55	-18	0	59.2	0.984891	1948.7	-10.88	-5.79	24.28	2092
2010	Jan	30	20	49	41.41	-17	44	48.2	0.985017	1948.5	-11.30	-5.87	11.11	2092
2010	Jan	31	20	53	47.46	-17	28	18.2	0.985149	1948.2	-11.71	-5.94	357.95	2093
2010	Feb	1	20	57	52.69	-17	11	29.6	0.985287	1947.9	-12.12	-6.01	344.78	2093
2010	Feb	2	21	1	57.11	-16	54	22.8	0.985431	1947.6	-12.53	-6.09	331.61	2093
2010	Feb	3	21	6	0.73	-16	36	58.1	0.985581	1947.3	-12.93	-6.15	318.45	2093
2010	Feb	4	21	10	3.55	-16	19	15.9	0.985736	1947.0	-13.33	-6.22	305.28	2093
2010	Feb	5	21	14	5.57	-16	1	16.7	0.985895	1946.7	-13.72	-6.29	292.11	2093
2010	Feb	6	21	18	6.82	-15	43	0.7	0.986060	1946.4	-14.11	-6.35	278.95	2093
2010	Feb	7	21	22	7.28	-15	24	28.5	0.986228	1946.1	-14.49	-6.41	265.78	2093
2010	Feb	8	21	26	6.96	-15	5	40.4	0.986401	1945.7	-14.86	-6.47	252.61	2093
2010	Feb	9	21	30	5.87	-14	46	36.9	0.986577	1945.4	-15.24	-6.53	239.45	2093
2010	Feb	10	21	34	4.00	-14	27	18.5	0.986756	1945.0	-15.60	-6.58	226.28	2093
2010	Feb	11	21	38	1.37	-14	7	45.5	0.986939	1944.7	-15.96	-6.63	213.11	2093
2010	Feb	12	21	41	57.98	-13	47	58.4	0.987124	1944.3	-16.32	-6.69	199.95	2093
2010	Feb	13	21	45	53.83	-13	27	57.6	0.987313	1943.9	-16.67	-6.73	186.78	2093
2010	Feb	14	21	49	48.94	-13	7	43.6	0.987503	1943.5	-17.01	-6.78	173.61	2093
2010	Feb	15	21	53	43.30	-12	47	16.8	0.987697	1943.2	-17.35	-6.82	160.45	2093
2010	Feb	16	21	57	36.93	-12	26	37.7	0.987893	1942.8	-17.69	-6.87	147.28	2093
2010	Feb	17	22	1	29.84	-12	5	46.6	0.988091	1942.4	-18.02	-6.91	134.11	2093
2010	Feb	18	22	5	22.03	-11	44	43.9	0.988292	1942.0	-18.34	-6.95	120.94	2093
2010	Feb	19	22	9	13.53	-11	23	30.2	0.988495	1941.6	-18.66	-6.98	107.77	2093
2010	Feb	20	22	13	4.34	-11	2	5.9	0.988701	1941.2	-18.97	-7.01	94.60	2093
2010	Feb	21	22	16	54.48	-10	40	31.3	0.988910	1940.8	-19.27	-7.05	81.44	2093
2010	Feb	22	22	20	43.95	-10	18	46.9	0.989122	1940.4	-19.57	-7.07	68.27	2093
2010	Feb	23	22	24	32.78	-	9	56	53.2	0.989337	1939.9	-19.86	-7.10	55.10	2093
2010	Feb	24	22	28	20.98	-	9	34	50.4	0.989556	1939.5	-20.15	-7.13	41.93	2093
2010	Feb	25	22	32	8.56	-	9	12	39.1	0.989778	1939.1	-20.43	-7.15	28.75	2093

Sun
Apparent position

Date			Right Asc.			Declination			Distance	dia	Po	Bo	Lo	Carrington
year	mth	d	h	m	s	o	'	"	AU	"	o	o	o	Rotation #
2010	Feb	26	22	35	55.54	- 8	50	19.7	0.990005	1938.6	-20.70	-7.17	15.58	2093
2010	Feb	27	22	39	41.94	- 8	27	52.4	0.990235	1938.2	-20.97	-7.19	2.41	2093
2010	Feb	28	22	43	27.77	- 8	5	17.8	0.990470	1937.7	-21.23	-7.20	349.24	2094
2010	Mar	1	22	47	13.07	- 7	42	36.0	0.990709	1937.3	-21.49	-7.22	336.07	2094
2010	Mar	2	22	50	57.85	- 7	19	47.6	0.990953	1936.8	-21.74	-7.23	322.89	2094
2010	Mar	3	22	54	42.14	- 6	56	52.8	0.991201	1936.3	-21.98	-7.24	309.72	2094
2010	Mar	4	22	58	25.97	- 6	33	52.0	0.991452	1935.8	-22.22	-7.24	296.55	2094
2010	Mar	5	23	2	9.36	- 6	10	45.5	0.991708	1935.3	-22.45	-7.25	283.37	2094
2010	Mar	6	23	5	52.33	- 5	47	33.8	0.991966	1934.8	-22.68	-7.25	270.20	2094
2010	Mar	7	23	9	34.89	- 5	24	17.3	0.992227	1934.3	-22.89	-7.25	257.02	2094
2010	Mar	8	23	13	17.08	- 5	0	56.2	0.992491	1933.8	-23.11	-7.25	243.85	2094
2010	Mar	9	23	16	58.90	- 4	37	31.1	0.992757	1933.3	-23.31	-7.25	230.67	2094
2010	Mar	10	23	20	40.38	- 4	14	2.4	0.993024	1932.7	-23.51	-7.24	217.49	2094
2010	Mar	11	23	24	21.52	- 3	50	30.3	0.993293	1932.2	-23.70	-7.23	204.32	2094
2010	Mar	12	23	28	2.36	- 3	26	55.4	0.993563	1931.7	-23.88	-7.22	191.14	2094
2010	Mar	13	23	31	42.91	- 3	3	18.0	0.993835	1931.2	-24.06	-7.21	177.96	2094
2010	Mar	14	23	35	23.18	- 2	39	38.5	0.994107	1930.6	-24.24	-7.19	164.78	2094
2010	Mar	15	23	39	3.19	- 2	15	57.4	0.994379	1930.1	-24.40	-7.17	151.60	2094
2010	Mar	16	23	42	42.97	- 1	52	14.9	0.994652	1929.6	-24.56	-7.15	138.42	2094
2010	Mar	17	23	46	22.52	- 1	28	31.5	0.994925	1929.1	-24.71	-7.13	125.24	2094
2010	Mar	18	23	50	1.88	- 1	4	47.6	0.995198	1928.5	-24.85	-7.11	112.06	2094
2010	Mar	19	23	53	41.05	- 0	41	3.6	0.995472	1928.0	-24.99	-7.08	98.88	2094
2010	Mar	20	23	57	20.06	- 0	17	19.8	0.995745	1927.5	-25.12	-7.05	85.70	2094
2010	Mar	21	0	0	58.92	0	6	23.4	0.996019	1926.9	-25.25	-7.02	72.51	2094
2010	Mar	22	0	4	37.66	0	30	5.5	0.996294	1926.4	-25.36	-6.99	59.33	2094
2010	Mar	23	0	8	16.28	0	53	46.3	0.996569	1925.9	-25.47	-6.96	46.14	2094
2010	Mar	24	0	11	54.80	1	17	25.4	0.996845	1925.3	-25.58	-6.92	32.96	2094
2010	Mar	25	0	15	33.25	1	41	2.3	0.997121	1924.8	-25.67	-6.88	19.77	2094
2010	Mar	26	0	19	11.64	2	4	36.8	0.997399	1924.3	-25.76	-6.84	6.58	2094

Sun

Apparent position

Date			Right Asc.			Declination			Distance	dia	Po	Bo	Lo	Carrington
year	mth	d	h	m	s	o	'	"	AU	"	o	o	o	Rotation #
2010	Mar	27	0	22	50.00	2	28	8.5	0.997679	1923.7	-25.85	-6.80	353.40	2095
2010	Mar	28	0	26	28.34	2	51	37.0	0.997960	1923.2	-25.92	-6.75	340.21	2095
2010	Mar	29	0	30	6.69	3	15	2.1	0.998244	1922.6	-25.99	-6.71	327.02	2095
2010	Mar	30	0	33	45.08	3	38	23.4	0.998529	1922.1	-26.05	-6.66	313.83	2095
2010	Mar	31	0	37	23.53	4	1	40.6	0.998816	1921.5	-26.10	-6.61	300.63	2095
2010	Apr	1	0	41	2.07	4	24	53.5	0.999105	1921.0	-26.15	-6.55	287.44	2095
2010	Apr	2	0	44	40.72	4	48	1.6	0.999395	1920.4	-26.19	-6.50	274.25	2095
2010	Apr	3	0	48	19.51	5	11	4.7	0.999687	1919.9	-26.22	-6.44	261.06	2095
2010	Apr	4	0	51	58.46	5	34	2.5	0.999980	1919.3	-26.25	-6.39	247.86	2095
2010	Apr	5	0	55	37.57	5	56	54.5	1.000273	1918.7	-26.26	-6.33	234.67	2095
2010	Apr	6	0	59	16.89	6	19	40.5	1.000566	1918.2	-26.28	-6.26	221.47	2095
2010	Apr	7	1	2	56.41	6	42	20.0	1.000859	1917.6	-26.28	-6.20	208.27	2095
2010	Apr	8	1	6	36.16	7	4	52.7	1.001151	1917.1	-26.28	-6.13	195.08	2095
2010	Apr	9	1	10	16.15	7	27	18.3	1.001443	1916.5	-26.26	-6.07	181.88	2095
2010	Apr	10	1	13	56.41	7	49	36.3	1.001734	1915.9	-26.25	-6.00	168.68	2095
2010	Apr	11	1	17	36.94	8	11	46.6	1.002023	1915.4	-26.22	-5.93	155.48	2095
2010	Apr	12	1	21	17.77	8	33	48.5	1.002311	1914.8	-26.19	-5.85	142.28	2095
2010	Apr	13	1	24	58.91	8	55	42.0	1.002597	1914.3	-26.15	-5.78	129.08	2095
2010	Apr	14	1	28	40.37	9	17	26.4	1.002881	1913.7	-26.10	-5.70	115.88	2095
2010	Apr	15	1	32	22.16	9	39	1.6	1.003162	1913.2	-26.04	-5.63	102.67	2095
2010	Apr	16	1	36	4.31	10	0	27.2	1.003441	1912.7	-25.98	-5.55	89.47	2095
2010	Apr	17	1	39	46.82	10	21	42.8	1.003718	1912.1	-25.91	-5.47	76.27	2095
2010	Apr	18	1	43	29.70	10	42	48.1	1.003993	1911.6	-25.83	-5.39	63.06	2095
2010	Apr	19	1	47	12.96	11	3	42.7	1.004265	1911.1	-25.75	-5.30	49.86	2095
2010	Apr	20	1	50	56.61	11	24	26.3	1.004535	1910.6	-25.66	-5.22	36.65	2095
2010	Apr	21	1	54	40.67	11	44	58.4	1.004803	1910.1	-25.56	-5.13	23.44	2095
2010	Apr	22	1	58	25.13	12	5	18.9	1.005069	1909.6	-25.45	-5.04	10.23	2095
2010	Apr	23	2	2	10.01	12	25	27.3	1.005334	1909.1	-25.34	-4.95	357.02	2096
2010	Apr	24	2	5	55.33	12	45	23.4	1.005598	1908.6	-25.22	-4.86	343.81	2096

Sun

Apparent position

Date			Right Asc.			Declination			Distance	dia	Po	Bo	Lo	Carrington
year	mth	d	h	m	s	o	'	"	AU	"	o	o	o	Rotation #
2010	Apr	25	2	9	41.10	13	5	6.7	1.005860	1908.1	-25.09	-4.77	330.60	2096
2010	Apr	26	2	13	27.32	13	24	37.1	1.006122	1907.6	-24.95	-4.68	317.39	2096
2010	Apr	27	2	17	14.03	13	43	54.2	1.006384	1907.1	-24.81	-4.58	304.18	2096
2010	Apr	28	2	21	1.23	14	2	57.8	1.006644	1906.6	-24.66	-4.49	290.96	2096
2010	Apr	29	2	24	48.94	14	21	47.5	1.006905	1906.1	-24.50	-4.39	277.75	2096
2010	Apr	30	2	28	37.18	14	40	23.0	1.007164	1905.6	-24.33	-4.29	264.53	2096
2010	May	1	2	32	25.94	14	58	44.1	1.007423	1905.1	-24.16	-4.19	251.32	2096
2010	May	2	2	36	15.26	15	16	50.5	1.007681	1904.6	-23.98	-4.09	238.10	2096
2010	May	3	2	40	5.12	15	34	41.7	1.007937	1904.1	-23.79	-3.99	224.88	2096
2010	May	4	2	43	55.55	15	52	17.6	1.008192	1903.7	-23.60	-3.88	211.66	2096
2010	May	5	2	47	46.54	16	9	37.7	1.008445	1903.2	-23.40	-3.78	198.45	2096
2010	May	6	2	51	38.11	16	26	41.8	1.008695	1902.7	-23.19	-3.68	185.23	2096
2010	May	7	2	55	30.25	16	43	29.5	1.008943	1902.2	-22.98	-3.57	172.01	2096
2010	May	8	2	59	22.98	17	0	0.6	1.009189	1901.8	-22.75	-3.46	158.79	2096
2010	May	9	3	3	16.28	17	16	14.7	1.009431	1901.3	-22.53	-3.35	145.56	2096
2010	May	10	3	7	10.18	17	32	11.4	1.009669	1900.9	-22.29	-3.25	132.34	2096
2010	May	11	3	11	4.66	17	47	50.6	1.009904	1900.4	-22.05	-3.14	119.12	2096
2010	May	12	3	14	59.73	18	3	11.9	1.010135	1900.0	-21.80	-3.03	105.90	2096
2010	May	13	3	18	55.39	18	18	14.9	1.010362	1899.6	-21.54	-2.91	92.67	2096
2010	May	14	3	22	51.62	18	32	59.4	1.010584	1899.2	-21.28	-2.80	79.45	2096
2010	May	15	3	26	48.43	18	47	25.2	1.010802	1898.7	-21.01	-2.69	66.22	2096
2010	May	16	3	30	45.81	19	1	31.9	1.011015	1898.3	-20.73	-2.58	53.00	2096
2010	May	17	3	34	43.74	19	15	19.2	1.011224	1898.0	-20.45	-2.46	39.77	2096
2010	May	18	3	38	42.22	19	28	46.9	1.011428	1897.6	-20.16	-2.35	26.55	2096
2010	May	19	3	42	41.24	19	41	54.6	1.011628	1897.2	-19.86	-2.23	13.32	2096
2010	May	20	3	46	40.78	19	54	42.2	1.011824	1896.8	-19.56	-2.12	0.09	2096
2010	May	21	3	50	40.84	20	7	9.3	1.012016	1896.5	-19.25	-2.00	346.86	2097
2010	May	22	3	54	41.41	20	19	15.7	1.012204	1896.1	-18.94	-1.88	333.63	2097

Sun

Apparent position

Date			Right Asc.			Declination			Distance	dia	Po	Bo	Lo	Carrington
year	mth	d	h	m	s	o	'	"	AU	"	o	o	o	Rotation #
2010	May	23	3	58	42.48	20	31	1.2	1.012390	1895.8	-18.62	-1.76	320.41	2097
2010	May	24	4	2	44.05	20	42	25.5	1.012572	1895.4	-18.29	-1.65	307.17	2097
2010	May	25	4	6	46.12	20	53	28.4	1.012752	1895.1	-17.96	-1.53	293.94	2097
2010	May	26	4	10	48.67	21	4	9.8	1.012929	1894.8	-17.62	-1.41	280.71	2097
2010	May	27	4	14	51.71	21	14	29.4	1.013103	1894.4	-17.28	-1.29	267.48	2097
2010	May	28	4	18	55.21	21	24	27.0	1.013275	1894.1	-16.93	-1.17	254.25	2097
2010	May	29	4	22	59.18	21	34	2.4	1.013445	1893.8	-16.58	-1.05	241.02	2097
2010	May	30	4	27	3.60	21	43	15.4	1.013612	1893.5	-16.22	-0.93	227.78	2097
2010	May	31	4	31	8.46	21	52	5.9	1.013777	1893.2	-15.85	-0.81	214.55	2097
2010	Jun	1	4	35	13.75	22	0	33.6	1.013938	1892.9	-15.48	-0.69	201.32	2097
2010	Jun	2	4	39	19.45	22	8	38.3	1.014096	1892.6	-15.11	-0.57	188.08	2097
2010	Jun	3	4	43	25.55	22	16	19.8	1.014251	1892.3	-14.73	-0.45	174.85	2097
2010	Jun	4	4	47	32.03	22	23	38.1	1.014402	1892.0	-14.35	-0.33	161.62	2097
2010	Jun	5	4	51	38.88	22	30	32.8	1.014549	1891.7	-13.96	-0.21	148.38	2097
2010	Jun	6	4	55	46.08	22	37	3.8	1.014692	1891.5	-13.57	-0.09	135.15	2097
2010	Jun	7	4	59	53.62	22	43	11.1	1.014831	1891.2	-13.17	0.03	121.91	2097
2010	Jun	8	5	4	1.46	22	48	54.4	1.014965	1891.0	-12.77	0.15	108.68	2097
2010	Jun	9	5	8	9.60	22	54	13.6	1.015093	1890.7	-12.36	0.28	95.44	2097
2010	Jun	10	5	12	18.01	22	59	8.6	1.015217	1890.5	-11.95	0.40	82.21	2097
2010	Jun	11	5	16	26.67	23	3	39.3	1.015334	1890.3	-11.54	0.52	68.97	2097
2010	Jun	12	5	20	35.55	23	7	45.7	1.015446	1890.1	-11.12	0.64	55.73	2097
2010	Jun	13	5	24	44.62	23	11	27.6	1.015552	1889.9	-10.70	0.76	42.50	2097
2010	Jun	14	5	28	53.85	23	14	44.9	1.015652	1889.7	-10.28	0.88	29.26	2097
2010	Jun	15	5	33	3.22	23	17	37.7	1.015747	1889.5	-9.86	1.00	16.03	2097
2010	Jun	16	5	37	12.69	23	20	5.8	1.015835	1889.3	-9.43	1.12	2.79	2097
2010	Jun	17	5	41	22.24	23	22	9.1	1.015917	1889.2	-8.99	1.23	349.55	2098
2010	Jun	18	5	45	31.83	23	23	47.7	1.015995	1889.0	-8.56	1.35	336.32	2098
2010	Jun	19	5	49	41.45	23	25	1.5	1.016067	1888.9	-8.12	1.47	323.08	2098

Sun
Apparent position

Date			Right Asc.			Declination			Distance	dia	Po	Bo	Lo	Carrington
year	mth	d	h	m	s	o	'	"	AU	"	o	o	o	Rotation #
2010	Jun	20	5	53	51.08	23	25	50.5	1.016135	1888.8	-7.69	1.59	309.84	2098
2010	Jun	21	5	58	0.69	23	26	14.8	1.016198	1888.7	-7.24	1.71	296.61	2098
2010	Jun	22	6	2	10.26	23	26	14.2	1.016257	1888.6	-6.80	1.82	283.37	2098
2010	Jun	23	6	6	19.77	23	25	48.9	1.016313	1888.5	-6.36	1.94	270.13	2098
2010	Jun	24	6	10	29.20	23	24	58.8	1.016365	1888.4	-5.91	2.06	256.90	2098
2010	Jun	25	6	14	38.54	23	23	44.1	1.016413	1888.3	-5.46	2.17	243.66	2098
2010	Jun	26	6	18	47.75	23	22	4.7	1.016458	1888.2	-5.01	2.29	230.42	2098
2010	Jun	27	6	22	56.82	23	20	0.7	1.016499	1888.1	-4.56	2.40	217.18	2098
2010	Jun	28	6	27	5.74	23	17	32.1	1.016537	1888.0	-4.11	2.51	203.95	2098
2010	Jun	29	6	31	14.47	23	14	39.0	1.016572	1888.0	-3.66	2.63	190.71	2098
2010	Jun	30	6	35	23.00	23	11	21.4	1.016603	1887.9	-3.21	2.74	177.47	2098
2010	Jul	1	6	39	31.31	23	7	39.5	1.016630	1887.9	-2.76	2.85	164.24	2098
2010	Jul	2	6	43	39.38	23	3	33.3	1.016653	1887.8	-2.30	2.96	151.00	2098
2010	Jul	3	6	47	47.20	22	59	2.8	1.016672	1887.8	-1.85	3.07	137.77	2098
2010	Jul	4	6	51	54.74	22	54	8.2	1.016686	1887.8	-1.39	3.18	124.53	2098
2010	Jul	5	6	56	1.99	22	48	49.7	1.016696	1887.7	-0.94	3.28	111.29	2098
2010	Jul	6	7	0	8.92	22	43	7.2	1.016701	1887.7	-0.49	3.39	98.06	2098
2010	Jul	7	7	4	15.52	22	37	1.1	1.016701	1887.7	-0.03	3.50	84.82	2098
2010	Jul	8	7	8	21.77	22	30	31.3	1.016696	1887.7	0.42	3.60	71.59	2098
2010	Jul	9	7	12	27.66	22	23	38.1	1.016685	1887.8	0.87	3.71	58.35	2098
2010	Jul	10	7	16	33.15	22	16	21.7	1.016667	1887.8	1.32	3.81	45.12	2098
2010	Jul	11	7	20	38.22	22	8	42.3	1.016644	1887.8	1.77	3.91	31.89	2098
2010	Jul	12	7	24	42.86	22	0	40.0	1.016615	1887.9	2.22	4.01	18.65	2098
2010	Jul	13	7	28	47.03	21	52	15.1	1.016579	1888.0	2.67	4.11	5.42	2098
2010	Jul	14	7	32	50.73	21	43	27.7	1.016537	1888.0	3.11	4.21	352.19	2099
2010	Jul	15	7	36	53.91	21	34	18.1	1.016488	1888.1	3.56	4.31	338.95	2099
2010	Jul	16	7	40	56.58	21	24	46.5	1.016434	1888.2	4.00	4.41	325.72	2099
2010	Jul	17	7	44	58.72	21	14	53.1	1.016375	1888.3	4.44	4.50	312.49	2099
2010	Jul	18	7	49	0.32	21	4	38.2	1.016310	1888.5	4.88	4.60	299.26	2099

Sun
Apparent position

Date			Right Asc.			Declination			Distance	dia	Po	Bo	Lo	Carrington
year	mth	d	h	m	s	o	'	"	AU	"	o	o	o	Rotation #
2010	Jul	19	7	53	1.36	20	54	1.9	1.016240	1888.6	5.32	4.69	286.03	2099
2010	Jul	20	7	57	1.84	20	43	4.5	1.016166	1888.7	5.75	4.78	272.79	2099
2010	Jul	21	8	1	1.74	20	31	46.3	1.016088	1888.9	6.18	4.87	259.56	2099
2010	Jul	22	8	5	1.07	20	20	7.5	1.016006	1889.0	6.61	4.96	246.33	2099
2010	Jul	23	8	8	59.82	20	8	8.4	1.015920	1889.2	7.04	5.05	233.10	2099
2010	Jul	24	8	12	57.97	19	55	49.1	1.015830	1889.4	7.47	5.13	219.87	2099
2010	Jul	25	8	16	55.54	19	43	10.0	1.015738	1889.5	7.89	5.22	206.64	2099
2010	Jul	26	8	20	52.50	19	30	11.3	1.015642	1889.7	8.31	5.30	193.41	2099
2010	Jul	27	8	24	48.87	19	16	53.2	1.015543	1889.9	8.72	5.38	180.19	2099
2010	Jul	28	8	28	44.64	19	3	15.9	1.015440	1890.1	9.13	5.46	166.96	2099
2010	Jul	29	8	32	39.80	18	49	19.8	1.015335	1890.3	9.54	5.54	153.73	2099
2010	Jul	30	8	36	34.37	18	35	5.1	1.015225	1890.5	9.95	5.62	140.50	2099
2010	Jul	31	8	40	28.35	18	20	32.0	1.015113	1890.7	10.35	5.69	127.28	2099
2010	Aug	1	8	44	21.73	18	5	40.8	1.014997	1890.9	10.75	5.77	114.05	2099
2010	Aug	2	8	48	14.52	17	50	31.8	1.014877	1891.1	11.15	5.84	100.82	2099
2010	Aug	3	8	52	6.72	17	35	5.2	1.014753	1891.4	11.54	5.91	87.60	2099
2010	Aug	4	8	55	58.34	17	19	21.4	1.014625	1891.6	11.93	5.98	74.37	2099
2010	Aug	5	8	59	49.38	17	3	20.6	1.014492	1891.8	12.32	6.05	61.15	2099
2010	Aug	6	9	3	39.83	16	47	3.2	1.014355	1892.1	12.70	6.11	47.93	2099
2010	Aug	7	9	7	29.71	16	30	29.5	1.014213	1892.4	13.08	6.18	34.70	2099
2010	Aug	8	9	11	19.01	16	13	39.7	1.014065	1892.6	13.45	6.24	21.48	2099
2010	Aug	9	9	15	7.73	15	56	34.3	1.013913	1892.9	13.82	6.30	8.26	2099
2010	Aug	10	9	18	55.87	15	39	13.5	1.013754	1893.2	14.18	6.36	355.04	2100
2010	Aug	11	9	22	43.42	15	21	37.7	1.013590	1893.5	14.54	6.42	341.82	2100
2010	Aug	12	9	26	30.40	15	3	47.2	1.013421	1893.8	14.90	6.48	328.60	2100
2010	Aug	13	9	30	16.81	14	45	42.3	1.013246	1894.2	15.25	6.53	315.38	2100
2010	Aug	14	9	34	2.65	14	27	23.4	1.013066	1894.5	15.60	6.58	302.16	2100
2010	Aug	15	9	37	47.94	14	8	50.8	1.012882	1894.9	15.94	6.63	288.94	2100

Sun
Apparent position

Date			Right Asc.			Declination			Distance	dia	Po	Bo	Lo	Carrington
year	mth	d	h	m	s	o	'	"	AU	"	o	o	o	Rotation #
2010	Aug	16	9	41	32.67	13	50	4.8	1.012693	1895.2	16.28	6.68	275.72	2100
2010	Aug	17	9	45	16.86	13	31	5.8	1.012500	1895.6	16.61	6.73	262.51	2100
2010	Aug	18	9	49	0.52	13	11	54.0	1.012304	1895.9	16.94	6.77	249.29	2100
2010	Aug	19	9	52	43.66	12	52	29.7	1.012104	1896.3	17.27	6.81	236.07	2100
2010	Aug	20	9	56	26.30	12	32	53.4	1.011902	1896.7	17.59	6.85	222.85	2100
2010	Aug	21	10	0	8.44	12	13	5.2	1.011697	1897.1	17.90	6.89	209.64	2100
2010	Aug	22	10	3	50.10	11	53	5.6	1.011489	1897.5	18.21	6.93	196.42	2100
2010	Aug	23	10	7	31.29	11	32	54.7	1.011280	1897.9	18.51	6.97	183.21	2100
2010	Aug	24	10	11	12.03	11	12	32.9	1.011068	1898.3	18.81	7.00	169.99	2100
2010	Aug	25	10	14	52.34	10	52	0.4	1.010854	1898.7	19.11	7.03	156.78	2100
2010	Aug	26	10	18	32.24	10	31	17.7	1.010638	1899.1	19.40	7.06	143.57	2100
2010	Aug	27	10	22	11.74	10	10	24.9	1.010420	1899.5	19.68	7.09	130.35	2100
2010	Aug	28	10	25	50.86	9	49	22.3	1.010200	1899.9	19.96	7.11	117.14	2100
2010	Aug	29	10	29	29.62	9	28	10.3	1.009978	1900.3	20.23	7.13	103.93	2100
2010	Aug	30	10	33	8.05	9	6	49.2	1.009755	1900.7	20.50	7.15	90.72	2100
2010	Aug	31	10	36	46.15	8	45	19.2	1.009528	1901.1	20.76	7.17	77.51	2100
2010	Sep	1	10	40	23.96	8	23	40.7	1.009300	1901.6	21.02	7.19	64.30	2100
2010	Sep	2	10	44	1.47	8	1	54.0	1.009069	1902.0	21.27	7.21	51.09	2100
2010	Sep	3	10	47	38.72	7	39	59.4	1.008836	1902.5	21.52	7.22	37.88	2100
2010	Sep	4	10	51	15.72	7	17	57.2	1.008599	1902.9	21.76	7.23	24.67	2100
2010	Sep	5	10	54	52.49	6	55	47.9	1.008359	1903.3	21.99	7.24	11.47	2100
2010	Sep	6	10	58	29.03	6	33	31.7	1.008116	1903.8	22.22	7.24	358.26	2101
2010	Sep	7	11	2	5.37	6	11	9.0	1.007868	1904.3	22.45	7.25	345.05	2101
2010	Sep	8	11	5	41.51	5	48	40.2	1.007617	1904.8	22.66	7.25	331.85	2101
2010	Sep	9	11	9	17.47	5	26	5.6	1.007363	1905.2	22.88	7.25	318.64	2101
2010	Sep	10	11	12	53.27	5	3	25.5	1.007104	1905.7	23.08	7.25	305.44	2101
2010	Sep	11	11	16	28.92	4	40	40.4	1.006842	1906.2	23.28	7.25	292.23	2101
2010	Sep	12	11	20	4.44	4	17	50.5	1.006576	1906.7	23.48	7.24	279.03	2101

Sun

Apparent position

Date			Right Asc.			Declination			Distance	dia	Po	Bo	Lo	Carrington
year	mth	d	h	m	s	o	'	"	AU	"	o	o	o	Rotation #
2010	Sep	13	11	23	39.85	3	54	56.2	1.006308	1907.2	23.66	7.23	265.83	2101
2010	Sep	14	11	27	15.16	3	31	57.9	1.006036	1907.7	23.85	7.22	252.62	2101
2010	Sep	15	11	30	50.39	3	8	55.8	1.005763	1908.3	24.02	7.21	239.42	2101
2010	Sep	16	11	34	25.56	2	45	50.4	1.005488	1908.8	24.19	7.20	226.22	2101
2010	Sep	17	11	38	0.68	2	22	41.9	1.005212	1909.3	24.35	7.18	213.02	2101
2010	Sep	18	11	41	35.79	1	59	30.7	1.004934	1909.8	24.51	7.16	199.82	2101
2010	Sep	19	11	45	10.89	1	36	17.0	1.004656	1910.4	24.66	7.14	186.61	2101
2010	Sep	20	11	48	46.02	1	13	1.3	1.004376	1910.9	24.80	7.12	173.41	2101
2010	Sep	21	11	52	21.19	0	49	43.8	1.004097	1911.4	24.94	7.09	160.21	2101
2010	Sep	22	11	55	56.42	0	26	24.8	1.003817	1912.0	25.07	7.06	147.01	2101
2010	Sep	23	11	59	31.75	0	3	4.7	1.003538	1912.5	25.20	7.04	133.81	2101
2010	Sep	24	12	3	7.19	- 0	20	16.3	1.003258	1913.0	25.32	7.00	120.61	2101
2010	Sep	25	12	6	42.78	- 0	43	37.8	1.002979	1913.6	25.43	6.97	107.42	2101
2010	Sep	26	12	10	18.52	- 1	6	59.5	1.002700	1914.1	25.53	6.94	94.22	2101
2010	Sep	27	12	13	54.46	- 1	30	21.0	1.002421	1914.6	25.63	6.90	81.02	2101
2010	Sep	28	12	17	30.61	- 1	53	42.2	1.002142	1915.2	25.72	6.86	67.82	2101
2010	Sep	29	12	21	6.99	- 2	17	2.6	1.001864	1915.7	25.81	6.82	54.63	2101
2010	Sep	30	12	24	43.63	- 2	40	21.8	1.001585	1916.2	25.88	6.78	41.43	2101
2010	Oct	1	12	28	20.55	- 3	3	39.6	1.001307	1916.8	25.96	6.73	28.23	2101
2010	Oct	2	12	31	57.76	- 3	26	55.6	1.001028	1917.3	26.02	6.68	15.04	2101
2010	Oct	3	12	35	35.30	- 3	50	9.3	1.000748	1917.8	26.08	6.63	1.84	2101
2010	Oct	4	12	39	13.17	- 4	13	20.5	1.000467	1918.4	26.13	6.58	348.65	2102
2010	Oct	5	12	42	51.40	- 4	36	28.8	1.000185	1918.9	26.17	6.53	335.45	2102
2010	Oct	6	12	46	30.00	- 4	59	33.7	0.999902	1919.4	26.21	6.47	322.26	2102
2010	Oct	7	12	50	8.99	- 5	22	34.9	0.999618	1920.0	26.23	6.42	309.07	2102
2010	Oct	8	12	53	48.38	- 5	45	32.0	0.999332	1920.5	26.26	6.36	295.87	2102
2010	Oct	9	12	57	28.21	- 6	8	24.6	0.999044	1921.1	26.27	6.30	282.68	2102
2010	Oct	10	13	1	8.47	- 6	31	12.3	0.998755	1921.7	26.28	6.23	269.49	2102
2010	Oct	11	13	4	49.18	- 6	53	54.7	0.998465	1922.2	26.28	6.17	256.30	2102

Sun

Apparent position

Date			Right Asc.			Declination			Distance	dia	Po	Bo	Lo	Carrington
year	mth	d	h	m	s	o	'	"	AU	"	o	o	o	Rotation #
2010	Oct	12	13	8	30.36	- 7	16	31.5	0.998175	1922.8	26.27	6.10	243.11	2102
2010	Oct	13	13	12	12.03	- 7	39	2.3	0.997884	1923.3	26.25	6.03	229.91	2102
2010	Oct	14	13	15	54.19	- 8	1	26.6	0.997593	1923.9	26.23	5.96	216.72	2102
2010	Oct	15	13	19	36.87	- 8	23	44.2	0.997303	1924.5	26.20	5.89	203.53	2102
2010	Oct	16	13	23	20.09	- 8	45	54.5	0.997013	1925.0	26.16	5.81	190.34	2102
2010	Oct	17	13	27	3.85	- 9	7	57.3	0.996725	1925.6	26.12	5.74	177.15	2102
2010	Oct	18	13	30	48.18	- 9	29	52.2	0.996437	1926.1	26.07	5.66	163.96	2102
2010	Oct	19	13	34	33.10	- 9	51	38.8	0.996152	1926.7	26.01	5.58	150.77	2102
2010	Oct	20	13	38	18.63	-10	13	16.7	0.995868	1927.2	25.94	5.50	137.58	2102
2010	Oct	21	13	42	4.78	-10	34	45.6	0.995587	1927.8	25.86	5.42	124.39	2102
2010	Oct	22	13	45	51.59	-10	56	5.1	0.995308	1928.3	25.78	5.33	111.20	2102
2010	Oct	23	13	49	39.05	-11	17	14.8	0.995031	1928.8	25.69	5.25	98.01	2102
2010	Oct	24	13	53	27.21	-11	38	14.4	0.994758	1929.4	25.59	5.16	84.82	2102
2010	Oct	25	13	57	16.07	-11	59	3.5	0.994487	1929.9	25.48	5.07	71.63	2102
2010	Oct	26	14	1	5.64	-12	19	41.7	0.994218	1930.4	25.37	4.98	58.44	2102
2010	Oct	27	14	4	55.96	-12	40	8.6	0.993953	1930.9	25.25	4.89	45.26	2102
2010	Oct	28	14	8	47.03	-13	0	23.9	0.993690	1931.4	25.12	4.79	32.07	2102
2010	Oct	29	14	12	38.87	-13	20	27.0	0.993430	1932.0	24.98	4.70	18.88	2102
2010	Oct	30	14	16	31.48	-13	40	17.7	0.993172	1932.5	24.83	4.60	5.69	2102
2010	Oct	31	14	20	24.89	-13	59	55.6	0.992916	1933.0	24.68	4.50	352.51	2103
2010	Nov	1	14	24	19.10	-14	19	20.0	0.992662	1933.4	24.52	4.40	339.32	2103
2010	Nov	2	14	28	14.12	-14	38	30.8	0.992410	1933.9	24.35	4.30	326.13	2103
2010	Nov	3	14	32	9.97	-14	57	27.4	0.992160	1934.4	24.17	4.20	312.95	2103
2010	Nov	4	14	36	6.64	-15	16	9.4	0.991910	1934.9	23.99	4.09	299.76	2103
2010	Nov	5	14	40	4.14	-15	34	36.4	0.991661	1935.4	23.80	3.99	286.58	2103
2010	Nov	6	14	44	2.49	-15	52	48.0	0.991414	1935.9	23.59	3.88	273.39	2103
2010	Nov	7	14	48	1.67	-16	10	43.8	0.991167	1936.4	23.39	3.77	260.21	2103
2010	Nov	8	14	52	1.69	-16	28	23.3	0.990922	1936.8	23.17	3.67	247.02	2103

Sun
Apparent position

Date			Right Asc.			Declination			Distance	dia	Po	Bo	Lo	Carrington
year	mth	d	h	m	s	o	'	"	AU	"	o	o	o	Rotation #
2010	Nov	9	14	56	2.55	-16	45	46.2	0.990677	1937.3	22.95	3.56	233.84	2103
2010	Nov	10	15	0	4.24	-17	2	52.0	0.990435	1937.8	22.71	3.44	220.66	2103
2010	Nov	11	15	4	6.76	-17	19	40.3	0.990194	1938.3	22.47	3.33	207.47	2103
2010	Nov	12	15	8	10.11	-17	36	10.7	0.989956	1938.7	22.23	3.22	194.29	2103
2010	Nov	13	15	12	14.29	-17	52	22.8	0.989720	1939.2	21.97	3.10	181.11	2103
2010	Nov	14	15	16	19.30	-18	8	16.3	0.989487	1939.7	21.71	2.99	167.92	2103
2010	Nov	15	15	20	25.13	-18	23	50.6	0.989257	1940.1	21.44	2.87	154.74	2103
2010	Nov	16	15	24	31.79	-18	39	5.5	0.989031	1940.5	21.16	2.75	141.56	2103
2010	Nov	17	15	28	39.28	-18	54	0.6	0.988809	1941.0	20.88	2.64	128.37	2103
2010	Nov	18	15	32	47.59	-19	8	35.5	0.988590	1941.4	20.59	2.52	115.19	2103
2010	Nov	19	15	36	56.71	-19	22	49.9	0.988376	1941.8	20.29	2.40	102.01	2103
2010	Nov	20	15	41	6.65	-19	36	43.3	0.988167	1942.2	19.98	2.28	88.83	2103
2010	Nov	21	15	45	17.41	-19	50	15.4	0.987962	1942.6	19.67	2.16	75.64	2103
2010	Nov	22	15	49	28.97	-20	3	26.0	0.987762	1943.0	19.34	2.03	62.46	2103
2010	Nov	23	15	53	41.33	-20	16	14.6	0.987567	1943.4	19.02	1.91	49.28	2103
2010	Nov	24	15	57	54.48	-20	28	40.8	0.987377	1943.8	18.68	1.79	36.10	2103
2010	Nov	25	16	2	8.41	-20	40	44.5	0.987192	1944.2	18.34	1.66	22.92	2103
2010	Nov	26	16	6	23.11	-20	52	25.1	0.987013	1944.5	17.99	1.54	9.74	2103
2010	Nov	27	16	10	38.58	-21	3	42.4	0.986838	1944.9	17.64	1.41	356.56	2104
2010	Nov	28	16	14	54.78	-21	14	36.0	0.986667	1945.2	17.27	1.29	343.38	2104
2010	Nov	29	16	19	11.72	-21	25	5.6	0.986501	1945.5	16.91	1.16	330.20	2104
2010	Nov	30	16	23	29.37	-21	35	10.9	0.986339	1945.8	16.53	1.04	317.02	2104
2010	Dec	1	16	27	47.72	-21	44	51.5	0.986180	1946.2	16.15	0.91	303.84	2104
2010	Dec	2	16	32	6.75	-21	54	7.2	0.986025	1946.5	15.77	0.78	290.66	2104
2010	Dec	3	16	36	26.42	-22	2	57.7	0.985874	1946.8	15.37	0.66	277.48	2104
2010	Dec	4	16	40	46.73	-22	11	22.6	0.985725	1947.1	14.98	0.53	264.31	2104
2010	Dec	5	16	45	7.63	-22	19	21.9	0.985579	1947.3	14.57	0.40	251.13	2104
2010	Dec	6	16	49	29.11	-22	26	55.1	0.985436	1947.6	14.16	0.27	237.95	2104

Sun

Apparent position

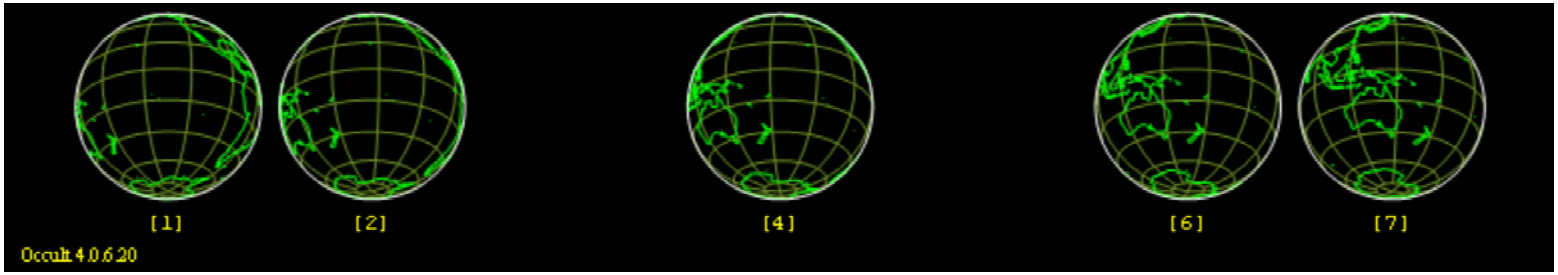
Date			Right Asc.			Declination			Distance	dia	Po	Bo	Lo	Carrington
year	mth	d	h	m	s	o	'	"	AU	"	o	o	o	Rotation #
2010	Dec	7	16	53	51.11	-22	34	2.1	0.985297	1947.9	13.75	0.14	224.77	2104
2010	Dec	8	16	58	13.62	-22	40	42.6	0.985160	1948.2	13.33	0.02	211.60	2104
2010	Dec	9	17	2	36.61	-22	46	56.4	0.985027	1948.4	12.91	-0.11	198.42	2104
2010	Dec	10	17	7	0.02	-22	52	43.4	0.984897	1948.7	12.48	-0.24	185.24	2104
2010	Dec	11	17	11	23.85	-22	58	3.3	0.984771	1948.9	12.04	-0.37	172.07	2104
2010	Dec	12	17	15	48.05	-23	2	55.9	0.984649	1949.2	11.60	-0.50	158.89	2104
2010	Dec	13	17	20	12.60	-23	7	21.1	0.984531	1949.4	11.16	-0.63	145.72	2104
2010	Dec	14	17	24	37.46	-23	11	18.8	0.984418	1949.6	10.72	-0.75	132.54	2104
2010	Dec	15	17	29	2.61	-23	14	48.7	0.984310	1949.9	10.27	-0.88	119.37	2104
2010	Dec	16	17	33	28.00	-23	17	50.9	0.984207	1950.1	9.81	-1.01	106.19	2104
2010	Dec	17	17	37	53.62	-23	20	25.2	0.984109	1950.3	9.36	-1.14	93.02	2104
2010	Dec	18	17	42	19.44	-23	22	31.5	0.984017	1950.4	8.90	-1.26	79.84	2104
2010	Dec	19	17	46	45.41	-23	24	9.8	0.983930	1950.6	8.43	-1.39	66.67	2104
2010	Dec	20	17	51	11.51	-23	25	20.0	0.983850	1950.8	7.97	-1.51	53.49	2104
2010	Dec	21	17	55	37.71	-23	26	2.0	0.983776	1950.9	7.50	-1.64	40.32	2104
2010	Dec	22	18	0	3.99	-23	26	15.8	0.983709	1951.0	7.03	-1.76	27.14	2104
2010	Dec	23	18	4	30.29	-23	26	1.4	0.983647	1951.2	6.55	-1.89	13.97	2104
2010	Dec	24	18	8	56.61	-23	25	18.8	0.983592	1951.3	6.08	-2.01	0.80	2104
2010	Dec	25	18	13	22.90	-23	24	8.0	0.983544	1951.4	5.60	-2.14	347.63	2105
2010	Dec	26	18	17	49.13	-23	22	28.9	0.983501	1951.5	5.12	-2.26	334.45	2105
2010	Dec	27	18	22	15.28	-23	20	21.6	0.983465	1951.5	4.64	-2.38	321.28	2105
2010	Dec	28	18	26	41.32	-23	17	46.1	0.983433	1951.6	4.16	-2.50	308.11	2105
2010	Dec	29	18	31	7.21	-23	14	42.5	0.983407	1951.6	3.67	-2.62	294.94	2105
2010	Dec	30	18	35	32.93	-23	11	10.9	0.983386	1951.7	3.19	-2.74	281.77	2105
2010	Dec	31	18	39	58.43	-23	7	11.4	0.983369	1951.7	2.71	-2.86	268.60	2105

L U N A R E C L I P S E on 2010 Jun 26

	Event	U.T. h m s	P.A. o	Overhead at Long o	Lat o
[1]	Moon Enters Penumbra	8 55 45	56	-135	-24
[2]	Moon Enters Umbra	10 17 17	37	-154	-24
[4]	Maximum Eclipse	11 38 28		-174	-24
[6]	Moon Leaves Umbra	12 59 58	307	167	-24
[7]	Moon Leaves Penumbra	14 21 27	289	147	-24

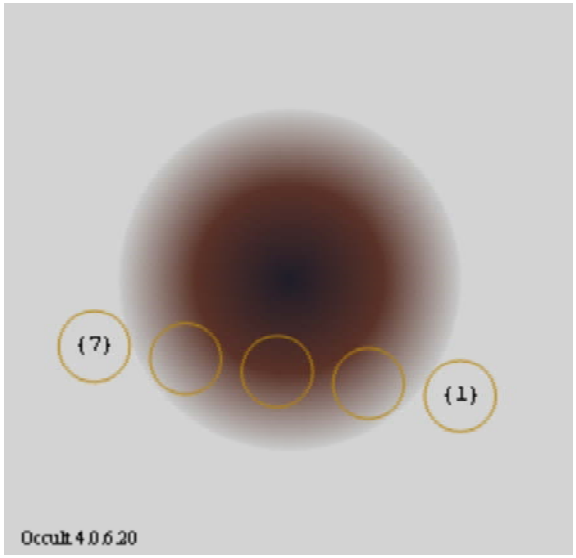
Magnitude of Umbral Eclipse = 0.537

[delta T = 66.2 secs]



http://digilander.libero.it/occultazioni

L U N A R E C L I P S E on 2010 Jun 26



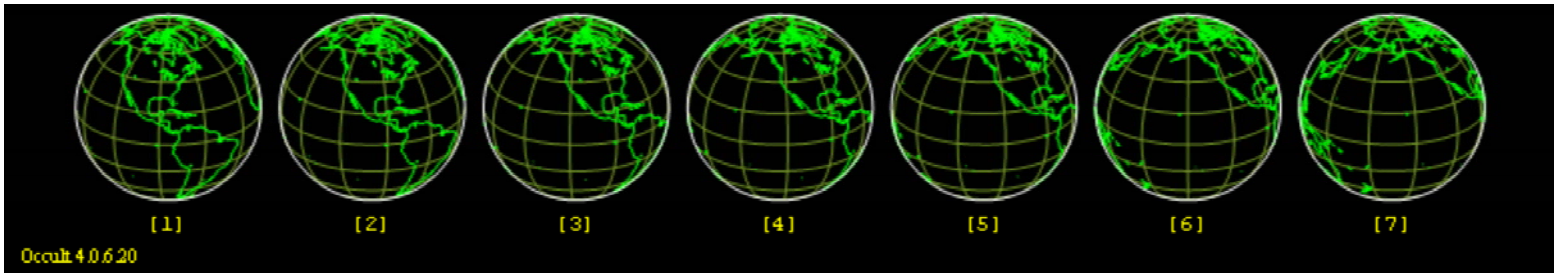
http://digilander.libero.it/occultazioni

L U N A R E C L I P S E on 2010 Dec 21

	Event	U.T. h m s	P.A. o	Overhead at Long o	Lat o
[1]	Moon Enters Penumbra	5 27 40	107	-84	24
[2]	Moon Enters Umbra	6 32 19	114	-100	24
[3]	Total Eclipse Starts	7 41 1	320	-116	24
[4]	Maximum Eclipse	8 16 58		-125	24
[5]	Total Eclipse Ends	8 53 14	51	-133	24
[6]	Moon Leaves Umbra	10 1 48	257	-150	24
[7]	Moon Leaves Penumbra	11 6 14	264	-165	24

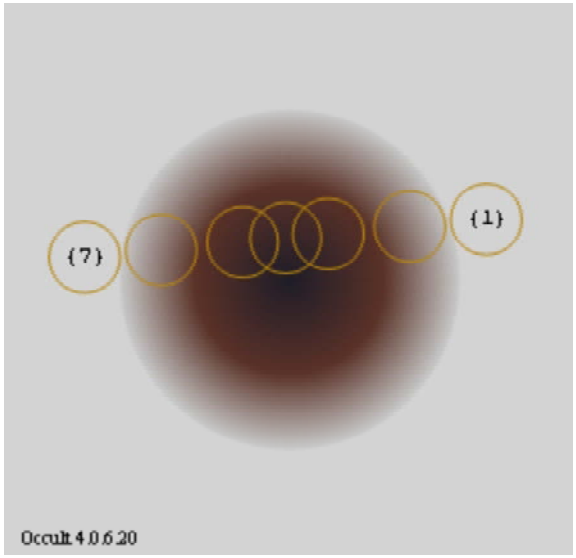
Magnitude of Umbral Eclipse = 1.254

[delta T = 66.2 secs]

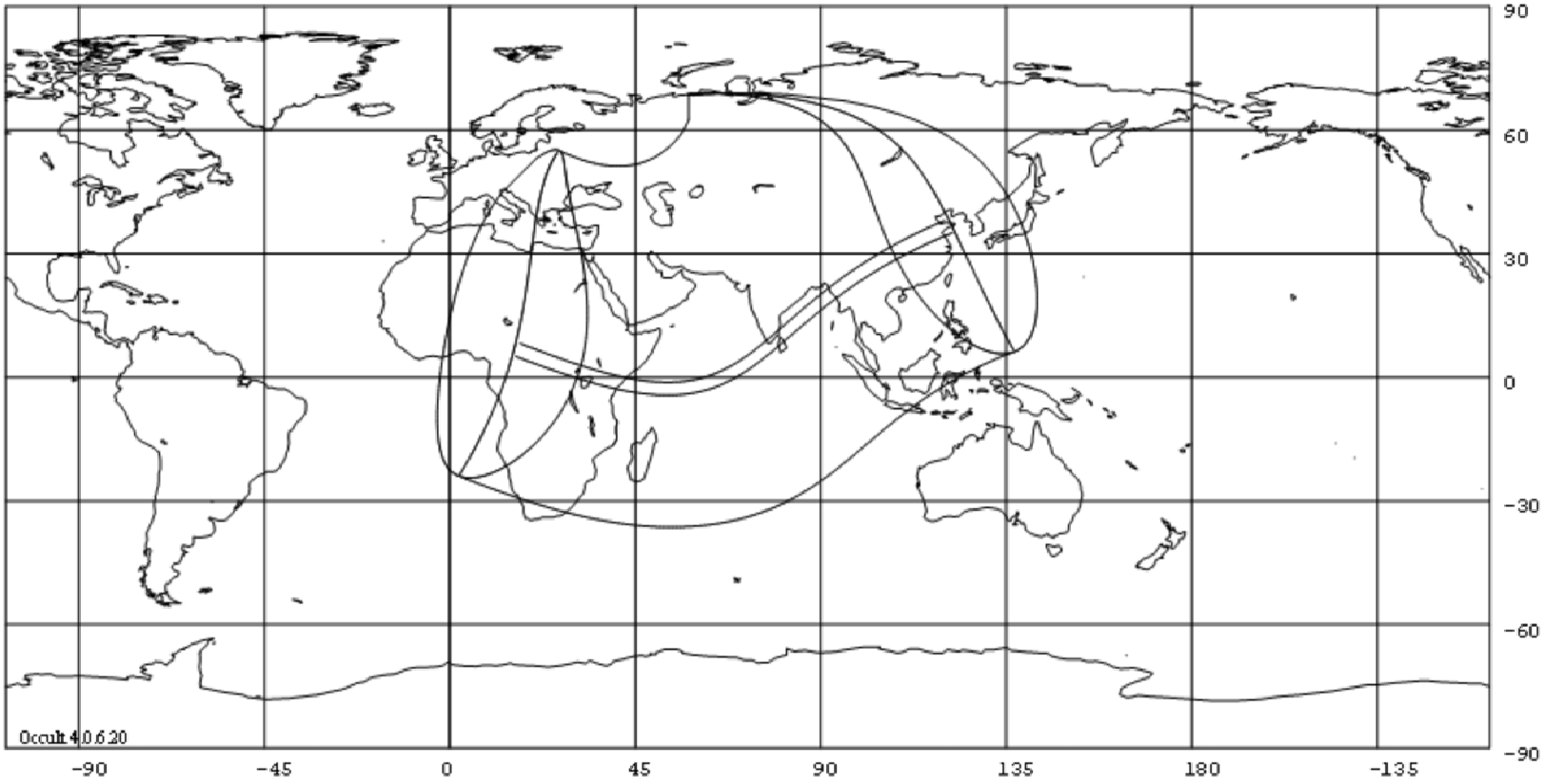


http://digilander.libero.it/occultazioni

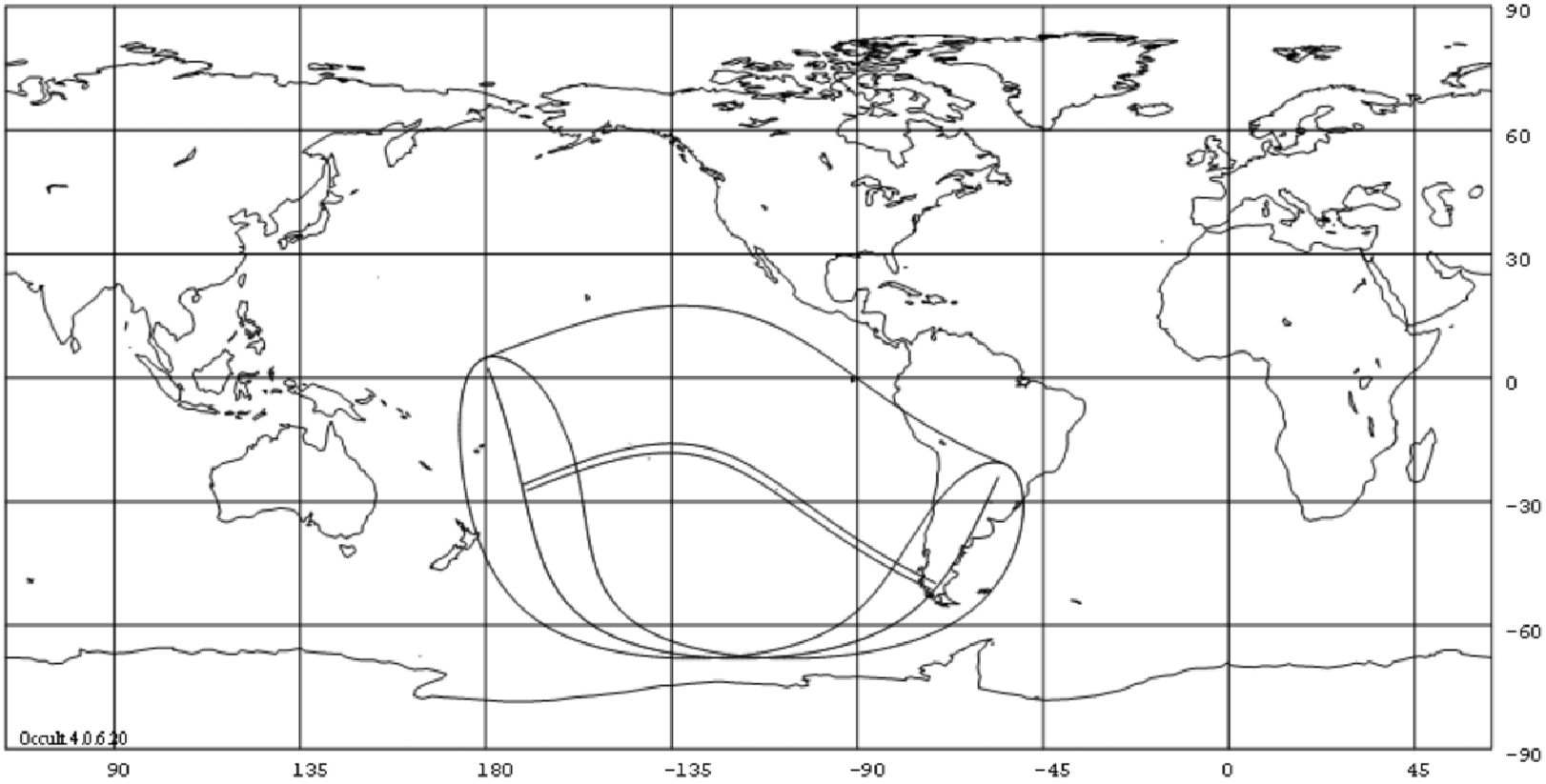
L U N A R E C L I P S E on 2010 Dec 21



World Map - Annular Eclipse of 2010 Jan 15



World Map - Total Eclipse of 2010 Jul 11



Julian Day Number, Sidereal Time, Solar Transit, and Ecliptic Solar transit on the Greenwich meridian

Date	Julian day	Sidereal Time h m s	Solar Transit h m s	Ecliptic o ' "
2010 Jan 1	2455197.5	6 42 9	12 3 35	23 26 19.59
2010 Jan 2	2455198.5	6 46 6	12 4 3	23 26 19.63
2010 Jan 3	2455199.5	6 50 2	12 4 30	23 26 19.69
2010 Jan 4	2455200.5	6 53 59	12 4 58	23 26 19.74
2010 Jan 5	2455201.5	6 57 55	12 5 24	23 26 19.78
2010 Jan 6	2455202.5	7 1 52	12 5 51	23 26 19.79
2010 Jan 7	2455203.5	7 5 48	12 6 17	23 26 19.77
2010 Jan 8	2455204.5	7 9 45	12 6 42	23 26 19.73
2010 Jan 9	2455205.5	7 13 41	12 7 7	23 26 19.69
2010 Jan 10	2455206.5	7 17 38	12 7 32	23 26 19.65
2010 Jan 11	2455207.5	7 21 35	12 7 56	23 26 19.61
2010 Jan 12	2455208.5	7 25 31	12 8 19	23 26 19.60
2010 Jan 13	2455209.5	7 29 28	12 8 42	23 26 19.60
2010 Jan 14	2455210.5	7 33 24	12 9 4	23 26 19.62
2010 Jan 15	2455211.5	7 37 21	12 9 26	23 26 19.65
2010 Jan 16	2455212.5	7 41 17	12 9 47	23 26 19.70
2010 Jan 17	2455213.5	7 45 14	12 10 7	23 26 19.75
2010 Jan 18	2455214.5	7 49 10	12 10 26	23 26 19.80
2010 Jan 19	2455215.5	7 53 7	12 10 45	23 26 19.83
2010 Jan 20	2455216.5	7 57 4	12 11 3	23 26 19.86
2010 Jan 21	2455217.5	8 1 0	12 11 20	23 26 19.86
2010 Jan 22	2455218.5	8 4 57	12 11 36	23 26 19.85
2010 Jan 23	2455219.5	8 8 53	12 11 52	23 26 19.83
2010 Jan 24	2455220.5	8 12 50	12 12 7	23 26 19.79
2010 Jan 25	2455221.5	8 16 46	12 12 21	23 26 19.75
2010 Jan 26	2455222.5	8 20 43	12 12 34	23 26 19.72
2010 Jan 27	2455223.5	8 24 39	12 12 46	23 26 19.71
2010 Jan 28	2455224.5	8 28 36	12 12 58	23 26 19.73

Date	Julian day	Sidereal Time h m s	Solar Transit h m s	Ecliptic o ' "
2010 Jan 29	2455225.5	8 32 33	12 13 8	23 26 19.77
2010 Jan 30	2455226.5	8 36 29	12 13 18	23 26 19.84
2010 Jan 31	2455227.5	8 40 26	12 13 27	23 26 19.91
2010 Feb 1	2455228.5	8 44 22	12 13 36	23 26 19.96
2010 Feb 2	2455229.5	8 48 19	12 13 43	23 26 20.00
2010 Feb 3	2455230.5	8 52 15	12 13 50	23 26 20.00
2010 Feb 4	2455231.5	8 56 12	12 13 56	23 26 19.98
2010 Feb 5	2455232.5	9 0 8	12 14 1	23 26 19.94
2010 Feb 6	2455233.5	9 4 5	12 14 5	23 26 19.90
2010 Feb 7	2455234.5	9 8 2	12 14 9	23 26 19.87
2010 Feb 8	2455235.5	9 11 58	12 14 11	23 26 19.85
2010 Feb 9	2455236.5	9 15 55	12 14 13	23 26 19.86
2010 Feb 10	2455237.5	9 19 51	12 14 14	23 26 19.88
2010 Feb 11	2455238.5	9 23 48	12 14 15	23 26 19.91
2010 Feb 12	2455239.5	9 27 44	12 14 15	23 26 19.96
2010 Feb 13	2455240.5	9 31 41	12 14 13	23 26 20.01
2010 Feb 14	2455241.5	9 35 37	12 14 12	23 26 20.06
2010 Feb 15	2455242.5	9 39 34	12 14 9	23 26 20.11
2010 Feb 16	2455243.5	9 43 31	12 14 6	23 26 20.14
2010 Feb 17	2455244.5	9 47 27	12 14 2	23 26 20.15
2010 Feb 18	2455245.5	9 51 24	12 13 57	23 26 20.14
2010 Feb 19	2455246.5	9 55 20	12 13 52	23 26 20.12
2010 Feb 20	2455247.5	9 59 17	12 13 46	23 26 20.09
2010 Feb 21	2455248.5	10 3 13	12 13 39	23 26 20.05
2010 Feb 22	2455249.5	10 7 10	12 13 31	23 26 20.01
2010 Feb 23	2455250.5	10 11 6	12 13 23	23 26 19.99
2010 Feb 24	2455251.5	10 15 3	12 13 15	23 26 19.99
2010 Feb 25	2455252.5	10 19 0	12 13 5	23 26 20.02
2010 Feb 26	2455253.5	10 22 56	12 12 56	23 26 20.07
2010 Feb 27	2455254.5	10 26 53	12 12 45	23 26 20.14
2010 Feb 28	2455255.5	10 30 49	12 12 34	23 26 20.19

Date	Julian day	Sidereal Time h m s	Solar Transit h m s	Ecliptic o ' "
2010 Mar 1	2455256.5	10 34 46	12 12 23	23 26 20.23
2010 Mar 2	2455257.5	10 38 42	12 12 11	23 26 20.24
2010 Mar 3	2455258.5	10 42 39	12 11 58	23 26 20.22
2010 Mar 4	2455259.5	10 46 35	12 11 45	23 26 20.17
2010 Mar 5	2455260.5	10 50 32	12 11 32	23 26 20.12
2010 Mar 6	2455261.5	10 54 29	12 11 18	23 26 20.08
2010 Mar 7	2455262.5	10 58 25	12 11 4	23 26 20.04
2010 Mar 8	2455263.5	11 2 22	12 10 49	23 26 20.03
2010 Mar 9	2455264.5	11 6 18	12 10 34	23 26 20.03
2010 Mar 10	2455265.5	11 10 15	12 10 19	23 26 20.05
2010 Mar 11	2455266.5	11 14 11	12 10 3	23 26 20.08
2010 Mar 12	2455267.5	11 18 8	12 9 48	23 26 20.12
2010 Mar 13	2455268.5	11 22 4	12 9 31	23 26 20.16
2010 Mar 14	2455269.5	11 26 1	12 9 15	23 26 20.19
2010 Mar 15	2455270.5	11 29 58	12 8 58	23 26 20.21
2010 Mar 16	2455271.5	11 33 54	12 8 41	23 26 20.21
2010 Mar 17	2455272.5	11 37 51	12 8 24	23 26 20.20
2010 Mar 18	2455273.5	11 41 47	12 8 7	23 26 20.16
2010 Mar 19	2455274.5	11 45 44	12 7 50	23 26 20.11
2010 Mar 20	2455275.5	11 49 40	12 7 32	23 26 20.06
2010 Mar 21	2455276.5	11 53 37	12 7 14	23 26 20.01
2010 Mar 22	2455277.5	11 57 33	12 6 56	23 26 19.97
2010 Mar 23	2455278.5	12 1 30	12 6 38	23 26 19.95
2010 Mar 24	2455279.5	12 5 27	12 6 20	23 26 19.95
2010 Mar 25	2455280.5	12 9 23	12 6 2	23 26 19.98
2010 Mar 26	2455281.5	12 13 20	12 5 44	23 26 20.02
2010 Mar 27	2455282.5	12 17 16	12 5 26	23 26 20.06
2010 Mar 28	2455283.5	12 21 13	12 5 8	23 26 20.09
2010 Mar 29	2455284.5	12 25 9	12 4 49	23 26 20.09
2010 Mar 30	2455285.5	12 29 6	12 4 31	23 26 20.06
2010 Mar 31	2455286.5	12 33 2	12 4 13	23 26 20.01

Date	Julian day	Sidereal Time h m s	Solar Transit h m s	Ecliptic o ' "
2010 Apr 1	2455287.5	12 36 59	12 3 55	23 26 19.94
2010 Apr 2	2455288.5	12 40 56	12 3 37	23 26 19.87
2010 Apr 3	2455289.5	12 44 52	12 3 20	23 26 19.81
2010 Apr 4	2455290.5	12 48 49	12 3 2	23 26 19.77
2010 Apr 5	2455291.5	12 52 45	12 2 45	23 26 19.75
2010 Apr 6	2455292.5	12 56 42	12 2 28	23 26 19.75
2010 Apr 7	2455293.5	13 0 38	12 2 11	23 26 19.76
2010 Apr 8	2455294.5	13 4 35	12 1 54	23 26 19.78
2010 Apr 9	2455295.5	13 8 31	12 1 38	23 26 19.80
2010 Apr 10	2455296.5	13 12 28	12 1 21	23 26 19.82
2010 Apr 11	2455297.5	13 16 25	12 1 6	23 26 19.82
2010 Apr 12	2455298.5	13 20 21	12 0 50	23 26 19.81
2010 Apr 13	2455299.5	13 24 18	12 0 35	23 26 19.78
2010 Apr 14	2455300.5	13 28 14	12 0 20	23 26 19.74
2010 Apr 15	2455301.5	13 32 11	12 0 5	23 26 19.67
2010 Apr 16	2455302.5	13 36 7	11 59 51	23 26 19.60
2010 Apr 17	2455303.5	13 40 4	11 59 37	23 26 19.53
2010 Apr 18	2455304.5	13 44 0	11 59 24	23 26 19.47
2010 Apr 19	2455305.5	13 47 57	11 59 11	23 26 19.43
2010 Apr 20	2455306.5	13 51 54	11 58 58	23 26 19.42
2010 Apr 21	2455307.5	13 55 50	11 58 46	23 26 19.42
2010 Apr 22	2455308.5	13 59 47	11 58 34	23 26 19.44
2010 Apr 23	2455309.5	14 3 43	11 58 22	23 26 19.47
2010 Apr 24	2455310.5	14 7 40	11 58 11	23 26 19.49
2010 Apr 25	2455311.5	14 11 36	11 58 1	23 26 19.49
2010 Apr 26	2455312.5	14 15 33	11 57 51	23 26 19.46
2010 Apr 27	2455313.5	14 19 29	11 57 41	23 26 19.40
2010 Apr 28	2455314.5	14 23 26	11 57 32	23 26 19.33
2010 Apr 29	2455315.5	14 27 23	11 57 23	23 26 19.25
2010 Apr 30	2455316.5	14 31 19	11 57 15	23 26 19.17

Date	Julian day	Sidereal Time h m s	Solar Transit h m s	Ecliptic o ' "
2010 May 1	2455317.5	14 35 16	11 57 8	23 26 19.11
2010 May 2	2455318.5	14 39 12	11 57 1	23 26 19.07
2010 May 3	2455319.5	14 43 9	11 56 54	23 26 19.06
2010 May 4	2455320.5	14 47 5	11 56 49	23 26 19.05
2010 May 5	2455321.5	14 51 2	11 56 43	23 26 19.06
2010 May 6	2455322.5	14 54 58	11 56 39	23 26 19.08
2010 May 7	2455323.5	14 58 55	11 56 34	23 26 19.09
2010 May 8	2455324.5	15 2 52	11 56 31	23 26 19.09
2010 May 9	2455325.5	15 6 48	11 56 28	23 26 19.08
2010 May 10	2455326.5	15 10 45	11 56 26	23 26 19.05
2010 May 11	2455327.5	15 14 41	11 56 24	23 26 19.01
2010 May 12	2455328.5	15 18 38	11 56 23	23 26 18.94
2010 May 13	2455329.5	15 22 34	11 56 22	23 26 18.87
2010 May 14	2455330.5	15 26 31	11 56 22	23 26 18.80
2010 May 15	2455331.5	15 30 27	11 56 23	23 26 18.73
2010 May 16	2455332.5	15 34 24	11 56 24	23 26 18.68
2010 May 17	2455333.5	15 38 21	11 56 25	23 26 18.66
2010 May 18	2455334.5	15 42 17	11 56 27	23 26 18.66
2010 May 19	2455335.5	15 46 14	11 56 30	23 26 18.67
2010 May 20	2455336.5	15 50 10	11 56 33	23 26 18.70
2010 May 21	2455337.5	15 54 7	11 56 37	23 26 18.72
2010 May 22	2455338.5	15 58 3	11 56 41	23 26 18.73
2010 May 23	2455339.5	16 2 0	11 56 46	23 26 18.70
2010 May 24	2455340.5	16 5 56	11 56 52	23 26 18.66
2010 May 25	2455341.5	16 9 53	11 56 57	23 26 18.59
2010 May 26	2455342.5	16 13 50	11 57 4	23 26 18.52
2010 May 27	2455343.5	16 17 46	11 57 10	23 26 18.45
2010 May 28	2455344.5	16 21 43	11 57 17	23 26 18.39
2010 May 29	2455345.5	16 25 39	11 57 25	23 26 18.35
2010 May 30	2455346.5	16 29 36	11 57 33	23 26 18.33

Date	Julian day	Sidereal Time h m s	Solar Transit h m s	Ecliptic o ' "
2010 May 31	2455347.5	16 33 32	11 57 42	23 26 18.33
2010 Jun 1	2455348.5	16 37 29	11 57 51	23 26 18.34
2010 Jun 2	2455349.5	16 41 25	11 58 0	23 26 18.36
2010 Jun 3	2455350.5	16 45 22	11 58 10	23 26 18.38
2010 Jun 4	2455351.5	16 49 19	11 58 20	23 26 18.40
2010 Jun 5	2455352.5	16 53 15	11 58 30	23 26 18.40
2010 Jun 6	2455353.5	16 57 12	11 58 41	23 26 18.39
2010 Jun 7	2455354.5	17 1 8	11 58 52	23 26 18.36
2010 Jun 8	2455355.5	17 5 5	11 59 4	23 26 18.31
2010 Jun 9	2455356.5	17 9 1	11 59 15	23 26 18.25
2010 Jun 10	2455357.5	17 12 58	11 59 27	23 26 18.19
2010 Jun 11	2455358.5	17 16 54	11 59 40	23 26 18.13
2010 Jun 12	2455359.5	17 20 51	11 59 52	23 26 18.08
2010 Jun 13	2455360.5	17 24 48	12 0 5	23 26 18.06
2010 Jun 14	2455361.5	17 28 44	12 0 17	23 26 18.06
2010 Jun 15	2455362.5	17 32 41	12 0 30	23 26 18.09
2010 Jun 16	2455363.5	17 36 37	12 0 43	23 26 18.13
2010 Jun 17	2455364.5	17 40 34	12 0 56	23 26 18.17
2010 Jun 18	2455365.5	17 44 30	12 1 9	23 26 18.19
2010 Jun 19	2455366.5	17 48 27	12 1 22	23 26 18.19
2010 Jun 20	2455367.5	17 52 23	12 1 35	23 26 18.17
2010 Jun 21	2455368.5	17 56 20	12 1 48	23 26 18.12
2010 Jun 22	2455369.5	18 0 17	12 2 1	23 26 18.06
2010 Jun 23	2455370.5	18 4 13	12 2 14	23 26 18.01
2010 Jun 24	2455371.5	18 8 10	12 2 27	23 26 17.96
2010 Jun 25	2455372.5	18 12 6	12 2 40	23 26 17.93
2010 Jun 26	2455373.5	18 16 3	12 2 53	23 26 17.92
2010 Jun 27	2455374.5	18 19 59	12 3 5	23 26 17.93
2010 Jun 28	2455375.5	18 23 56	12 3 17	23 26 17.95
2010 Jun 29	2455376.5	18 27 52	12 3 29	23 26 17.99

Date	Julian day	Sidereal Time h m s	Solar Transit h m s	Ecliptic o ' "
2010 Jun 30	2455377.5	18 31 49	12 3 41	23 26 18.03
2010 Jul 1	2455378.5	18 35 46	12 3 53	23 26 18.06
2010 Jul 2	2455379.5	18 39 42	12 4 4	23 26 18.08
2010 Jul 3	2455380.5	18 43 39	12 4 15	23 26 18.09
2010 Jul 4	2455381.5	18 47 35	12 4 26	23 26 18.08
2010 Jul 5	2455382.5	18 51 32	12 4 37	23 26 18.06
2010 Jul 6	2455383.5	18 55 28	12 4 47	23 26 18.02
2010 Jul 7	2455384.5	18 59 25	12 4 57	23 26 17.97
2010 Jul 8	2455385.5	19 3 21	12 5 6	23 26 17.93
2010 Jul 9	2455386.5	19 7 18	12 5 15	23 26 17.89
2010 Jul 10	2455387.5	19 11 15	12 5 24	23 26 17.88
2010 Jul 11	2455388.5	19 15 11	12 5 32	23 26 17.89
2010 Jul 12	2455389.5	19 19 8	12 5 40	23 26 17.92
2010 Jul 13	2455390.5	19 23 4	12 5 48	23 26 17.98
2010 Jul 14	2455391.5	19 27 1	12 5 55	23 26 18.04
2010 Jul 15	2455392.5	19 30 57	12 6 1	23 26 18.08
2010 Jul 16	2455393.5	19 34 54	12 6 7	23 26 18.11
2010 Jul 17	2455394.5	19 38 50	12 6 12	23 26 18.10
2010 Jul 18	2455395.5	19 42 47	12 6 17	23 26 18.07
2010 Jul 19	2455396.5	19 46 44	12 6 21	23 26 18.03
2010 Jul 20	2455397.5	19 50 40	12 6 25	23 26 17.99
2010 Jul 21	2455398.5	19 54 37	12 6 28	23 26 17.95
2010 Jul 22	2455399.5	19 58 33	12 6 30	23 26 17.93
2010 Jul 23	2455400.5	20 2 30	12 6 32	23 26 17.93
2010 Jul 24	2455401.5	20 6 26	12 6 33	23 26 17.95
2010 Jul 25	2455402.5	20 10 23	12 6 34	23 26 17.98
2010 Jul 26	2455403.5	20 14 19	12 6 34	23 26 18.03
2010 Jul 27	2455404.5	20 18 16	12 6 34	23 26 18.08
2010 Jul 28	2455405.5	20 22 13	12 6 33	23 26 18.13
2010 Jul 29	2455406.5	20 26 9	12 6 31	23 26 18.16

Date	Julian day	Sidereal Time h m s	Solar Transit h m s	Ecliptic o ' "
2010 Jul 30	2455407.5	20 30 6	12 6 29	23 26 18.19
2010 Jul 31	2455408.5	20 34 2	12 6 26	23 26 18.20
2010 Aug 1	2455409.5	20 37 59	12 6 22	23 26 18.19
2010 Aug 2	2455410.5	20 41 55	12 6 18	23 26 18.17
2010 Aug 3	2455411.5	20 45 52	12 6 14	23 26 18.13
2010 Aug 4	2455412.5	20 49 48	12 6 8	23 26 18.10
2010 Aug 5	2455413.5	20 53 45	12 6 3	23 26 18.07
2010 Aug 6	2455414.5	20 57 42	12 5 56	23 26 18.05
2010 Aug 7	2455415.5	21 1 38	12 5 49	23 26 18.06
2010 Aug 8	2455416.5	21 5 35	12 5 42	23 26 18.09
2010 Aug 9	2455417.5	21 9 31	12 5 34	23 26 18.15
2010 Aug 10	2455418.5	21 13 28	12 5 25	23 26 18.21
2010 Aug 11	2455419.5	21 17 24	12 5 16	23 26 18.27
2010 Aug 12	2455420.5	21 21 21	12 5 6	23 26 18.31
2010 Aug 13	2455421.5	21 25 17	12 4 55	23 26 18.32
2010 Aug 14	2455422.5	21 29 14	12 4 44	23 26 18.31
2010 Aug 15	2455423.5	21 33 11	12 4 33	23 26 18.27
2010 Aug 16	2455424.5	21 37 7	12 4 21	23 26 18.23
2010 Aug 17	2455425.5	21 41 4	12 4 8	23 26 18.19
2010 Aug 18	2455426.5	21 45 0	12 3 55	23 26 18.17
2010 Aug 19	2455427.5	21 48 57	12 3 41	23 26 18.16
2010 Aug 20	2455428.5	21 52 53	12 3 27	23 26 18.18
2010 Aug 21	2455429.5	21 56 50	12 3 12	23 26 18.21
2010 Aug 22	2455430.5	22 0 46	12 2 57	23 26 18.25
2010 Aug 23	2455431.5	22 4 43	12 2 42	23 26 18.30
2010 Aug 24	2455432.5	22 8 40	12 2 26	23 26 18.35
2010 Aug 25	2455433.5	22 12 36	12 2 9	23 26 18.39
2010 Aug 26	2455434.5	22 16 33	12 1 52	23 26 18.41
2010 Aug 27	2455435.5	22 20 29	12 1 35	23 26 18.42
2010 Aug 28	2455436.5	22 24 26	12 1 17	23 26 18.42

Date	Julian day	Sidereal Time h m s	Solar Transit h m s	Ecliptic o ' "
2010 Aug 29	2455437.5	22 28 22	12 0 59	23 26 18.40
2010 Aug 30	2455438.5	22 32 19	12 0 41	23 26 18.36
2010 Aug 31	2455439.5	22 36 15	12 0 22	23 26 18.32
2010 Sep 1	2455440.5	22 40 12	12 0 4	23 26 18.29
2010 Sep 2	2455441.5	22 44 9	11 59 44	23 26 18.26
2010 Sep 3	2455442.5	22 48 5	11 59 25	23 26 18.26
2010 Sep 4	2455443.5	22 52 2	11 59 5	23 26 18.27
2010 Sep 5	2455444.5	22 55 58	11 58 45	23 26 18.31
2010 Sep 6	2455445.5	22 59 55	11 58 25	23 26 18.37
2010 Sep 7	2455446.5	23 3 51	11 58 5	23 26 18.42
2010 Sep 8	2455447.5	23 7 48	11 57 44	23 26 18.46
2010 Sep 9	2455448.5	23 11 44	11 57 24	23 26 18.48
2010 Sep 10	2455449.5	23 15 41	11 57 3	23 26 18.46
2010 Sep 11	2455450.5	23 19 38	11 56 42	23 26 18.42
2010 Sep 12	2455451.5	23 23 34	11 56 21	23 26 18.36
2010 Sep 13	2455452.5	23 27 31	11 56 0	23 26 18.31
2010 Sep 14	2455453.5	23 31 27	11 55 38	23 26 18.26
2010 Sep 15	2455454.5	23 35 24	11 55 17	23 26 18.24
2010 Sep 16	2455455.5	23 39 20	11 54 56	23 26 18.24
2010 Sep 17	2455456.5	23 43 17	11 54 34	23 26 18.26
2010 Sep 18	2455457.5	23 47 13	11 54 13	23 26 18.28
2010 Sep 19	2455458.5	23 51 10	11 53 51	23 26 18.32
2010 Sep 20	2455459.5	23 55 7	11 53 30	23 26 18.35
2010 Sep 21	2455460.5	23 59 3	11 53 9	23 26 18.38
2010 Sep 22	2455461.5	0 3 0	11 52 47	23 26 18.39
2010 Sep 23	2455462.5	0 6 56	11 52 26	23 26 18.39
2010 Sep 24	2455463.5	0 10 53	11 52 5	23 26 18.38
2010 Sep 25	2455464.5	0 14 49	11 51 44	23 26 18.34
2010 Sep 26	2455465.5	0 18 46	11 51 23	23 26 18.30
2010 Sep 27	2455466.5	0 22 42	11 51 3	23 26 18.24

Date	Julian day	Sidereal Time h m s	Solar Transit h m s	Ecliptic o ' "
2010 Sep 28	2455467.5	0 26 39	11 50 43	23 26 18.19
2010 Sep 29	2455468.5	0 30 36	11 50 23	23 26 18.15
2010 Sep 30	2455469.5	0 34 32	11 50 3	23 26 18.12
2010 Oct 1	2455470.5	0 38 29	11 49 43	23 26 18.11
2010 Oct 2	2455471.5	0 42 25	11 49 24	23 26 18.13
2010 Oct 3	2455472.5	0 46 22	11 49 5	23 26 18.16
2010 Oct 4	2455473.5	0 50 18	11 48 47	23 26 18.19
2010 Oct 5	2455474.5	0 54 15	11 48 29	23 26 18.22
2010 Oct 6	2455475.5	0 58 11	11 48 11	23 26 18.23
2010 Oct 7	2455476.5	1 2 8	11 47 53	23 26 18.21
2010 Oct 8	2455477.5	1 6 5	11 47 37	23 26 18.16
2010 Oct 9	2455478.5	1 10 1	11 47 20	23 26 18.09
2010 Oct 10	2455479.5	1 13 58	11 47 4	23 26 18.01
2010 Oct 11	2455480.5	1 17 54	11 46 48	23 26 17.95
2010 Oct 12	2455481.5	1 21 51	11 46 33	23 26 17.90
2010 Oct 13	2455482.5	1 25 47	11 46 19	23 26 17.87
2010 Oct 14	2455483.5	1 29 44	11 46 4	23 26 17.87
2010 Oct 15	2455484.5	1 33 40	11 45 51	23 26 17.87
2010 Oct 16	2455485.5	1 37 37	11 45 38	23 26 17.89
2010 Oct 17	2455486.5	1 41 34	11 45 25	23 26 17.91
2010 Oct 18	2455487.5	1 45 30	11 45 13	23 26 17.92
2010 Oct 19	2455488.5	1 49 27	11 45 2	23 26 17.92
2010 Oct 20	2455489.5	1 53 23	11 44 51	23 26 17.91
2010 Oct 21	2455490.5	1 57 20	11 44 41	23 26 17.88
2010 Oct 22	2455491.5	2 1 16	11 44 32	23 26 17.83
2010 Oct 23	2455492.5	2 5 13	11 44 23	23 26 17.78
2010 Oct 24	2455493.5	2 9 9	11 44 15	23 26 17.71
2010 Oct 25	2455494.5	2 13 6	11 44 8	23 26 17.64
2010 Oct 26	2455495.5	2 17 3	11 44 1	23 26 17.58
2010 Oct 27	2455496.5	2 20 59	11 43 55	23 26 17.53

Date	Julian day	Sidereal Time h m s	Solar Transit h m s	Ecliptic o ' "
2010 Oct 28	2455497.5	2 24 56	11 43 50	23 26 17.51
2010 Oct 29	2455498.5	2 28 52	11 43 46	23 26 17.50
2010 Oct 30	2455499.5	2 32 49	11 43 42	23 26 17.51
2010 Oct 31	2455500.5	2 36 45	11 43 39	23 26 17.54
2010 Nov 1	2455501.5	2 40 42	11 43 38	23 26 17.55
2010 Nov 2	2455502.5	2 44 38	11 43 36	23 26 17.56
2010 Nov 3	2455503.5	2 48 35	11 43 36	23 26 17.54
2010 Nov 4	2455504.5	2 52 32	11 43 37	23 26 17.49
2010 Nov 5	2455505.5	2 56 28	11 43 38	23 26 17.41
2010 Nov 6	2455506.5	3 0 25	11 43 40	23 26 17.33
2010 Nov 7	2455507.5	3 4 21	11 43 43	23 26 17.25
2010 Nov 8	2455508.5	3 8 18	11 43 47	23 26 17.18
2010 Nov 9	2455509.5	3 12 14	11 43 52	23 26 17.14
2010 Nov 10	2455510.5	3 16 11	11 43 57	23 26 17.12
2010 Nov 11	2455511.5	3 20 7	11 44 4	23 26 17.11
2010 Nov 12	2455512.5	3 24 4	11 44 11	23 26 17.12
2010 Nov 13	2455513.5	3 28 1	11 44 19	23 26 17.13
2010 Nov 14	2455514.5	3 31 57	11 44 28	23 26 17.14
2010 Nov 15	2455515.5	3 35 54	11 44 38	23 26 17.14
2010 Nov 16	2455516.5	3 39 50	11 44 48	23 26 17.13
2010 Nov 17	2455517.5	3 43 47	11 45 0	23 26 17.10
2010 Nov 18	2455518.5	3 47 43	11 45 12	23 26 17.06
2010 Nov 19	2455519.5	3 51 40	11 45 25	23 26 17.00
2010 Nov 20	2455520.5	3 55 36	11 45 38	23 26 16.93
2010 Nov 21	2455521.5	3 59 33	11 45 53	23 26 16.86
2010 Nov 22	2455522.5	4 3 30	11 46 8	23 26 16.80
2010 Nov 23	2455523.5	4 7 26	11 46 25	23 26 16.75
2010 Nov 24	2455524.5	4 11 23	11 46 42	23 26 16.72
2010 Nov 25	2455525.5	4 15 19	11 46 59	23 26 16.71
2010 Nov 26	2455526.5	4 19 16	11 47 18	23 26 16.72

Date	Julian day	Sidereal Time h m s	Solar Transit h m s	Ecliptic o ' "
2010 Nov 27	2455527.5	4 23 12	11 47 37	23 26 16.74
2010 Nov 28	2455528.5	4 27 9	11 47 57	23 26 16.77
2010 Nov 29	2455529.5	4 31 5	11 48 18	23 26 16.78
2010 Nov 30	2455530.5	4 35 2	11 48 39	23 26 16.77
2010 Dec 1	2455531.5	4 38 59	11 49 2	23 26 16.73
2010 Dec 2	2455532.5	4 42 55	11 49 24	23 26 16.67
2010 Dec 3	2455533.5	4 46 52	11 49 48	23 26 16.60
2010 Dec 4	2455534.5	4 50 48	11 50 12	23 26 16.53
2010 Dec 5	2455535.5	4 54 45	11 50 37	23 26 16.46
2010 Dec 6	2455536.5	4 58 41	11 51 2	23 26 16.42
2010 Dec 7	2455537.5	5 2 38	11 51 27	23 26 16.40
2010 Dec 8	2455538.5	5 6 34	11 51 54	23 26 16.40
2010 Dec 9	2455539.5	5 10 31	11 52 20	23 26 16.41
2010 Dec 10	2455540.5	5 14 28	11 52 47	23 26 16.44
2010 Dec 11	2455541.5	5 18 24	11 53 15	23 26 16.46
2010 Dec 12	2455542.5	5 22 21	11 53 43	23 26 16.48
2010 Dec 13	2455543.5	5 26 17	11 54 11	23 26 16.48
2010 Dec 14	2455544.5	5 30 14	11 54 39	23 26 16.47
2010 Dec 15	2455545.5	5 34 10	11 55 8	23 26 16.45
2010 Dec 16	2455546.5	5 38 7	11 55 37	23 26 16.41
2010 Dec 17	2455547.5	5 42 3	11 56 6	23 26 16.36
2010 Dec 18	2455548.5	5 46 0	11 56 35	23 26 16.30
2010 Dec 19	2455549.5	5 49 57	11 57 5	23 26 16.25
2010 Dec 20	2455550.5	5 53 53	11 57 35	23 26 16.21
2010 Dec 21	2455551.5	5 57 50	11 58 4	23 26 16.18
2010 Dec 22	2455552.5	6 1 46	11 58 34	23 26 16.19
2010 Dec 23	2455553.5	6 5 43	11 59 4	23 26 16.21
2010 Dec 24	2455554.5	6 9 39	11 59 33	23 26 16.25
2010 Dec 25	2455555.5	6 13 36	12 0 3	23 26 16.29
2010 Dec 26	2455556.5	6 17 32	12 0 33	23 26 16.32

Date	Julian day	Sidereal Time h m s	Solar Transit h m s	Ecliptic o ' "
2010 Dec 27	2455557.5	6 21 29	12 1 2	23 26 16.34
2010 Dec 28	2455558.5	6 25 26	12 1 32	23 26 16.33
2010 Dec 29	2455559.5	6 29 22	12 2 1	23 26 16.29
2010 Dec 30	2455560.5	6 33 19	12 2 30	23 26 16.24
2010 Dec 31	2455561.5	6 37 15	12 2 59	23 26 16.19
2011 Jan 1	2455562.5	6 41 12	12 3 28	23 26 16.14

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The data produced in the ephemeris is:

Right Asc.	right ascension, in hours, min, sec.
Declination	declination, in deg, min, sec
Distance	the geocentric distance to the planet, in AU
dia	the planet's apparent equatorial diameter, in arc sec
mag	the apparent magnitude of the planet
Elong	the planet's elongation in degrees, from the sun - with direction east or west being indicated
I	the phase angle of illumination (in degrees) - i.e. the sun-planet-earth angle
%Ill	the percent illumination of the planet
Limb	the Position Angle (in degrees) of the mid-point of the illuminated limb of the planet
De	the planetocentric declination of the Earth. For Saturn, this is also the apparent inclination of the rings. The sign indicates whether the northern or southern pole is inclined towards the Earth.
Pp	the position angle of the north pole of the planet.

http://digilander.libero.it/occultazioni

Mercury
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Jan	1	19	21	17.42	-20	28	24.1	0.702742	9.5	2.9	8.7e	151	6.2	251.3	-8	356
2010	Jan	2	19	16	30.37	-20	18	34.8	0.690611	9.7	3.6	6.7e	158	3.6	245.7	-8	356
2010	Jan	3	19	11	12.82	-20	10	14.0	0.681362	9.8	4.5	4.8e	165	1.8	235.0	-8	357
2010	Jan	4	19	5	34.51	-20	3	21.7	0.675133	9.9	5.2	3.1e	170	0.8	210.4	-8	357
2010	Jan	5	18	59	46.31	-19	57	56.9	0.671976	9.9	5.4	2.8w	171	0.6	164.1	-9	358
2010	Jan	6	18	53	59.41	-19	53	58.7	0.671861	9.9	4.8	4.1w	167	1.2	130.6	-9	359
2010	Jan	7	18	48	24.55	-19	51	26.5	0.674680	9.9	4.1	6.0w	161	2.7	116.1	-9	359
2010	Jan	8	18	43	11.28	-19	50	19.3	0.680253	9.8	3.3	8.1w	155	4.8	109.1	-9	0
2010	Jan	9	18	38	27.47	-19	50	35.6	0.688351	9.7	2.7	10.1w	148	7.4	105.0	-9	1
2010	Jan	10	18	34	19.05	-19	52	12.9	0.698707	9.6	2.1	12.0w	142	10.5	102.5	-9	1
2010	Jan	11	18	30	49.95	-19	55	7.3	0.711035	9.4	1.7	13.8w	136	13.9	100.6	-9	2
2010	Jan	12	18	28	2.32	-19	59	13.0	0.725049	9.2	1.3	15.4w	130	17.5	99.3	-8	2
2010	Jan	13	18	25	56.76	-20	4	23.2	0.740468	9.0	1.0	16.9w	125	21.3	98.1	-8	2
2010	Jan	14	18	24	32.68	-20	10	29.5	0.757030	8.8	0.7	18.2w	120	25.0	97.2	-8	2
2010	Jan	15	18	23	48.60	-20	17	22.7	0.774495	8.6	0.5	19.4w	115	28.7	96.3	-8	2
2010	Jan	16	18	23	42.43	-20	24	53.0	0.792648	8.4	0.3	20.4w	111	32.3	95.5	-8	2
2010	Jan	17	18	24	11.76	-20	32	50.4	0.811301	8.2	0.2	21.3w	106	35.8	94.7	-8	2
2010	Jan	18	18	25	13.98	-20	41	5.3	0.830288	8.0	0.1	22.0w	103	39.2	94.0	-8	2
2010	Jan	19	18	26	46.45	-20	49	28.1	0.849469	7.9	0.0	22.7w	99	42.4	93.3	-8	2
2010	Jan	20	18	28	46.60	-20	57	49.9	0.868726	7.7	0.0	23.2w	95	45.4	92.5	-8	2
2010	Jan	21	18	31	11.97	-21	6	2.4	0.887958	7.5	-0.1	23.6w	92	48.3	91.8	-7	2
2010	Jan	22	18	34	0.24	-21	13	57.9	0.907083	7.4	-0.1	24.0w	89	51.0	91.1	-7	1
2010	Jan	23	18	37	9.29	-21	21	29.5	0.926030	7.2	-0.1	24.3w	86	53.6	90.3	-7	1
2010	Jan	24	18	40	37.16	-21	28	30.8	0.944746	7.1	-0.2	24.5w	83	56.0	89.6	-7	0
2010	Jan	25	18	44	22.07	-21	34	56.1	0.963183	6.9	-0.2	24.6w	81	58.2	88.8	-7	360
2010	Jan	26	18	48	22.41	-21	40	40.4	0.981305	6.8	-0.2	24.7w	78	60.3	88.0	-7	359
2010	Jan	27	18	52	36.72	-21	45	39.2	0.999084	6.7	-0.2	24.8w	76	62.3	87.2	-7	359
2010	Jan	28	18	57	3.68	-21	49	48.4	1.016497	6.6	-0.2	24.7w	73	64.2	86.5	-7	358
2010	Jan	29	19	1	42.11	-21	53	4.3	1.033526	6.5	-0.2	24.7w	71	66.0	85.7	-7	358

Mercury
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Jan	30	19	6	30.96	-21	55	23.9	1.050158	6.4	-0.2	24.6w	69	67.6	84.8	-6	357
2010	Jan	31	19	11	29.25	-21	56	44.1	1.066384	6.3	-0.2	24.5w	67	69.2	84.0	-6	357
2010	Feb	1	19	16	36.13	-21	57	2.6	1.082196	6.2	-0.2	24.3w	66	70.7	83.2	-6	356
2010	Feb	2	19	21	50.84	-21	56	17.1	1.097591	6.1	-0.2	24.1w	64	72.1	82.4	-6	355
2010	Feb	3	19	27	12.66	-21	54	25.5	1.112566	6.0	-0.2	23.9w	62	73.4	81.5	-6	355
2010	Feb	4	19	32	40.98	-21	51	26.2	1.127119	5.9	-0.2	23.6w	60	74.7	80.7	-6	354
2010	Feb	5	19	38	15.21	-21	47	17.6	1.141251	5.9	-0.2	23.4w	59	75.9	79.9	-6	354
2010	Feb	6	19	43	54.85	-21	41	58.4	1.154963	5.8	-0.2	23.1w	57	77.0	79.0	-6	353
2010	Feb	7	19	49	39.43	-21	35	27.4	1.168257	5.7	-0.2	22.7w	56	78.1	78.2	-6	352
2010	Feb	8	19	55	28.51	-21	27	43.5	1.181135	5.7	-0.2	22.4w	54	79.1	77.3	-6	352
2010	Feb	9	20	1	21.72	-21	18	45.9	1.193600	5.6	-0.2	22.1w	53	80.1	76.5	-6	351
2010	Feb	10	20	7	18.71	-21	8	33.8	1.205655	5.5	-0.2	21.7w	52	81.0	75.6	-6	350
2010	Feb	11	20	13	19.15	-20	57	6.4	1.217302	5.5	-0.2	21.3w	50	82.0	74.8	-6	350
2010	Feb	12	20	19	22.77	-20	44	23.1	1.228545	5.4	-0.2	20.9w	49	82.8	73.9	-6	349
2010	Feb	13	20	25	29.31	-20	30	23.4	1.239385	5.4	-0.2	20.4w	48	83.7	73.1	-6	348
2010	Feb	14	20	31	38.53	-20	15	6.8	1.249825	5.3	-0.2	20.0w	46	84.5	72.2	-5	347
2010	Feb	15	20	37	50.24	-19	58	32.8	1.259867	5.3	-0.2	19.5w	45	85.3	71.3	-5	347
2010	Feb	16	20	44	4.25	-19	40	41.2	1.269511	5.3	-0.2	19.1w	44	86.0	70.5	-5	346
2010	Feb	17	20	50	20.39	-19	21	31.6	1.278759	5.2	-0.3	18.6w	43	86.8	69.6	-5	345
2010	Feb	18	20	56	38.53	-19	1	3.8	1.287610	5.2	-0.3	18.1w	41	87.5	68.8	-5	345
2010	Feb	19	21	2	58.53	-18	39	17.5	1.296064	5.2	-0.3	17.6w	40	88.2	67.9	-5	344
2010	Feb	20	21	9	20.30	-18	16	12.5	1.304119	5.1	-0.3	17.0w	39	88.9	67.0	-5	344
2010	Feb	21	21	15	43.75	-17	51	48.7	1.311772	5.1	-0.4	16.5w	38	89.6	66.2	-5	343
2010	Feb	22	21	22	8.79	-17	26	6.0	1.319020	5.1	-0.4	15.9w	36	90.3	65.3	-5	342
2010	Feb	23	21	28	35.38	-16	59	4.3	1.325857	5.0	-0.4	15.3w	35	90.9	64.4	-5	342
2010	Feb	24	21	35	3.46	-16	30	43.5	1.332278	5.0	-0.5	14.7w	34	91.5	63.5	-5	341
2010	Feb	25	21	41	33.01	-16	1	3.7	1.338275	5.0	-0.5	14.1w	32	92.2	62.6	-5	340

Mercury
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Feb	26	21	48	4.00	-15	30	4.8	1.343840	5.0	-0.5	13.5	w	31	92.8	61.7	-5	340
2010	Feb	27	21	54	36.43	-14	57	46.8	1.348961	5.0	-0.6	12.8	w	30	93.4	60.8	-5	339
2010	Feb	28	22	1	10.31	-14	24	9.9	1.353626	4.9	-0.6	12.1	w	28	94.0	59.8	-5	339
2010	Mar	1	22	7	45.65	-13	49	14.1	1.357820	4.9	-0.7	11.4	w	27	94.6	58.8	-5	338
2010	Mar	2	22	14	22.49	-13	12	59.6	1.361528	4.9	-0.8	10.7	w	25	95.1	57.7	-5	338
2010	Mar	3	22	21	0.86	-12	35	26.7	1.364731	4.9	-0.8	10.0	w	24	95.7	56.6	-5	337
2010	Mar	4	22	27	40.82	-11	56	35.6	1.367407	4.9	-0.9	9.3	w	22	96.2	55.3	-5	337
2010	Mar	5	22	34	22.40	-11	16	26.7	1.369532	4.9	-1.0	8.5	w	21	96.8	54.0	-5	336
2010	Mar	6	22	41	5.67	-10	35	0.8	1.371081	4.9	-1.1	7.8	w	19	97.3	52.5	-5	336
2010	Mar	7	22	47	50.69	- 9	52	18.4	1.372024	4.9	-1.1	7.0	w	17	97.7	50.7	-4	335
2010	Mar	8	22	54	37.49	- 9	8	20.4	1.372330	4.9	-1.2	6.2	w	16	98.2	48.6	-4	335
2010	Mar	9	23	1	26.14	- 8	23	7.8	1.371964	4.9	-1.3	5.4	w	14	98.6	46.0	-4	334
2010	Mar	10	23	8	16.69	- 7	36	42.1	1.370888	4.9	-1.4	4.6	w	12	99.0	42.5	-4	334
2010	Mar	11	23	15	9.16	- 6	49	4.7	1.369062	4.9	-1.6	3.8	w	10	99.3	37.7	-4	334
2010	Mar	12	23	22	3.58	- 6	0	17.6	1.366440	4.9	-1.7	3.0	w	8	99.5	30.3	-4	333
2010	Mar	13	23	28	59.96	- 5	10	23.0	1.362978	4.9	-1.8	2.2	w	6	99.7	17.7	-4	333
2010	Mar	14	23	35	58.26	- 4	19	23.9	1.358626	4.9	-1.9	1.7	e	5	99.8	354.9	-4	333
2010	Mar	15	23	42	58.44	- 3	27	23.3	1.353332	4.9	-2.0	1.5	e	4	99.9	320.5	-4	332
2010	Mar	16	23	50	0.40	- 2	34	25.3	1.347045	5.0	-1.9	2.0	e	5	99.8	291.0	-4	332
2010	Mar	17	23	57	3.99	- 1	40	34.4	1.339710	5.0	-1.9	2.7	e	8	99.6	274.2	-4	332
2010	Mar	18	0	4	8.99	- 0	45	56.1	1.331276	5.0	-1.8	3.5	e	10	99.2	264.9	-4	332
2010	Mar	19	0	11	15.13	0	9	23.5	1.321691	5.1	-1.8	4.5	e	13	98.7	259.2	-4	332
2010	Mar	20	0	18	22.04	1	5	17.0	1.310909	5.1	-1.7	5.4	e	16	98.0	255.4	-4	332
2010	Mar	21	0	25	29.26	2	1	36.3	1.298887	5.1	-1.6	6.4	e	20	97.0	252.7	-4	331
2010	Mar	22	0	32	36.23	2	58	12.0	1.285592	5.2	-1.6	7.4	e	23	95.9	250.7	-4	331
2010	Mar	23	0	39	42.26	3	54	53.8	1.271000	5.3	-1.5	8.4	e	27	94.5	249.2	-4	331
2010	Mar	24	0	46	46.55	4	51	30.3	1.255101	5.3	-1.4	9.4	e	31	92.9	248.0	-4	331
2010	Mar	25	0	53	48.20	5	47	49.1	1.237898	5.4	-1.4	10.4	e	35	91.0	247.0	-4	331

Mercury
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Mar	26	1	0	46.16	6	43	37.0	1.219413	5.5	-1.3	11.4e	39		88.8	246.3	-4	331
2010	Mar	27	1	7	39.28	7	38	40.2	1.199686	5.6	-1.3	12.3e	43		86.3	245.7	-4	332
2010	Mar	28	1	14	26.33	8	32	44.3	1.178777	5.7	-1.2	13.2e	48		83.6	245.2	-4	332
2010	Mar	29	1	21	5.97	9	25	35.0	1.156764	5.8	-1.1	14.1e	52		80.7	244.8	-4	332
2010	Mar	30	1	27	36.84	10	16	58.0	1.133745	5.9	-1.1	14.9e	57		77.5	244.5	-4	332
2010	Mar	31	1	33	57.51	11	6	39.6	1.109835	6.0	-1.0	15.7e	61		74.1	244.3	-4	332
2010	Apr	1	1	40	6.56	11	54	26.5	1.085161	6.2	-0.9	16.4e	66		70.5	244.1	-4	332
2010	Apr	2	1	46	2.57	12	40	6.6	1.059864	6.3	-0.9	17.1e	70		66.8	243.9	-4	333
2010	Apr	3	1	51	44.18	13	23	28.8	1.034090	6.5	-0.8	17.7e	75		63.0	243.8	-4	333
2010	Apr	4	1	57	10.05	14	4	23.0	1.007987	6.6	-0.7	18.2e	79		59.1	243.7	-4	333
2010	Apr	5	2	2	18.93	14	42	40.6	0.981707	6.8	-0.6	18.6e	84		55.2	243.6	-4	333
2010	Apr	6	2	7	9.66	15	18	14.1	0.955395	7.0	-0.5	18.9e	88		51.4	243.5	-4	333
2010	Apr	7	2	11	41.16	15	50	57.0	0.929192	7.2	-0.3	19.2e	93		47.5	243.4	-4	334
2010	Apr	8	2	15	52.44	16	20	43.9	0.903234	7.4	-0.2	19.3e	97		43.8	243.3	-4	334
2010	Apr	9	2	19	42.62	16	47	30.3	0.877644	7.6	-0.1	19.3e	101		40.1	243.2	-4	334
2010	Apr	10	2	23	10.92	17	11	12.3	0.852541	7.8	0.1	19.3e	106		36.5	243.1	-4	334
2010	Apr	11	2	26	16.68	17	31	46.9	0.828029	8.1	0.3	19.1e	110		33.0	243.0	-4	334
2010	Apr	12	2	28	59.35	17	49	11.4	0.804208	8.3	0.5	18.9e	114		29.7	242.8	-4	335
2010	Apr	13	2	31	18.52	18	3	23.8	0.781166	8.6	0.7	18.5e	118		26.5	242.6	-4	335
2010	Apr	14	2	33	13.90	18	14	22.4	0.758984	8.8	0.9	18.0e	122		23.4	242.4	-4	335
2010	Apr	15	2	34	45.37	18	22	6.0	0.737737	9.1	1.2	17.4e	126		20.5	242.1	-4	335
2010	Apr	16	2	35	52.99	18	26	34.2	0.717490	9.3	1.4	16.8e	130		17.8	241.8	-4	335
2010	Apr	17	2	36	37.01	18	27	47.1	0.698305	9.6	1.7	16.0e	134		15.2	241.4	-4	335
2010	Apr	18	2	36	57.90	18	25	45.8	0.680235	9.8	2.0	15.1e	138		12.9	241.0	-4	335
2010	Apr	19	2	36	56.35	18	20	32.6	0.663331	10.1	2.4	14.0e	142		10.6	240.5	-4	335
2010	Apr	20	2	36	33.32	18	12	11.1	0.647636	10.3	2.7	12.9e	146		8.6	239.9	-3	335
2010	Apr	21	2	35	50.01	18	0	46.7	0.633190	10.5	3.1	11.7e	150		6.8	239.2	-3	335

Mercury
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Apr	22	2	34	47.92	17	46	26.7	0.620024	10.8	3.5	10.5e	154	5.2	238.3	-3	335	
2010	Apr	23	2	33	28.80	17	29	20.4	0.608167	11.0	4.0	9.1e	158	3.8	237.2	-3	335	
2010	Apr	24	2	31	54.64	17	9	39.8	0.597640	11.2	4.4	7.7e	161	2.6	235.8	-3	335	
2010	Apr	25	2	30	7.68	16	47	39.0	0.588459	11.4	4.9	6.2e	165	1.6	233.8	-3	335	
2010	Apr	26	2	28	10.35	16	23	35.0	0.580630	11.5	5.5	4.6e	169	0.9	230.5	-3	335	
2010	Apr	27	2	26	5.20	15	57	46.5	0.574155	11.6	6.0	3.1e	173	0.4	224.1	-3	334	
2010	Apr	28	2	23	54.89	15	30	34.7	0.569027	11.7	6.5	1.6e	176	0.1	205.6	-2	334	
2010	Apr	29	2	21	42.11	15	2	22.0	0.565233	11.8	6.8	1.0w	178	0.0	131.7	-2	334	
2010	Apr	30	2	19	29.50	14	33	32.0	0.562751	11.9	6.3	2.2w	175	0.2	86.7	-2	334	
2010	May	1	2	17	19.61	14	4	28.7	0.561553	11.9	5.8	3.8w	172	0.5	75.6	-2	334	
2010	May	2	2	15	14.85	13	35	35.8	0.561606	11.9	5.3	5.4w	168	1.1	71.0	-2	334	
2010	May	3	2	13	17.43	13	7	16.2	0.562868	11.9	4.9	6.9w	164	1.8	68.5	-1	334	
2010	May	4	2	11	29.35	12	39	51.7	0.565296	11.8	4.4	8.5w	161	2.7	66.8	-1	334	
2010	May	5	2	9	52.33	12	13	41.9	0.568841	11.7	4.0	10.0w	158	3.8	65.7	-1	334	
2010	May	6	2	8	27.86	11	49	4.4	0.573453	11.6	3.7	11.4w	154	5.0	64.9	-1	334	
2010	May	7	2	7	17.15	11	26	14.6	0.579080	11.5	3.3	12.8w	151	6.3	64.3	0	333	
2010	May	8	2	6	21.17	11	5	25.1	0.585668	11.4	3.0	14.1w	148	7.7	63.8	0	333	
2010	May	9	2	5	40.65	10	46	46.1	0.593164	11.3	2.8	15.4w	145	9.1	63.4	0	333	
2010	May	10	2	5	16.08	10	30	25.5	0.601516	11.1	2.5	16.6w	142	10.7	63.2	0	333	
2010	May	11	2	5	7.79	10	16	28.7	0.610673	10.9	2.3	17.7w	139	12.3	63.0	0	333	
2010	May	12	2	5	15.93	10	4	59.4	0.620586	10.8	2.1	18.7w	136	14.0	62.8	1	333	
2010	May	13	2	5	40.51	9	55	59.2	0.631209	10.6	1.9	19.6w	133	15.7	62.7	1	333	
2010	May	14	2	6	21.41	9	49	28.0	0.642496	10.4	1.7	20.5w	131	17.4	62.7	1	333	
2010	May	15	2	7	18.44	9	45	24.8	0.654409	10.2	1.5	21.2w	128	19.1	62.6	1	333	
2010	May	16	2	8	31.32	9	43	47.2	0.666906	10.0	1.4	22.0w	126	20.9	62.7	1	334	
2010	May	17	2	9	59.75	9	44	31.8	0.679954	9.8	1.3	22.6w	123	22.6	62.7	1	334	
2010	May	18	2	11	43.37	9	47	34.8	0.693519	9.6	1.1	23.1w	121	24.4	62.8	1	334	
2010	May	19	2	13	41.81	9	52	51.5	0.707571	9.4	1.0	23.6w	118	26.2	62.9	2	334	

Mercury
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	May	20	2	15	54.71	10	0	17.3	0.722081	9.3	0.9	24.0	w	116	28.0	63.0	2	334
2010	May	21	2	18	21.70	10	9	46.7	0.737024	9.1	0.8	24.4	w	114	29.8	63.2	2	334
2010	May	22	2	21	2.43	10	21	14.5	0.752376	8.9	0.7	24.6	w	112	31.5	63.4	2	334
2010	May	23	2	23	56.58	10	34	35.1	0.768114	8.7	0.7	24.9	w	109	33.3	63.6	2	334
2010	May	24	2	27	3.85	10	49	43.0	0.784217	8.5	0.6	25.0	w	107	35.1	63.8	2	334
2010	May	25	2	30	23.97	11	6	32.5	0.800666	8.3	0.5	25.1	w	105	36.9	64.1	2	335
2010	May	26	2	33	56.69	11	24	58.0	0.817440	8.2	0.4	25.1	w	103	38.7	64.3	2	335
2010	May	27	2	37	41.81	11	44	53.9	0.834523	8.0	0.4	25.1	w	101	40.5	64.6	2	335
2010	May	28	2	41	39.16	12	6	14.6	0.851894	7.8	0.3	25.0	w	99	42.4	65.0	3	335
2010	May	29	2	45	48.61	12	28	54.5	0.869536	7.7	0.2	24.9	w	97	44.2	65.3	3	336
2010	May	30	2	50	10.06	12	52	48.1	0.887429	7.5	0.2	24.7	w	94	46.1	65.7	3	336
2010	May	31	2	54	43.43	13	17	49.5	0.905553	7.4	0.1	24.5	w	92	48.0	66.1	3	336
2010	Jun	1	2	59	28.72	13	43	53.3	0.923888	7.2	0.1	24.2	w	90	49.9	66.6	3	337
2010	Jun	2	3	4	25.92	14	10	53.8	0.942411	7.1	0.0	23.9	w	88	51.8	67.1	3	337
2010	Jun	3	3	9	35.08	14	38	45.1	0.961097	7.0	-0.1	23.5	w	86	53.8	67.6	3	337
2010	Jun	4	3	14	56.29	15	7	21.3	0.979919	6.8	-0.1	23.1	w	83	55.8	68.1	3	338
2010	Jun	5	3	20	29.63	15	36	36.4	0.998848	6.7	-0.2	22.6	w	81	57.9	68.7	3	338
2010	Jun	6	3	26	15.26	16	6	24.1	1.017850	6.6	-0.2	22.1	w	79	60.0	69.3	3	339
2010	Jun	7	3	32	13.31	16	36	37.9	1.036887	6.4	-0.3	21.5	w	76	62.1	70.0	3	339
2010	Jun	8	3	38	23.97	17	7	10.9	1.055918	6.3	-0.4	20.9	w	73	64.3	70.7	3	340
2010	Jun	9	3	44	47.41	17	37	56.0	1.074896	6.2	-0.4	20.2	w	71	66.5	71.4	3	340
2010	Jun	10	3	51	23.81	18	8	45.5	1.093769	6.1	-0.5	19.5	w	68	68.7	72.2	3	341
2010	Jun	11	3	58	13.34	18	39	31.5	1.112478	6.0	-0.6	18.8	w	65	71.0	73.1	3	342
2010	Jun	12	4	5	16.15	19	10	5.4	1.130958	5.9	-0.6	18.0	w	62	73.3	74.0	3	342
2010	Jun	13	4	12	32.35	19	40	18.1	1.149139	5.8	-0.7	17.2	w	59	75.6	74.9	3	343
2010	Jun	14	4	20	2.00	20	9	59.9	1.166942	5.7	-0.8	16.3	w	56	78.0	76.0	3	344
2010	Jun	15	4	27	45.10	20	39	0.6	1.184282	5.6	-0.9	15.4	w	53	80.3	77.1	3	344

Mercury
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Jun	16	4	35	41.56	21	7	9.5	1.201069	5.6	-1.0	14.4w	49	82.6	78.3	3	345
2010	Jun	17	4	43	51.17	21	34	15.3	1.217206	5.5	-1.0	13.4w	46	84.9	79.6	4	346
2010	Jun	18	4	52	13.60	22	0	6.2	1.232595	5.4	-1.1	12.4w	42	87.1	81.0	4	347
2010	Jun	19	5	0	48.40	22	24	30.4	1.247132	5.4	-1.2	11.3w	38	89.2	82.5	4	348
2010	Jun	20	5	9	34.91	22	47	15.9	1.260715	5.3	-1.3	10.2w	35	91.2	84.2	4	349
2010	Jun	21	5	18	32.32	23	8	10.6	1.273245	5.2	-1.4	9.1w	31	93.0	86.1	4	350
2010	Jun	22	5	27	39.66	23	27	3.1	1.284626	5.2	-1.6	7.9w	27	94.7	88.4	4	351
2010	Jun	23	5	36	55.74	23	43	42.5	1.294774	5.2	-1.7	6.7w	23	96.1	91.1	4	352
2010	Jun	24	5	46	19.24	23	57	59.0	1.303615	5.1	-1.8	5.6w	19	97.4	94.5	4	353
2010	Jun	25	5	55	48.67	24	9	43.9	1.311088	5.1	-1.9	4.4w	15	98.4	99.1	4	354
2010	Jun	26	6	5	22.44	24	18	50.1	1.317152	5.1	-2.1	3.2w	11	99.1	106.5	4	355
2010	Jun	27	6	14	58.89	24	25	12.3	1.321782	5.1	-2.2	2.1w	7	99.6	120.4	4	357
2010	Jun	28	6	24	36.33	24	28	46.9	1.324971	5.0	-2.3	1.3w	4	99.9	154.3	4	358
2010	Jun	29	6	34	13.08	24	29	32.2	1.326735	5.0	-2.3	1.4e	5	99.8	208.8	4	359
2010	Jun	30	6	43	47.50	24	27	28.7	1.327101	5.0	-2.2	2.3e	7	99.6	237.0	4	360
2010	Jul	1	6	53	18.08	24	22	38.1	1.326117	5.0	-2.0	3.4e	11	99.1	249.1	4	1
2010	Jul	2	7	2	43.40	24	15	4.3	1.323841	5.0	-1.8	4.5e	14	98.4	255.7	4	2
2010	Jul	3	7	12	2.18	24	4	52.2	1.320341	5.1	-1.7	5.7e	18	97.5	260.1	4	3
2010	Jul	4	7	21	13.34	23	52	7.9	1.315694	5.1	-1.5	6.8e	21	96.5	263.3	4	4
2010	Jul	5	7	30	15.91	23	36	58.5	1.309981	5.1	-1.4	7.9e	25	95.4	265.9	4	5
2010	Jul	6	7	39	9.10	23	19	31.6	1.303284	5.1	-1.3	9.0e	28	94.2	268.1	4	7
2010	Jul	7	7	47	52.30	22	59	55.6	1.295685	5.2	-1.2	10.1e	31	92.8	270.0	5	8
2010	Jul	8	7	56	24.99	22	38	18.7	1.287266	5.2	-1.1	11.1e	34	91.4	271.6	5	9
2010	Jul	9	8	4	46.82	22	14	49.5	1.278105	5.2	-1.0	12.1e	37	90.0	273.2	5	10
2010	Jul	10	8	12	57.52	21	49	36.3	1.268274	5.3	-0.9	13.1e	40	88.5	274.6	5	10
2010	Jul	11	8	20	56.94	21	22	47.7	1.257844	5.3	-0.8	14.0e	42	87.0	275.9	5	11
2010	Jul	12	8	28	44.99	20	54	31.6	1.246877	5.4	-0.7	14.9e	45	85.5	277.1	5	12
2010	Jul	13	8	36	21.67	20	24	55.9	1.235433	5.4	-0.7	15.8e	47	84.0	278.3	5	13

Mercury
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Jul	14	8	43	47.00	19	54	8.2	1.223566	5.5	-0.6	16.7e	49	82.5	279.4	5	14
2010	Jul	15	8	51	1.09	19	22	15.6	1.211324	5.5	-0.5	17.5e	52	81.0	280.4	5	15
2010	Jul	16	8	58	4.03	18	49	25.0	1.198750	5.6	-0.5	18.3e	54	79.6	281.4	5	15
2010	Jul	17	9	4	55.98	18	15	42.9	1.185885	5.6	-0.4	19.0e	56	78.1	282.3	5	16
2010	Jul	18	9	11	37.09	17	41	15.6	1.172763	5.7	-0.4	19.8e	58	76.6	283.2	6	17
2010	Jul	19	9	18	7.53	17	6	9.0	1.159416	5.8	-0.3	20.5e	60	75.2	284.1	6	17
2010	Jul	20	9	24	27.45	16	30	28.8	1.145871	5.8	-0.3	21.1e	62	73.8	284.9	6	18
2010	Jul	21	9	30	37.02	15	54	20.3	1.132153	5.9	-0.2	21.8e	63	72.4	285.7	6	19
2010	Jul	22	9	36	36.40	15	17	48.8	1.118284	6.0	-0.2	22.4e	65	71.0	286.4	6	19
2010	Jul	23	9	42	25.72	14	40	59.1	1.104283	6.0	-0.2	22.9e	67	69.6	287.1	6	20
2010	Jul	24	9	48	5.12	14	3	56.0	1.090167	6.1	-0.1	23.5e	69	68.2	287.8	6	20
2010	Jul	25	9	53	34.71	13	26	44.2	1.075951	6.2	-0.1	24.0e	70	66.9	288.4	6	21
2010	Jul	26	9	58	54.58	12	49	28.1	1.061647	6.3	-0.1	24.4e	72	65.5	289.1	6	21
2010	Jul	27	10	4	4.79	12	12	12.0	1.047269	6.4	0.0	24.9e	74	64.1	289.7	7	22
2010	Jul	28	10	9	5.40	11	35	0.3	1.032826	6.5	0.0	25.3e	75	62.8	290.3	7	22
2010	Jul	29	10	13	56.42	10	57	57.2	1.018329	6.6	0.0	25.7e	77	61.4	290.8	7	22
2010	Jul	30	10	18	37.86	10	21	6.8	1.003786	6.7	0.1	26.0e	78	60.1	291.4	7	23
2010	Jul	31	10	23	9.66	9	44	33.5	0.989206	6.8	0.1	26.3e	80	58.7	291.9	7	23
2010	Aug	1	10	27	31.77	9	8	21.4	0.974596	6.9	0.1	26.6e	82	57.3	292.4	7	23
2010	Aug	2	10	31	44.09	8	32	35.0	0.959966	7.0	0.1	26.8e	83	55.9	292.9	7	24
2010	Aug	3	10	35	46.47	7	57	18.5	0.945322	7.1	0.2	27.0e	85	54.5	293.4	7	24
2010	Aug	4	10	39	38.74	7	22	36.7	0.930675	7.2	0.2	27.2e	87	53.0	293.9	8	24
2010	Aug	5	10	43	20.69	6	48	34.0	0.916032	7.3	0.2	27.3e	88	51.5	294.4	8	25
2010	Aug	6	10	46	52.06	6	15	15.6	0.901404	7.4	0.2	27.3e	90	50.0	294.9	8	25
2010	Aug	7	10	50	12.56	5	42	46.5	0.886802	7.5	0.3	27.4e	92	48.5	295.3	8	25
2010	Aug	8	10	53	21.83	5	11	12.1	0.872238	7.7	0.3	27.3e	94	46.9	295.8	8	25
2010	Aug	9	10	56	19.49	4	40	38.1	0.857726	7.8	0.3	27.3e	95	45.3	296.3	8	25

Mercury
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Aug	10	10	59	5.10	4	11	10.7	0.843282	7.9	0.4	27.2e		97	43.7	296.8	8	26
2010	Aug	11	11	1	38.17	3	42	56.2	0.828924	8.1	0.4	27.0e		99	42.0	297.2	9	26
2010	Aug	12	11	3	58.18	3	16	1.5	0.814672	8.2	0.5	26.7e		101	40.3	297.7	9	26
2010	Aug	13	11	6	4.55	2	50	33.9	0.800552	8.3	0.5	26.5e		103	38.5	298.2	9	26
2010	Aug	14	11	7	56.66	2	26	41.1	0.786589	8.5	0.6	26.1e		105	36.7	298.7	9	26
2010	Aug	15	11	9	33.88	2	4	31.5	0.772816	8.6	0.6	25.7e		108	34.8	299.3	9	26
2010	Aug	16	11	10	55.51	1	44	13.7	0.759268	8.8	0.7	25.2e		110	32.9	299.8	9	26
2010	Aug	17	11	12	0.86	1	25	56.9	0.745986	9.0	0.8	24.6e		112	30.9	300.4	9	26
2010	Aug	18	11	12	49.23	1	9	50.9	0.733016	9.1	0.9	24.0e		115	28.9	301.1	10	27
2010	Aug	19	11	13	19.92	0	56	5.7	0.720409	9.3	1.0	23.3e		118	26.8	301.8	10	27
2010	Aug	20	11	13	32.30	0	44	51.6	0.708223	9.4	1.1	22.5e		120	24.7	302.5	10	27
2010	Aug	21	11	13	25.75	0	36	19.1	0.696523	9.6	1.2	21.6e		123	22.5	303.3	10	27
2010	Aug	22	11	12	59.80	0	30	38.5	0.685380	9.7	1.4	20.6e		126	20.4	304.2	10	27
2010	Aug	23	11	12	14.10	0	27	59.8	0.674873	9.9	1.6	19.5e		129	18.2	305.2	10	27
2010	Aug	24	11	11	8.48	0	28	32.1	0.665089	10.0	1.8	18.3e		133	16.0	306.3	10	27
2010	Aug	25	11	9	43.01	0	32	23.5	0.656122	10.2	2.0	17.1e		136	13.9	307.6	11	26
2010	Aug	26	11	7	58.08	0	39	40.1	0.648071	10.3	2.3	15.7e		140	11.8	309.2	11	26
2010	Aug	27	11	5	54.40	0	50	25.7	0.641044	10.4	2.6	14.3e		144	9.8	311.0	11	26
2010	Aug	28	11	3	33.12	1	4	41.1	0.635152	10.5	2.9	12.8e		147	7.9	313.3	11	26
2010	Aug	29	11	0	55.84	1	22	23.3	0.630512	10.6	3.3	11.3e		151	6.1	316.3	11	26
2010	Aug	30	10	58	4.63	1	43	24.9	0.627240	10.6	3.7	9.6e		155	4.6	320.2	11	26
2010	Aug	31	10	55	2.11	2	7	33.8	0.625451	10.7	4.2	8.0e		159	3.2	325.8	11	26
2010	Sep	1	10	51	51.37	2	34	32.4	0.625256	10.7	4.6	6.5e		163	2.1	334.0	11	25
2010	Sep	2	10	48	35.97	3	3	58.4	0.626760	10.7	5.1	5.1e		167	1.3	347.2	11	25
2010	Sep	3	10	45	19.87	3	35	23.9	0.630055	10.6	5.4	4.1w		169	0.9	8.0	10	25
2010	Sep	4	10	42	7.30	4	8	17.2	0.635220	10.5	5.4	3.9w		170	0.8	35.6	10	25
2010	Sep	5	10	39	2.67	4	42	3.0	0.642315	10.4	5.1	4.5w		168	1.2	60.3	10	25
2010	Sep	6	10	36	10.41	5	16	3.7	0.651382	10.3	4.7	5.7w		164	1.9	76.6	10	24

Mercury
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Sep	7	10	33	34.82	5	49	41.0	0.662440	10.1	4.1	7.1	w	160	3.1	86.7	10	24
2010	Sep	8	10	31	19.93	6	22	16.9	0.675483	9.9	3.5	8.6	w	155	4.7	93.3	9	24
2010	Sep	9	10	29	29.40	6	53	14.9	0.690481	9.7	3.0	10.0	w	150	6.7	97.8	9	24
2010	Sep	10	10	28	6.37	7	22	1.5	0.707380	9.4	2.5	11.4	w	145	9.2	101.1	9	24
2010	Sep	11	10	27	13.42	7	48	6.5	0.726101	9.2	2.0	12.6	w	139	12.1	103.6	8	24
2010	Sep	12	10	26	52.50	8	11	3.8	0.746541	8.9	1.5	13.8	w	134	15.3	105.6	8	23
2010	Sep	13	10	27	4.94	8	30	31.5	0.768575	8.7	1.2	14.8	w	129	18.9	107.2	8	23
2010	Sep	14	10	27	51.44	8	46	12.0	0.792058	8.4	0.8	15.7	w	123	22.7	108.6	8	24
2010	Sep	15	10	29	12.09	8	57	52.4	0.816823	8.2	0.5	16.4	w	118	26.9	109.8	7	24
2010	Sep	16	10	31	6.42	9	5	23.4	0.842690	7.9	0.2	17.0	w	112	31.2	110.9	7	24
2010	Sep	17	10	33	33.47	9	8	40.0	0.869463	7.7	0.0	17.4	w	107	35.7	111.9	7	24
2010	Sep	18	10	36	31.84	9	7	40.7	0.896938	7.4	-0.2	17.7	w	101	40.3	112.8	6	24
2010	Sep	19	10	39	59.74	9	2	27.4	0.924902	7.2	-0.4	17.8	w	96	44.9	113.7	6	24
2010	Sep	20	10	43	55.10	8	53	5.2	0.953142	7.0	-0.5	17.9	w	91	49.5	114.5	6	25
2010	Sep	21	10	48	15.63	8	39	42.0	0.981448	6.8	-0.6	17.8	w	85	54.1	115.3	6	25
2010	Sep	22	10	52	58.88	8	22	28.2	1.009615	6.6	-0.7	17.6	w	80	58.6	116.0	5	25
2010	Sep	23	10	58	2.33	8	1	36.1	1.037452	6.4	-0.8	17.3	w	75	62.8	116.8	5	25
2010	Sep	24	11	3	23.46	7	37	20.0	1.064784	6.3	-0.9	16.9	w	70	66.9	117.5	5	26
2010	Sep	25	11	8	59.82	7	9	55.3	1.091453	6.1	-0.9	16.4	w	65	70.8	118.2	5	26
2010	Sep	26	11	14	49.05	6	39	38.2	1.117325	6.0	-1.0	15.9	w	61	74.3	118.8	5	26
2010	Sep	27	11	20	48.96	6	6	45.7	1.142286	5.8	-1.0	15.3	w	56	77.6	119.5	4	27
2010	Sep	28	11	26	57.51	5	31	34.3	1.166246	5.7	-1.0	14.6	w	52	80.7	120.1	4	27
2010	Sep	29	11	33	12.91	4	54	20.6	1.189135	5.6	-1.1	14.0	w	48	83.4	120.7	4	27
2010	Sep	30	11	39	33.54	4	15	20.5	1.210906	5.5	-1.1	13.2	w	44	85.8	121.4	4	27
2010	Oct	1	11	45	58.01	3	34	49.2	1.231528	5.4	-1.1	12.5	w	40	88.0	122.0	4	28
2010	Oct	2	11	52	25.12	2	53	0.8	1.250987	5.3	-1.1	11.7	w	37	90.0	122.6	4	28
2010	Oct	3	11	58	53.87	2	10	8.6	1.269281	5.3	-1.2	11.0	w	34	91.7	123.2	3	28

Mercury
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Oct	4	12	5	23.42	1	26	24.6	1.286420	5.2	-1.2	10.2	w	30	93.1	123.9	3	28
2010	Oct	5	12	11	53.11	0	41	59.9	1.302423	5.1	-1.2	9.4	w	27	94.4	124.5	3	28
2010	Oct	6	12	18	22.39	- 0	2	55.7	1.317316	5.1	-1.2	8.6	w	24	95.5	125.3	3	28
2010	Oct	7	12	24	50.86	- 0	48	13.1	1.331128	5.0	-1.3	7.8	w	22	96.5	126.0	3	28
2010	Oct	8	12	31	18.20	- 1	33	44.4	1.343892	5.0	-1.3	7.0	w	19	97.2	126.9	3	29
2010	Oct	9	12	37	44.19	- 2	19	22.4	1.355644	4.9	-1.3	6.2	w	17	97.9	128.0	3	29
2010	Oct	10	12	44	8.68	- 3	5	0.8	1.366421	4.9	-1.4	5.5	w	14	98.5	129.2	3	29
2010	Oct	11	12	50	31.58	- 3	50	33.8	1.376259	4.9	-1.4	4.7	w	12	98.9	130.8	3	29
2010	Oct	12	12	56	52.86	- 4	35	56.6	1.385194	4.8	-1.5	3.9	w	10	99.2	132.9	3	29
2010	Oct	13	13	3	12.51	- 5	21	4.7	1.393261	4.8	-1.5	3.2	w	8	99.5	136.0	2	28
2010	Oct	14	13	9	30.57	- 6	5	54.1	1.400494	4.8	-1.5	2.5	w	6	99.7	140.6	2	28
2010	Oct	15	13	15	47.11	- 6	50	21.2	1.406925	4.7	-1.6	1.8	w	4	99.9	148.7	2	28
2010	Oct	16	13	22	2.20	- 7	34	22.9	1.412584	4.7	-1.6	1.2	w	3	99.9	165.0	2	28
2010	Oct	17	13	28	15.96	- 8	17	56.5	1.417500	4.7	-1.6	0.9	e	2	100.0	199.7	2	28
2010	Oct	18	13	34	28.50	- 9	0	59.4	1.421697	4.7	-1.6	1.0	e	2	100.0	242.1	2	28
2010	Oct	19	13	40	39.93	- 9	43	29.3	1.425202	4.7	-1.5	1.5	e	4	99.9	264.8	2	28
2010	Oct	20	13	46	50.38	-10	25	24.1	1.428036	4.7	-1.4	2.1	e	5	99.8	275.3	2	27
2010	Oct	21	13	53	0.00	-11	6	41.9	1.430220	4.7	-1.3	2.7	e	6	99.7	281.0	2	27
2010	Oct	22	13	59	8.91	-11	47	21.0	1.431772	4.7	-1.2	3.4	e	8	99.6	284.4	2	27
2010	Oct	23	14	5	17.25	-12	27	19.8	1.432708	4.7	-1.2	4.0	e	9	99.4	286.6	2	27
2010	Oct	24	14	11	25.14	-13	6	36.6	1.433045	4.7	-1.1	4.6	e	10	99.2	288.1	2	26
2010	Oct	25	14	17	32.72	-13	45	10.2	1.432796	4.7	-1.0	5.3	e	12	99.0	289.1	1	26
2010	Oct	26	14	23	40.11	-14	22	59.0	1.431972	4.7	-1.0	5.9	e	13	98.7	289.8	1	26
2010	Oct	27	14	29	47.43	-15	0	1.8	1.430583	4.7	-0.9	6.5	e	14	98.5	290.4	1	25
2010	Oct	28	14	35	54.79	-15	36	17.2	1.428639	4.7	-0.9	7.1	e	15	98.2	290.7	1	25
2010	Oct	29	14	42	2.29	-16	11	44.1	1.426146	4.7	-0.8	7.7	e	17	97.9	290.9	1	25
2010	Oct	30	14	48	10.04	-16	46	21.1	1.423111	4.7	-0.8	8.2	e	18	97.6	291.0	1	24
2010	Oct	31	14	54	18.10	-17	20	7.0	1.419538	4.7	-0.7	8.8	e	19	97.2	291.1	1	24

Mercury
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Nov	1	15	0	26.57	-17	53	0.5	1.415431	4.7	-0.7	9.4e	20	96.9	291.0	1	23
2010	Nov	2	15	6	35.51	-18	25	0.5	1.410792	4.7	-0.6	9.9e	22	96.5	290.9	1	23
2010	Nov	3	15	12	44.98	-18	56	5.7	1.405623	4.8	-0.6	10.5e	23	96.1	290.7	1	22
2010	Nov	4	15	18	55.02	-19	26	14.8	1.399924	4.8	-0.6	11.0e	24	95.7	290.5	1	22
2010	Nov	5	15	25	5.65	-19	55	26.6	1.393694	4.8	-0.5	11.6e	25	95.2	290.3	1	21
2010	Nov	6	15	31	16.90	-20	23	39.7	1.386931	4.8	-0.5	12.1e	26	94.8	290.0	0	21
2010	Nov	7	15	37	28.75	-20	50	52.9	1.379633	4.8	-0.5	12.6e	28	94.3	289.7	0	20
2010	Nov	8	15	43	41.17	-21	17	4.9	1.371798	4.9	-0.5	13.1e	29	93.7	289.3	0	20
2010	Nov	9	15	49	54.14	-21	42	14.3	1.363420	4.9	-0.5	13.6e	30	93.2	288.9	0	19
2010	Nov	10	15	56	7.57	-22	6	19.8	1.354496	4.9	-0.4	14.1e	32	92.6	288.5	0	19
2010	Nov	11	16	2	21.39	-22	29	19.9	1.345020	5.0	-0.4	14.6e	33	92.0	288.1	0	18
2010	Nov	12	16	8	35.48	-22	51	13.3	1.334985	5.0	-0.4	15.1e	34	91.3	287.6	0	17
2010	Nov	13	16	14	49.69	-23	11	58.5	1.324385	5.0	-0.4	15.6e	36	90.6	287.1	0	17
2010	Nov	14	16	21	3.86	-23	31	34.1	1.313213	5.1	-0.4	16.0e	37	89.9	286.6	0	16
2010	Nov	15	16	27	17.78	-23	49	58.7	1.301462	5.1	-0.4	16.5e	39	89.1	286.0	0	16
2010	Nov	16	16	33	31.20	-24	7	10.8	1.289121	5.2	-0.4	17.0e	40	88.3	285.5	0	15
2010	Nov	17	16	39	43.85	-24	23	9.0	1.276184	5.2	-0.4	17.4e	42	87.4	284.9	-1	14
2010	Nov	18	16	45	55.39	-24	37	51.9	1.262642	5.3	-0.4	17.8e	43	86.4	284.3	-1	14
2010	Nov	19	16	52	5.43	-24	51	18.2	1.248485	5.4	-0.4	18.2e	45	85.4	283.7	-1	13
2010	Nov	20	16	58	13.51	-25	3	26.3	1.233706	5.4	-0.4	18.6e	47	84.3	283.1	-1	12
2010	Nov	21	17	4	19.14	-25	14	15.1	1.218296	5.5	-0.4	19.0e	49	83.1	282.5	-1	12
2010	Nov	22	17	10	21.72	-25	23	43.4	1.202247	5.6	-0.4	19.4e	50	81.8	281.9	-1	11
2010	Nov	23	17	16	20.56	-25	31	50.0	1.185554	5.6	-0.4	19.7e	52	80.5	281.2	-1	10
2010	Nov	24	17	22	14.91	-25	38	33.9	1.168211	5.7	-0.4	20.1e	55	79.0	280.6	-1	10
2010	Nov	25	17	28	3.87	-25	43	54.2	1.150215	5.8	-0.4	20.4e	57	77.4	279.9	-1	9
2010	Nov	26	17	33	46.45	-25	47	50.2	1.131567	5.9	-0.4	20.6e	59	75.7	279.2	-2	8
2010	Nov	27	17	39	21.51	-25	50	21.4	1.112270	6.0	-0.4	20.9e	62	73.8	278.6	-2	8

Mercury
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Nov	28	17	44	47.75	-25	51	27.4	1.092331	6.1	-0.4	21.1	e	64	71.8	277.9	-2	7
2010	Nov	29	17	50	3.71	-25	51	8.3	1.071763	6.2	-0.4	21.2	e	67	69.6	277.3	-2	6
2010	Nov	30	17	55	7.73	-25	49	24.4	1.050587	6.4	-0.5	21.4	e	70	67.2	276.6	-2	6
2010	Dec	1	17	59	57.95	-25	46	16.3	1.028832	6.5	-0.4	21.4	e	73	64.7	276.0	-2	5
2010	Dec	2	18	4	32.26	-25	41	45.2	1.006535	6.6	-0.4	21.5	e	76	62.0	275.3	-2	5
2010	Dec	3	18	8	48.31	-25	35	52.6	0.983750	6.8	-0.4	21.4	e	80	59.0	274.7	-3	4
2010	Dec	4	18	12	43.48	-25	28	40.4	0.960543	7.0	-0.4	21.3	e	83	55.8	274.1	-3	4
2010	Dec	5	18	16	14.89	-25	20	11.2	0.936998	7.1	-0.4	21.0	e	87	52.4	273.5	-3	3
2010	Dec	6	18	19	19.38	-25	10	27.8	0.913222	7.3	-0.3	20.7	e	91	48.8	272.9	-3	3
2010	Dec	7	18	21	53.56	-24	59	33.6	0.889344	7.5	-0.2	20.3	e	96	44.9	272.3	-3	3
2010	Dec	8	18	23	53.85	-24	47	32.2	0.865520	7.7	-0.1	19.7	e	101	40.8	271.7	-4	2
2010	Dec	9	18	25	16.59	-24	34	27.7	0.841937	7.9	0.0	19.0	e	106	36.6	271.2	-4	2
2010	Dec	10	18	25	58.16	-24	20	24.0	0.818813	8.2	0.2	18.1	e	111	32.1	270.6	-4	2
2010	Dec	11	18	25	55.22	-24	5	25.2	0.796398	8.4	0.4	17.1	e	117	27.6	270.0	-4	2
2010	Dec	12	18	25	4.93	-23	49	35.3	0.774973	8.6	0.7	15.9	e	123	23.1	269.3	-5	2
2010	Dec	13	18	23	25.34	-23	32	58.5	0.754847	8.8	1.1	14.5	e	129	18.7	268.5	-5	2
2010	Dec	14	18	20	55.78	-23	15	38.8	0.736348	9.1	1.5	12.9	e	135	14.4	267.5	-5	3
2010	Dec	15	18	17	37.23	-22	57	41.5	0.719812	9.3	2.0	11.2	e	142	10.5	266.2	-5	3
2010	Dec	16	18	13	32.76	-22	39	13.0	0.705572	9.5	2.7	9.2	e	149	7.0	264.1	-6	4
2010	Dec	17	18	8	47.69	-22	20	22.5	0.693930	9.6	3.5	7.2	e	156	4.2	260.5	-6	4
2010	Dec	18	18	3	29.68	-22	1	22.9	0.685148	9.7	4.3	5.1	e	164	2.0	253.5	-6	5
2010	Dec	19	17	57	48.44	-21	42	31.1	0.679421	9.8	5.2	3.1	e	170	0.7	235.9	-6	6
2010	Dec	20	17	51	55.15	-21	24	8.4	0.676861	9.9	5.7	2.0	e	174	0.3	184.7	-6	6
2010	Dec	21	17	46	1.68	-21	6	39.4	0.677493	9.9	5.2	3.2	w	170	0.8	136.7	-7	7
2010	Dec	22	17	40	19.68	-20	50	30.3	0.681247	9.8	4.3	5.3	w	163	2.1	120.5	-7	8
2010	Dec	23	17	34	59.70	-20	36	6.1	0.687971	9.7	3.5	7.4	w	156	4.2	113.8	-7	8
2010	Dec	24	17	30	10.53	-20	23	48.7	0.697440	9.6	2.7	9.5	w	149	7.0	110.4	-7	9
2010	Dec	25	17	25	58.86	-20	13	54.6	0.709379	9.4	2.1	11.4	w	143	10.3	108.2	-7	9

Mercury
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Dec	26	17	22	29.13	-20	6	33.6	0.723481	9.2	1.6	13.3	w	136	14.0	106.8	-7	10
2010	Dec	27	17	19	43.71	-20	1	49.0	0.739426	9.0	1.2	14.9	w	130	18.0	105.7	-7	10
2010	Dec	28	17	17	43.24	-19	59	38.0	0.756896	8.8	0.8	16.4	w	124	22.0	104.8	-7	10
2010	Dec	29	17	16	26.94	-19	59	52.7	0.775593	8.6	0.6	17.6	w	118	26.2	104.0	-7	10
2010	Dec	30	17	15	53.04	-20	2	21.2	0.795236	8.4	0.4	18.8	w	113	30.3	103.3	-7	10
2010	Dec	31	17	15	59.13	-20	6	49.4	0.815577	8.2	0.2	19.7	w	108	34.3	102.6	-7	10

Venus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Jan	1	18	34	17.80	-23	38	31.2	1.708103	9.8	-4.0	2.6	w	4	99.9	77.1	1	358
2010	Jan	2	18	39	47.34	-23	35	57.3	1.708580	9.8	-4.0	2.4	w	3	99.9	74.7	1	357
2010	Jan	3	18	45	16.63	-23	32	39.5	1.709020	9.8	-4.0	2.2	w	3	99.9	71.9	1	357
2010	Jan	4	18	50	45.59	-23	28	37.9	1.709422	9.8	-4.0	2.0	w	3	99.9	68.7	1	356
2010	Jan	5	18	56	14.18	-23	23	52.5	1.709785	9.8	-4.0	1.7	w	2	100.0	64.8	1	356
2010	Jan	6	19	1	42.33	-23	18	23.7	1.710110	9.8	-4.0	1.5	w	2	100.0	60.0	1	355
2010	Jan	7	19	7	9.98	-23	12	11.6	1.710396	9.8	-4.0	1.3	w	2	100.0	53.9	1	355
2010	Jan	8	19	12	37.09	-23	5	16.5	1.710643	9.8	-4.0	1.2	w	2	100.0	46.0	1	354
2010	Jan	9	19	18	3.60	-22	57	38.6	1.710851	9.8	-4.0	1.0	w	1	100.0	35.6	1	354
2010	Jan	10	19	23	29.45	-22	49	18.4	1.711019	9.8	-4.0	0.9	w	1	100.0	22.1	1	353
2010	Jan	11	19	28	54.59	-22	40	16.1	1.711147	9.8	-4.0	0.8	w	1	100.0	5.9	1	353
2010	Jan	12	19	34	18.97	-22	30	32.2	1.711235	9.8	-4.0	0.8	e	1	100.0	348.5	1	352
2010	Jan	13	19	39	42.53	-22	20	7.0	1.711283	9.8	-4.0	0.9	e	1	100.0	332.8	1	352
2010	Jan	14	19	45	5.22	-22	9	1.1	1.711291	9.8	-4.0	1.0	e	1	100.0	320.1	1	351
2010	Jan	15	19	50	27.01	-21	57	14.9	1.711258	9.8	-4.0	1.2	e	2	100.0	310.3	1	351
2010	Jan	16	19	55	47.84	-21	44	48.9	1.711186	9.8	-4.0	1.4	e	2	100.0	302.9	1	350
2010	Jan	17	20	1	7.68	-21	31	43.6	1.711072	9.8	-4.0	1.6	e	2	100.0	297.1	1	350
2010	Jan	18	20	6	26.48	-21	17	59.6	1.710919	9.8	-4.0	1.8	e	2	100.0	292.6	1	349
2010	Jan	19	20	11	44.21	-21	3	37.3	1.710725	9.8	-4.0	2.0	e	3	99.9	288.9	1	349
2010	Jan	20	20	17	0.84	-20	48	37.5	1.710491	9.8	-4.0	2.2	e	3	99.9	285.8	1	348
2010	Jan	21	20	22	16.35	-20	33	0.7	1.710217	9.8	-4.0	2.4	e	3	99.9	283.2	1	348
2010	Jan	22	20	27	30.69	-20	16	47.5	1.709903	9.8	-4.0	2.7	e	4	99.9	281.0	1	347
2010	Jan	23	20	32	43.86	-19	59	58.5	1.709549	9.8	-4.0	2.9	e	4	99.9	279.0	1	347
2010	Jan	24	20	37	55.84	-19	42	34.5	1.709156	9.8	-4.0	3.1	e	4	99.9	277.3	1	347
2010	Jan	25	20	43	6.60	-19	24	36.1	1.708723	9.8	-3.9	3.4	e	5	99.8	275.7	1	346
2010	Jan	26	20	48	16.13	-19	6	3.9	1.708251	9.8	-3.9	3.6	e	5	99.8	274.3	1	346
2010	Jan	27	20	53	24.42	-18	46	58.7	1.707740	9.8	-3.9	3.8	e	5	99.8	273.0	1	345
2010	Jan	28	20	58	31.46	-18	27	21.2	1.707190	9.9	-3.9	4.1	e	5	99.8	271.8	1	345
2010	Jan	29	21	3	37.24	-18	7	12.1	1.706602	9.9	-3.9	4.3	e	6	99.7	270.7	1	345

2010 Jan 30 21 8 41.75 -17 46 32.1   1.705975   9.9 -3.9   4.5e   6 99.7 269.6   1 344
Venus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Jan	31	21	13	45.01	-17	25	21.9	1.705310	9.9	-3.9	4.8e	6	99.7	268.6	1	344
2010	Feb	1	21	18	47.00	-17	3	42.2	1.704607	9.9	-3.9	5.0e	7	99.7	267.7	1	344
2010	Feb	2	21	23	47.74	-16	41	33.8	1.703864	9.9	-3.9	5.2e	7	99.6	266.9	1	343
2010	Feb	3	21	28	47.24	-16	18	57.3	1.703083	9.9	-3.9	5.5e	7	99.6	266.0	1	343
2010	Feb	4	21	33	45.51	-15	55	53.5	1.702263	9.9	-3.9	5.7e	8	99.5	265.3	1	343
2010	Feb	5	21	38	42.56	-15	32	23.2	1.701402	9.9	-3.9	5.9e	8	99.5	264.5	1	342
2010	Feb	6	21	43	38.40	-15	8	27.2	1.700502	9.9	-3.9	6.2e	8	99.5	263.8	1	342
2010	Feb	7	21	48	33.06	-14	44	6.1	1.699561	9.9	-3.9	6.4e	9	99.4	263.1	1	342
2010	Feb	8	21	53	26.53	-14	19	20.8	1.698579	9.9	-3.9	6.7e	9	99.4	262.5	1	341
2010	Feb	9	21	58	18.84	-13	54	12.1	1.697556	9.9	-3.9	6.9e	9	99.3	261.8	1	341
2010	Feb	10	22	3	10.01	-13	28	40.8	1.696491	9.9	-3.9	7.1e	10	99.3	261.2	1	341
2010	Feb	11	22	8	0.05	-13	2	47.6	1.695384	9.9	-3.9	7.4e	10	99.2	260.7	1	341
2010	Feb	12	22	12	48.99	-12	36	33.4	1.694235	9.9	-3.9	7.6e	10	99.2	260.1	1	340
2010	Feb	13	22	17	36.84	-12	9	58.8	1.693044	9.9	-3.9	7.8e	11	99.1	259.6	1	340
2010	Feb	14	22	22	23.64	-11	43	4.8	1.691809	9.9	-3.9	8.1e	11	99.1	259.1	1	340
2010	Feb	15	22	27	9.40	-11	15	52.1	1.690532	9.9	-3.9	8.3e	11	99.0	258.6	1	340
2010	Feb	16	22	31	54.17	-10	48	21.5	1.689212	10.0	-3.9	8.6e	12	99.0	258.1	1	339
2010	Feb	17	22	36	37.95	-10	20	33.8	1.687848	10.0	-3.9	8.8e	12	98.9	257.7	1	339
2010	Feb	18	22	41	20.79	- 9	52	29.7	1.686441	10.0	-3.9	9.0e	12	98.8	257.2	1	339
2010	Feb	19	22	46	2.72	- 9	24	10.0	1.684990	10.0	-3.9	9.3e	13	98.8	256.8	1	339
2010	Feb	20	22	50	43.77	- 8	55	35.5	1.683496	10.0	-3.9	9.5e	13	98.7	256.4	1	339
2010	Feb	21	22	55	23.97	- 8	26	47.0	1.681959	10.0	-3.9	9.8e	13	98.7	256.0	1	338
2010	Feb	22	23	0	3.37	- 7	57	45.3	1.680377	10.0	-3.9	10.0e	14	98.6	255.6	1	338
2010	Feb	23	23	4	41.98	- 7	28	31.1	1.678753	10.0	-3.9	10.2e	14	98.5	255.3	1	338
2010	Feb	24	23	9	19.85	- 6	59	5.1	1.677085	10.0	-3.9	10.5e	14	98.4	254.9	1	338
2010	Feb	25	23	13	57.02	- 6	29	28.3	1.675373	10.0	-3.9	10.7e	15	98.4	254.6	1	338
2010	Feb	26	23	18	33.52	- 5	59	41.2	1.673619	10.1	-3.9	10.9e	15	98.3	254.3	0	338
2010	Feb	27	23	23	9.39	- 5	29	44.8	1.671822	10.1	-3.9	11.2e	15	98.2	254.0	0	338
2010	Feb	28	23	27	44.66	- 4	59	39.6	1.669982	10.1	-3.9	11.4e	16	98.1	253.7	0	338

2010 Mar 1 23 32 19.39 - 4 29 26.5   1.668099   10.1 -3.9 11.7e 16 98.1 253.4   0 338
Venus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Mar	2	23	36	53.62	- 3	59	6.1	1.666173	10.1	-3.9	11.9e	16	98.0	253.2	0	337
2010	Mar	3	23	41	27.39	- 3	28	39.2	1.664203	10.1	-3.9	12.1e	17	97.9	252.9	0	337
2010	Mar	4	23	46	0.75	- 2	58	6.4	1.662190	10.1	-3.9	12.4e	17	97.8	252.7	0	337
2010	Mar	5	23	50	33.75	- 2	27	28.6	1.660134	10.1	-3.9	12.6e	17	97.7	252.5	0	337
2010	Mar	6	23	55	6.43	- 1	56	46.4	1.658032	10.1	-3.9	12.9e	18	97.6	252.3	0	337
2010	Mar	7	23	59	38.82	- 1	26	0.6	1.655886	10.2	-3.9	13.1e	18	97.5	252.1	0	337
2010	Mar	8	0	4	10.98	- 0	55	11.9	1.653695	10.2	-3.9	13.4e	18	97.4	251.9	0	337
2010	Mar	9	0	8	42.95	- 0	24	21.1	1.651457	10.2	-3.9	13.6e	19	97.3	251.7	0	337
2010	Mar	10	0	13	14.76	0	6	31.1	1.649174	10.2	-3.9	13.8e	19	97.2	251.5	0	337
2010	Mar	11	0	17	46.45	0	37	24.0	1.646844	10.2	-3.9	14.1e	19	97.1	251.4	0	337
2010	Mar	12	0	22	18.08	1	8	16.7	1.644466	10.2	-3.9	14.3e	20	97.0	251.3	0	337
2010	Mar	13	0	26	49.68	1	39	8.5	1.642042	10.2	-3.9	14.6e	20	96.9	251.1	0	337
2010	Mar	14	0	31	21.29	2	9	58.8	1.639569	10.3	-3.9	14.8e	21	96.8	251.0	0	337
2010	Mar	15	0	35	52.96	2	40	46.7	1.637049	10.3	-3.9	15.0e	21	96.7	250.9	0	337
2010	Mar	16	0	40	24.72	3	11	31.5	1.634479	10.3	-3.9	15.3e	21	96.6	250.8	0	337
2010	Mar	17	0	44	56.62	3	42	12.5	1.631861	10.3	-3.9	15.5e	22	96.5	250.8	0	337
2010	Mar	18	0	49	28.70	4	12	48.9	1.629194	10.3	-3.9	15.8e	22	96.4	250.7	0	338
2010	Mar	19	0	54	1.00	4	43	20.0	1.626478	10.3	-3.9	16.0e	22	96.3	250.6	0	338
2010	Mar	20	0	58	33.56	5	13	45.0	1.623712	10.4	-3.9	16.3e	23	96.1	250.6	0	338
2010	Mar	21	1	3	6.42	5	44	3.2	1.620897	10.4	-3.9	16.5e	23	96.0	250.6	0	338
2010	Mar	22	1	7	39.62	6	14	13.9	1.618032	10.4	-3.9	16.7e	23	95.9	250.6	0	338
2010	Mar	23	1	12	13.19	6	44	16.3	1.615118	10.4	-3.9	17.0e	24	95.8	250.6	0	338
2010	Mar	24	1	16	47.18	7	14	9.7	1.612154	10.4	-3.9	17.2e	24	95.6	250.6	0	338
2010	Mar	25	1	21	21.61	7	43	53.3	1.609140	10.5	-3.9	17.5e	24	95.5	250.6	0	338
2010	Mar	26	1	25	56.52	8	13	26.3	1.606077	10.5	-3.9	17.7e	25	95.4	250.6	0	338
2010	Mar	27	1	30	31.95	8	42	48.1	1.602966	10.5	-3.9	18.0e	25	95.2	250.6	-1	339
2010	Mar	28	1	35	7.93	9	11	57.8	1.599805	10.5	-3.9	18.2e	26	95.1	250.7	-1	339
2010	Mar	29	1	39	44.52	9	40	54.8	1.596595	10.5	-3.9	18.4e	26	95.0	250.7	-1	339
2010	Mar	30	1	44	21.73	10	9	38.3	1.593337	10.6	-3.9	18.7e	26	94.8	250.8	-1	339

2010 Mar 31 1 48 59.63 10 38 7.7 1.590030 10.6 -3.9 18.9e 27 94.7 250.9 -1 339

Venus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Apr	1	1	53	38.23	11	6	22.2	1.586674	10.6	-3.9	19.2e	27	94.5	251.0	-1	340
2010	Apr	2	1	58	17.58	11	34	21.0	1.583269	10.6	-3.9	19.4e	27	94.4	251.1	-1	340
2010	Apr	3	2	2	57.71	12	2	3.5	1.579814	10.6	-3.9	19.7e	28	94.2	251.2	-1	340
2010	Apr	4	2	7	38.65	12	29	28.9	1.576310	10.7	-3.9	19.9e	28	94.1	251.3	-1	340
2010	Apr	5	2	12	20.43	12	56	36.5	1.572757	10.7	-3.9	20.2e	29	93.9	251.5	-1	340
2010	Apr	6	2	17	3.08	13	23	25.4	1.569153	10.7	-3.9	20.4e	29	93.8	251.6	-1	341
2010	Apr	7	2	21	46.62	13	49	55.0	1.565498	10.7	-3.9	20.6e	29	93.6	251.8	-1	341
2010	Apr	8	2	26	31.08	14	16	4.5	1.561793	10.8	-3.9	20.9e	30	93.4	252.0	-1	341
2010	Apr	9	2	31	16.48	14	41	53.1	1.558036	10.8	-3.9	21.1e	30	93.3	252.1	-1	341
2010	Apr	10	2	36	2.85	15	7	20.1	1.554228	10.8	-3.9	21.4e	30	93.1	252.3	-1	342
2010	Apr	11	2	40	50.20	15	32	24.7	1.550368	10.8	-3.9	21.6e	31	92.9	252.5	-1	342
2010	Apr	12	2	45	38.56	15	57	6.2	1.546456	10.9	-3.9	21.9e	31	92.8	252.8	-1	342
2010	Apr	13	2	50	27.93	16	21	23.7	1.542492	10.9	-3.9	22.1e	32	92.6	253.0	-1	343
2010	Apr	14	2	55	18.34	16	45	16.7	1.538475	10.9	-3.9	22.4e	32	92.4	253.2	-1	343
2010	Apr	15	3	0	9.79	17	8	44.3	1.534405	11.0	-3.9	22.6e	32	92.2	253.5	-1	343
2010	Apr	16	3	5	2.30	17	31	45.7	1.530283	11.0	-3.9	22.9e	33	92.0	253.7	-1	344
2010	Apr	17	3	9	55.87	17	54	20.4	1.526107	11.0	-3.9	23.1e	33	91.9	254.0	-1	344
2010	Apr	18	3	14	50.50	18	16	27.5	1.521878	11.1	-3.9	23.3e	34	91.7	254.3	-1	344
2010	Apr	19	3	19	46.20	18	38	6.3	1.517596	11.1	-3.9	23.6e	34	91.5	254.6	-1	345
2010	Apr	20	3	24	42.96	18	59	16.1	1.513261	11.1	-3.9	23.8e	34	91.3	254.8	-1	345
2010	Apr	21	3	29	40.78	19	19	56.2	1.508873	11.1	-3.9	24.1e	35	91.1	255.2	-1	345
2010	Apr	22	3	34	39.65	19	40	5.9	1.504433	11.2	-3.9	24.3e	35	90.9	255.5	-2	346
2010	Apr	23	3	39	39.56	19	59	44.5	1.499940	11.2	-3.9	24.6e	36	90.7	255.8	-2	346
2010	Apr	24	3	44	40.50	20	18	51.2	1.495395	11.2	-3.9	24.8e	36	90.5	256.1	-2	347
2010	Apr	25	3	49	42.46	20	37	25.6	1.490798	11.3	-3.9	25.1e	36	90.3	256.5	-2	347
2010	Apr	26	3	54	45.43	20	55	26.8	1.486151	11.3	-3.9	25.3e	37	90.1	256.8	-2	347
2010	Apr	27	3	59	49.41	21	12	54.3	1.481452	11.4	-3.9	25.5e	37	89.9	257.2	-2	348
2010	Apr	28	4	4	54.36	21	29	47.5	1.476703	11.4	-3.9	25.8e	38	89.7	257.6	-2	348
2010	Apr	29	4	10	0.29	21	46	5.7	1.471904	11.4	-3.9	26.0e	38	89.4	257.9	-2	349

Venus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Apr	30	4	15	7.16	22	1	48.5	1.467055	11.5	-3.9	26.3e	38	89.2	258.3	-2	349
2010	May	1	4	20	14.94	22	16	55.1	1.462155	11.5	-3.9	26.5e	39	89.0	258.7	-2	350
2010	May	2	4	25	23.62	22	31	25.1	1.457206	11.5	-3.9	26.8e	39	88.8	259.1	-2	350
2010	May	3	4	30	33.17	22	45	18.0	1.452208	11.6	-3.9	27.0e	40	88.6	259.5	-2	351
2010	May	4	4	35	43.54	22	58	33.1	1.447159	11.6	-3.9	27.3e	40	88.3	260.0	-2	351
2010	May	5	4	40	54.70	23	11	10.0	1.442061	11.7	-3.9	27.5e	40	88.1	260.4	-2	351
2010	May	6	4	46	6.62	23	23	8.1	1.436913	11.7	-3.9	27.7e	41	87.9	260.8	-2	352
2010	May	7	4	51	19.25	23	34	27.1	1.431715	11.7	-3.9	28.0e	41	87.6	261.2	-2	352
2010	May	8	4	56	32.56	23	45	6.4	1.426468	11.8	-3.9	28.2e	42	87.4	261.7	-2	353
2010	May	9	5	1	46.49	23	55	5.6	1.421171	11.8	-3.9	28.5e	42	87.1	262.1	-2	353
2010	May	10	5	7	1.00	24	4	24.4	1.415823	11.9	-3.9	28.7e	42	86.9	262.6	-2	354
2010	May	11	5	12	16.04	24	13	2.4	1.410426	11.9	-3.9	28.9e	43	86.7	263.1	-2	354
2010	May	12	5	17	31.56	24	20	59.2	1.404979	12.0	-3.9	29.2e	43	86.4	263.5	-2	355
2010	May	13	5	22	47.49	24	28	14.5	1.399482	12.0	-3.9	29.4e	44	86.2	264.0	-2	355
2010	May	14	5	28	3.80	24	34	48.1	1.393935	12.1	-3.9	29.7e	44	85.9	264.5	-2	356
2010	May	15	5	33	20.41	24	40	39.7	1.388339	12.1	-3.9	29.9e	45	85.6	265.0	-2	356
2010	May	16	5	38	37.26	24	45	49.1	1.382692	12.2	-3.9	30.1e	45	85.4	265.4	-2	357
2010	May	17	5	43	54.28	24	50	16.2	1.376997	12.2	-3.9	30.4e	45	85.1	265.9	-2	357
2010	May	18	5	49	11.41	24	54	0.7	1.371251	12.3	-3.9	30.6e	46	84.9	266.4	-2	358
2010	May	19	5	54	28.59	24	57	2.6	1.365457	12.3	-3.9	30.9e	46	84.6	266.9	-2	358
2010	May	20	5	59	45.73	24	59	21.7	1.359615	12.4	-3.9	31.1e	47	84.3	267.4	-2	359
2010	May	21	6	5	2.77	25	0	58.0	1.353724	12.4	-3.9	31.3e	47	84.0	267.9	-2	359
2010	May	22	6	10	19.65	25	1	51.5	1.347787	12.5	-3.9	31.6e	48	83.8	268.4	-2	360
2010	May	23	6	15	36.30	25	2	2.1	1.341802	12.5	-3.9	31.8e	48	83.5	268.9	-2	0
2010	May	24	6	20	52.66	25	1	30.0	1.335772	12.6	-3.9	32.0e	48	83.2	269.4	-2	1
2010	May	25	6	26	8.66	25	0	15.1	1.329696	12.6	-3.9	32.3e	49	82.9	269.9	-2	1
2010	May	26	6	31	24.24	24	58	17.7	1.323575	12.7	-3.9	32.5e	49	82.7	270.4	-2	2
2010	May	27	6	36	39.34	24	55	37.7	1.317410	12.8	-3.9	32.7e	50	82.4	270.9	-2	2

Venus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb		De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o		o	o
2010	May	28	6	41	53.90	24	52	15.5	1.311202	12.8	-3.9	33.0	e	50	82.1	271.4		-2	3
2010	May	29	6	47	7.85	24	48	11.1	1.304951	12.9	-3.9	33.2	e	51	81.8	271.9		-2	3
2010	May	30	6	52	21.14	24	43	24.9	1.298658	13.0	-3.9	33.4	e	51	81.5	272.4		-2	4
2010	May	31	6	57	33.70	24	37	57.1	1.292323	13.0	-3.9	33.7	e	51	81.2	272.9		-2	4
2010	Jun	1	7	2	45.48	24	31	47.9	1.285946	13.1	-3.9	33.9	e	52	80.9	273.4		-2	5
2010	Jun	2	7	7	56.42	24	24	57.6	1.279528	13.1	-3.9	34.1	e	52	80.6	273.9		-2	5
2010	Jun	3	7	13	6.47	24	17	26.5	1.273070	13.2	-3.9	34.3	e	53	80.3	274.4		-2	6
2010	Jun	4	7	18	15.57	24	9	15.1	1.266570	13.3	-3.9	34.6	e	53	80.0	274.9		-2	6
2010	Jun	5	7	23	23.68	24	0	23.6	1.260031	13.3	-3.9	34.8	e	54	79.7	275.4		-2	7
2010	Jun	6	7	28	30.74	23	50	52.5	1.253452	13.4	-4.0	35.0	e	54	79.4	275.8		-2	7
2010	Jun	7	7	33	36.71	23	40	42.2	1.246833	13.5	-4.0	35.2	e	54	79.0	276.3		-2	8
2010	Jun	8	7	38	41.55	23	29	53.2	1.240175	13.6	-4.0	35.5	e	55	78.7	276.8		-2	8
2010	Jun	9	7	43	45.21	23	18	25.9	1.233478	13.6	-4.0	35.7	e	55	78.4	277.3		-2	9
2010	Jun	10	7	48	47.64	23	6	20.8	1.226742	13.7	-4.0	35.9	e	56	78.1	277.7		-2	9
2010	Jun	11	7	53	48.82	22	53	38.5	1.219968	13.8	-4.0	36.1	e	56	77.8	278.2		-2	10
2010	Jun	12	7	58	48.70	22	40	19.5	1.213155	13.9	-4.0	36.3	e	57	77.4	278.7		-2	10
2010	Jun	13	8	3	47.23	22	26	24.5	1.206304	13.9	-4.0	36.5	e	57	77.1	279.1		-2	11
2010	Jun	14	8	8	44.39	22	11	53.9	1.199415	14.0	-4.0	36.8	e	58	76.8	279.6		-2	11
2010	Jun	15	8	13	40.14	21	56	48.5	1.192489	14.1	-4.0	37.0	e	58	76.5	280.0		-2	11
2010	Jun	16	8	18	34.44	21	41	8.8	1.185525	14.2	-4.0	37.2	e	59	76.1	280.4		-2	12
2010	Jun	17	8	23	27.26	21	24	55.5	1.178525	14.3	-4.0	37.4	e	59	75.8	280.9		-2	12
2010	Jun	18	8	28	18.57	21	8	9.2	1.171489	14.4	-4.0	37.6	e	59	75.4	281.3		-2	13
2010	Jun	19	8	33	8.35	20	50	50.5	1.164418	14.4	-4.0	37.8	e	60	75.1	281.7		-2	13
2010	Jun	20	8	37	56.58	20	33	0.3	1.157313	14.5	-4.0	38.0	e	60	74.8	282.1		-2	13
2010	Jun	21	8	42	43.25	20	14	39.0	1.150175	14.6	-4.0	38.2	e	61	74.4	282.5		-2	14
2010	Jun	22	8	47	28.33	19	55	47.4	1.143003	14.7	-4.0	38.4	e	61	74.1	282.9		-2	14
2010	Jun	23	8	52	11.82	19	36	26.3	1.135800	14.8	-4.0	38.6	e	62	73.7	283.3		-2	15
2010	Jun	24	8	56	53.70	19	16	36.2	1.128566	14.9	-4.0	38.8	e	62	73.4	283.7		-2	15

Venus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Jun	25	9	1	33.98	18	56	17.9	1.121302	15.0	-4.0	39.0e	63	73.0	284.1	-2	15
2010	Jun	26	9	6	12.63	18	35	32.1	1.114009	15.1	-4.0	39.2e	63	72.7	284.5	-2	16
2010	Jun	27	9	10	49.66	18	14	19.5	1.106688	15.2	-4.0	39.4e	64	72.3	284.8	-2	16
2010	Jun	28	9	15	25.07	17	52	40.7	1.099338	15.3	-4.0	39.6e	64	71.9	285.2	-2	16
2010	Jun	29	9	19	58.86	17	30	36.5	1.091962	15.4	-4.1	39.8e	64	71.6	285.5	-1	17
2010	Jun	30	9	24	31.02	17	8	7.6	1.084559	15.5	-4.1	40.0e	65	71.2	285.9	-1	17
2010	Jul	1	9	29	1.58	16	45	14.7	1.077131	15.6	-4.1	40.2e	65	70.8	286.2	-1	17
2010	Jul	2	9	33	30.52	16	21	58.3	1.069677	15.7	-4.1	40.4e	66	70.5	286.5	-1	17
2010	Jul	3	9	37	57.87	15	58	19.4	1.062199	15.8	-4.1	40.6e	66	70.1	286.9	-1	18
2010	Jul	4	9	42	23.64	15	34	18.4	1.054696	15.9	-4.1	40.8e	67	69.7	287.2	-1	18
2010	Jul	5	9	46	47.82	15	9	56.2	1.047170	16.1	-4.1	40.9e	67	69.3	287.5	-1	18
2010	Jul	6	9	51	10.45	14	45	13.4	1.039620	16.2	-4.1	41.1e	68	68.9	287.8	-1	19
2010	Jul	7	9	55	31.52	14	20	10.7	1.032048	16.3	-4.1	41.3e	68	68.6	288.1	-1	19
2010	Jul	8	9	59	51.06	13	54	48.8	1.024453	16.4	-4.1	41.5e	69	68.2	288.4	-1	19
2010	Jul	9	10	4	9.08	13	29	8.5	1.016836	16.5	-4.1	41.6e	69	67.8	288.7	-1	19
2010	Jul	10	10	8	25.59	13	3	10.4	1.009197	16.7	-4.1	41.8e	70	67.4	288.9	-1	20
2010	Jul	11	10	12	40.60	12	36	55.2	1.001537	16.8	-4.1	42.0e	70	67.0	289.2	-1	20
2010	Jul	12	10	16	54.13	12	10	23.8	0.993856	16.9	-4.1	42.2e	71	66.6	289.5	-1	20
2010	Jul	13	10	21	6.18	11	43	36.7	0.986153	17.1	-4.1	42.3e	71	66.2	289.7	-1	20
2010	Jul	14	10	25	16.77	11	16	34.8	0.978430	17.2	-4.1	42.5e	72	65.8	289.9	-1	20
2010	Jul	15	10	29	25.90	10	49	18.8	0.970688	17.3	-4.1	42.6e	72	65.4	290.2	-1	21
2010	Jul	16	10	33	33.59	10	21	49.3	0.962925	17.5	-4.2	42.8e	73	65.0	290.4	0	21
2010	Jul	17	10	37	39.86	9	54	7.1	0.955145	17.6	-4.2	43.0e	73	64.6	290.6	0	21
2010	Jul	18	10	41	44.71	9	26	12.9	0.947346	17.8	-4.2	43.1e	74	64.2	290.8	0	21
2010	Jul	19	10	45	48.17	8	58	7.3	0.939530	17.9	-4.2	43.3e	74	63.8	291.1	0	21
2010	Jul	20	10	49	50.24	8	29	51.1	0.931698	18.1	-4.2	43.4e	75	63.3	291.3	0	21
2010	Jul	21	10	53	50.94	8	1	24.9	0.923851	18.2	-4.2	43.5e	75	62.9	291.5	0	21
2010	Jul	22	10	57	50.28	7	32	49.5	0.915989	18.4	-4.2	43.7e	76	62.5	291.6	0	22
2010	Jul	23	11	1	48.29	7	4	5.4	0.908115	18.5	-4.2	43.8e	76	62.1	291.8	0	22

Venus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Jul	24	11	5	44.97	6	35	13.4	0.900227	18.7	-4.2	44.0e	77	61.6	292.0	0	22
2010	Jul	25	11	9	40.34	6	6	14.1	0.892328	18.8	-4.2	44.1e	77	61.2	292.2	0	22
2010	Jul	26	11	13	34.41	5	37	8.1	0.884418	19.0	-4.2	44.2e	78	60.8	292.3	0	22
2010	Jul	27	11	17	27.21	5	7	56.1	0.876499	19.2	-4.2	44.3e	78	60.3	292.5	0	22
2010	Jul	28	11	21	18.74	4	38	38.7	0.868570	19.4	-4.2	44.5e	79	59.9	292.6	0	22
2010	Jul	29	11	25	9.02	4	9	16.4	0.860633	19.5	-4.3	44.6e	79	59.5	292.8	1	22
2010	Jul	30	11	28	58.07	3	39	50.0	0.852688	19.7	-4.3	44.7e	80	59.0	292.9	1	22
2010	Jul	31	11	32	45.91	3	10	20.1	0.844736	19.9	-4.3	44.8e	80	58.6	293.1	1	23
2010	Aug	1	11	36	32.55	2	40	47.1	0.836778	20.1	-4.3	44.9e	81	58.1	293.2	1	23
2010	Aug	2	11	40	18.00	2	11	11.8	0.828815	20.3	-4.3	45.0e	81	57.6	293.3	1	23
2010	Aug	3	11	44	2.27	1	41	34.7	0.820846	20.5	-4.3	45.1e	82	57.2	293.4	1	23
2010	Aug	4	11	47	45.39	1	11	56.5	0.812873	20.7	-4.3	45.2e	82	56.7	293.5	1	23
2010	Aug	5	11	51	27.35	0	42	17.7	0.804896	20.9	-4.3	45.3e	83	56.3	293.6	1	23
2010	Aug	6	11	55	8.16	0	12	39.0	0.796916	21.1	-4.3	45.4e	83	55.8	293.7	1	23
2010	Aug	7	11	58	47.83	- 0	16	59.1	0.788932	21.3	-4.3	45.4e	84	55.3	293.8	1	23
2010	Aug	8	12	2	26.37	- 0	46	35.9	0.780946	21.5	-4.3	45.5e	84	54.8	293.9	2	23
2010	Aug	9	12	6	3.77	- 1	16	10.8	0.772958	21.8	-4.4	45.6e	85	54.3	294.0	2	23
2010	Aug	10	12	9	40.02	- 1	45	43.1	0.764967	22.0	-4.4	45.6e	86	53.9	294.1	2	23
2010	Aug	11	12	13	15.12	- 2	15	12.2	0.756976	22.2	-4.4	45.7e	86	53.4	294.1	2	23
2010	Aug	12	12	16	49.07	- 2	44	37.5	0.748983	22.5	-4.4	45.7e	87	52.9	294.2	2	23
2010	Aug	13	12	20	21.84	- 3	13	58.2	0.740990	22.7	-4.4	45.8e	87	52.4	294.3	2	23
2010	Aug	14	12	23	53.43	- 3	43	13.8	0.732997	22.9	-4.4	45.8e	88	51.9	294.3	2	23
2010	Aug	15	12	27	23.81	- 4	12	23.5	0.725005	23.2	-4.4	45.9e	88	51.4	294.4	2	23
2010	Aug	16	12	30	52.97	- 4	41	26.8	0.717015	23.5	-4.4	45.9e	89	50.8	294.4	2	23
2010	Aug	17	12	34	20.89	- 5	10	23.1	0.709029	23.7	-4.4	45.9e	90	50.3	294.5	3	23
2010	Aug	18	12	37	47.54	- 5	39	11.6	0.701047	24.0	-4.4	45.9e	90	49.8	294.5	3	23
2010	Aug	19	12	41	12.89	- 6	7	51.7	0.693070	24.3	-4.5	46.0e	91	49.3	294.6	3	23
2010	Aug	20	12	44	36.92	- 6	36	22.9	0.685099	24.6	-4.5	46.0e	91	48.7	294.6	3	23

Venus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Aug	21	12	47	59.58	- 7	4	44.4	0.677136	24.8	-4.5	46.0e		92	48.2	294.6	3	23
2010	Aug	22	12	51	20.86	- 7	32	55.6	0.669182	25.1	-4.5	46.0e		93	47.7	294.7	3	22
2010	Aug	23	12	54	40.70	- 8	0	56.0	0.661238	25.4	-4.5	45.9e		93	47.1	294.7	3	22
2010	Aug	24	12	57	59.08	- 8	28	44.9	0.653305	25.7	-4.5	45.9e		94	46.6	294.7	3	22
2010	Aug	25	13	1	15.95	- 8	56	21.7	0.645385	26.1	-4.5	45.9e		95	46.0	294.7	3	22
2010	Aug	26	13	4	31.27	- 9	23	45.8	0.637478	26.4	-4.5	45.8e		95	45.4	294.8	4	22
2010	Aug	27	13	7	45.00	- 9	50	56.6	0.629586	26.7	-4.5	45.8e		96	44.8	294.8	4	22
2010	Aug	28	13	10	57.07	-10	17	53.4	0.621710	27.1	-4.5	45.7e		97	44.3	294.8	4	22
2010	Aug	29	13	14	7.44	-10	44	35.7	0.613852	27.4	-4.6	45.7e		97	43.7	294.8	4	22
2010	Aug	30	13	17	16.05	-11	11	2.7	0.606012	27.8	-4.6	45.6e		98	43.1	294.8	4	22
2010	Aug	31	13	20	22.83	-11	37	14.0	0.598192	28.1	-4.6	45.5e		99	42.5	294.8	4	22
2010	Sep	1	13	23	27.72	-12	3	8.9	0.590393	28.5	-4.6	45.4e		99	41.9	294.9	4	22
2010	Sep	2	13	26	30.64	-12	28	46.6	0.582616	28.9	-4.6	45.3e		100	41.3	294.9	4	22
2010	Sep	3	13	29	31.52	-12	54	6.7	0.574863	29.3	-4.6	45.2e		101	40.6	294.9	5	22
2010	Sep	4	13	32	30.26	-13	19	8.3	0.567134	29.7	-4.6	45.0e		102	40.0	294.9	5	21
2010	Sep	5	13	35	26.78	-13	43	50.8	0.559431	30.1	-4.6	44.9e		102	39.4	294.9	5	21
2010	Sep	6	13	38	20.97	-14	8	13.5	0.551755	30.5	-4.6	44.7e		103	38.7	294.9	5	21
2010	Sep	7	13	41	12.72	-14	32	15.6	0.544108	30.9	-4.7	44.6e		104	38.1	295.0	5	21
2010	Sep	8	13	44	1.93	-14	55	56.3	0.536490	31.4	-4.7	44.4e		105	37.4	295.0	5	21
2010	Sep	9	13	46	48.45	-15	19	15.0	0.528902	31.8	-4.7	44.2e		105	36.7	295.0	5	21
2010	Sep	10	13	49	32.17	-15	42	10.7	0.521348	32.3	-4.7	44.0e		106	36.0	295.0	5	21
2010	Sep	11	13	52	12.92	-16	4	42.6	0.513828	32.7	-4.7	43.7e		107	35.3	295.1	6	21
2010	Sep	12	13	54	50.57	-16	26	49.9	0.506343	33.2	-4.7	43.5e		108	34.6	295.1	6	21
2010	Sep	13	13	57	24.94	-16	48	31.7	0.498898	33.7	-4.7	43.3e		109	33.9	295.2	6	20
2010	Sep	14	13	59	55.86	-17	9	47.0	0.491493	34.2	-4.7	43.0e		110	33.2	295.2	6	20
2010	Sep	15	14	2	23.15	-17	30	34.9	0.484131	34.7	-4.7	42.7e		111	32.5	295.3	6	20
2010	Sep	16	14	4	46.63	-17	50	54.5	0.476815	35.3	-4.7	42.4e		111	31.7	295.3	6	20
2010	Sep	17	14	7	6.10	-18	10	44.7	0.469548	35.8	-4.7	42.1e		112	31.0	295.4	6	20

Venus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Sep	18	14	9	21.36	-18	30	4.5	0.462333	36.4	-4.7	41.7e	113	30.2	295.5	6	20
2010	Sep	19	14	11	32.21	-18	48	52.7	0.455173	37.0	-4.8	41.3e	114	29.5	295.6	6	20
2010	Sep	20	14	13	38.42	-19	7	8.4	0.448071	37.5	-4.8	41.0e	115	28.7	295.7	7	20
2010	Sep	21	14	15	39.79	-19	24	50.2	0.441031	38.1	-4.8	40.6e	116	27.9	295.8	7	20
2010	Sep	22	14	17	36.08	-19	41	57.0	0.434056	38.8	-4.8	40.1e	117	27.1	295.9	7	19
2010	Sep	23	14	19	27.07	-19	58	27.5	0.427151	39.4	-4.8	39.7e	118	26.3	296.1	7	19
2010	Sep	24	14	21	12.51	-20	14	20.4	0.420318	40.0	-4.8	39.2e	119	25.4	296.3	7	19
2010	Sep	25	14	22	52.18	-20	29	34.3	0.413562	40.7	-4.8	38.7e	121	24.6	296.4	7	19
2010	Sep	26	14	24	25.81	-20	44	7.6	0.406887	41.3	-4.8	38.2e	122	23.8	296.6	7	19
2010	Sep	27	14	25	53.18	-20	57	58.9	0.400298	42.0	-4.8	37.6e	123	22.9	296.8	7	19
2010	Sep	28	14	27	14.02	-21	11	6.5	0.393800	42.7	-4.8	37.0e	124	22.1	297.1	7	19
2010	Sep	29	14	28	28.09	-21	23	28.7	0.387396	43.4	-4.8	36.4e	125	21.2	297.3	8	19
2010	Sep	30	14	29	35.13	-21	35	3.7	0.381093	44.1	-4.8	35.7e	126	20.3	297.6	8	19
2010	Oct	1	14	30	34.91	-21	45	49.5	0.374894	44.9	-4.8	35.1e	128	19.4	297.9	8	19
2010	Oct	2	14	31	27.18	-21	55	44.3	0.368807	45.6	-4.8	34.4e	129	18.5	298.3	8	19
2010	Oct	3	14	32	11.70	-22	4	45.9	0.362835	46.4	-4.8	33.6e	130	17.6	298.7	8	19
2010	Oct	4	14	32	48.23	-22	12	52.1	0.356984	47.1	-4.8	32.9e	132	16.7	299.1	8	19
2010	Oct	5	14	33	16.58	-22	20	0.6	0.351261	47.9	-4.7	32.0e	133	15.8	299.5	8	19
2010	Oct	6	14	33	36.52	-22	26	9.0	0.345672	48.7	-4.7	31.2e	135	14.9	300.0	8	19
2010	Oct	7	14	33	47.86	-22	31	15.0	0.340223	49.4	-4.7	30.3e	136	14.0	300.5	8	19
2010	Oct	8	14	33	50.45	-22	35	15.9	0.334921	50.2	-4.7	29.4e	137	13.1	301.1	8	19
2010	Oct	9	14	33	44.14	-22	38	9.3	0.329773	51.0	-4.7	28.5e	139	12.2	301.7	8	19
2010	Oct	10	14	33	28.81	-22	39	52.6	0.324786	51.8	-4.7	27.5e	141	11.4	302.4	8	19
2010	Oct	11	14	33	4.38	-22	40	23.2	0.319968	52.6	-4.6	26.5e	142	10.5	303.2	8	19
2010	Oct	12	14	32	30.84	-22	39	38.7	0.315328	53.3	-4.6	25.4e	144	9.6	304.0	8	19
2010	Oct	13	14	31	48.19	-22	37	36.6	0.310874	54.1	-4.6	24.3e	146	8.8	304.9	9	19
2010	Oct	14	14	30	56.52	-22	34	14.7	0.306614	54.9	-4.6	23.2e	147	7.9	306.0	9	19
2010	Oct	15	14	29	55.99	-22	29	31.1	0.302557	55.6	-4.5	22.0e	149	7.1	307.1	9	19
2010	Oct	16	14	28	46.79	-22	23	24.0	0.298712	56.3	-4.5	20.8e	151	6.4	308.4	9	19

Venus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Oct	17	14	27	29.24	-22	15	52.1	0.295088	57.0	-4.5	19.6	e	153	5.6	309.8	8	19
2010	Oct	18	14	26	3.68	-22	6	54.6	0.291694	57.7	-4.4	18.3	e	154	4.9	311.4	8	19
2010	Oct	19	14	24	30.57	-21	56	30.9	0.288537	58.3	-4.4	17.0	e	156	4.2	313.3	8	19
2010	Oct	20	14	22	50.41	-21	44	41.4	0.285626	58.9	-4.3	15.7	e	158	3.6	315.4	8	19
2010	Oct	21	14	21	3.82	-21	31	26.9	0.282969	59.4	-4.3	14.4	e	160	3.0	318.0	8	19
2010	Oct	22	14	19	11.46	-21	16	48.9	0.280574	59.9	-4.2	13.1	e	162	2.5	321.0	8	19
2010	Oct	23	14	17	14.07	-21	0	49.7	0.278447	60.4	-4.2	11.8	e	164	2.0	324.7	8	20
2010	Oct	24	14	15	12.46	-20	43	32.4	0.276595	60.8	-4.2	10.5	e	166	1.6	329.3	8	20
2010	Oct	25	14	13	7.47	-20	25	1.0	0.275023	61.2	-4.2	9.2	e	167	1.2	335.1	8	20
2010	Oct	26	14	11	0.01	-20	5	20.1	0.273736	61.4	-4.3	8.1	e	169	0.9	342.6	8	20
2010	Oct	27	14	8	51.00	-19	44	35.3	0.272739	61.7	-4.3	7.1	e	170	0.7	352.3	8	20
2010	Oct	28	14	6	41.39	-19	22	52.8	0.272033	61.8	-4.3	6.4	w	171	0.6	4.6	7	20
2010	Oct	29	14	4	32.14	-19	0	19.5	0.271621	61.9	-4.3	6.0	w	172	0.5	19.3	7	20
2010	Oct	30	14	2	24.19	-18	37	2.8	0.271503	62.0	-4.3	6.0	w	172	0.5	35.0	7	20
2010	Oct	31	14	0	18.45	-18	13	10.5	0.271680	61.9	-4.3	6.4	w	171	0.6	49.6	7	20
2010	Nov	1	13	58	15.82	-17	48	51.0	0.272150	61.8	-4.3	7.2	w	170	0.7	61.8	7	20
2010	Nov	2	13	56	17.15	-17	24	12.6	0.272911	61.6	-4.3	8.2	w	169	1.0	71.4	6	20
2010	Nov	3	13	54	23.21	-16	59	23.8	0.273960	61.4	-4.2	9.3	w	167	1.2	78.7	6	21
2010	Nov	4	13	52	34.75	-16	34	33.2	0.275294	61.1	-4.2	10.5	w	165	1.6	84.4	6	21
2010	Nov	5	13	50	52.41	-16	9	48.9	0.276907	60.7	-4.2	11.8	w	164	2.0	88.9	6	21
2010	Nov	6	13	49	16.80	-15	45	19.1	0.278794	60.3	-4.2	13.2	w	162	2.5	92.4	5	21
2010	Nov	7	13	47	48.42	-15	21	11.4	0.280951	59.9	-4.3	14.5	w	160	3.0	95.3	5	21
2010	Nov	8	13	46	27.74	-14	57	32.9	0.283369	59.4	-4.4	15.9	w	158	3.6	97.7	5	21
2010	Nov	9	13	45	15.14	-14	34	30.4	0.286044	58.8	-4.4	17.2	w	156	4.3	99.7	5	21
2010	Nov	10	13	44	10.93	-14	12	10.0	0.288966	58.2	-4.5	18.5	w	154	5.0	101.3	4	21
2010	Nov	11	13	43	15.37	-13	50	37.2	0.292130	57.6	-4.5	19.8	w	152	5.7	102.8	4	21
2010	Nov	12	13	42	28.66	-13	29	57.1	0.295527	56.9	-4.5	21.0	w	151	6.5	104.0	4	21
2010	Nov	13	13	41	50.93	-13	10	13.7	0.299149	56.2	-4.6	22.3	w	149	7.3	105.1	4	21

Venus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Nov	14	13	41	22.27	-12	51	31.0	0.302989	55.5	-4.6	23.5w		147	8.1	106.0	3	21
2010	Nov	15	13	41	2.73	-12	33	51.9	0.307037	54.8	-4.6	24.6w		145	9.0	106.8	3	21
2010	Nov	16	13	40	52.29	-12	17	18.8	0.311286	54.0	-4.7	25.7w		143	9.8	107.6	3	21
2010	Nov	17	13	40	50.92	-12	1	53.8	0.315726	53.3	-4.7	26.8w		142	10.7	108.2	3	21
2010	Nov	18	13	40	58.52	-11	47	38.1	0.320351	52.5	-4.7	27.9w		140	11.6	108.8	2	21
2010	Nov	19	13	41	15.00	-11	34	32.7	0.325152	51.7	-4.8	28.9w		139	12.5	109.3	2	21
2010	Nov	20	13	41	40.22	-11	22	38.0	0.330120	51.0	-4.8	29.9w		137	13.5	109.7	2	21
2010	Nov	21	13	42	14.02	-11	11	54.1	0.335248	50.2	-4.8	30.8w		135	14.4	110.1	2	21
2010	Nov	22	13	42	56.22	-11	2	20.7	0.340527	49.4	-4.8	31.7w		134	15.3	110.4	2	21
2010	Nov	23	13	43	46.63	-10	53	57.0	0.345952	48.6	-4.8	32.6w		132	16.3	110.7	1	21
2010	Nov	24	13	44	45.05	-10	46	42.3	0.351513	47.9	-4.8	33.4w		131	17.2	111.0	1	21
2010	Nov	25	13	45	51.26	-10	40	35.1	0.357204	47.1	-4.8	34.2w		130	18.1	111.2	1	21
2010	Nov	26	13	47	5.05	-10	35	34.2	0.363017	46.3	-4.9	35.0w		128	19.1	111.4	1	21
2010	Nov	27	13	48	26.18	-10	31	37.9	0.368947	45.6	-4.9	35.7w		127	20.0	111.6	1	21
2010	Nov	28	13	49	54.42	-10	28	44.4	0.374985	44.9	-4.9	36.4w		126	20.9	111.7	0	21
2010	Nov	29	13	51	29.53	-10	26	51.9	0.381128	44.1	-4.9	37.1w		124	21.8	111.8	0	21
2010	Nov	30	13	53	11.30	-10	25	58.3	0.387367	43.4	-4.9	37.7w		123	22.7	111.9	0	20
2010	Dec	1	13	54	59.48	-10	26	1.7	0.393698	42.7	-4.9	38.3w		122	23.6	112.0	0	20
2010	Dec	2	13	56	53.84	-10	26	59.9	0.400115	42.0	-4.9	38.9w		121	24.5	112.1	0	20
2010	Dec	3	13	58	54.18	-10	28	50.7	0.406614	41.4	-4.9	39.4w		120	25.3	112.1	0	20
2010	Dec	4	14	1	0.26	-10	31	32.1	0.413189	40.7	-4.9	39.9w		118	26.2	112.1	0	20
2010	Dec	5	14	3	11.88	-10	35	1.8	0.419838	40.1	-4.9	40.4w		117	27.0	112.1	-1	20
2010	Dec	6	14	5	28.83	-10	39	17.8	0.426554	39.4	-4.9	40.9w		116	27.9	112.1	-1	20
2010	Dec	7	14	7	50.93	-10	44	18.0	0.433336	38.8	-4.9	41.3w		115	28.7	112.1	-1	20
2010	Dec	8	14	10	17.98	-10	50	0.1	0.440178	38.2	-4.9	41.7w		114	29.5	112.0	-1	20
2010	Dec	9	14	12	49.83	-10	56	22.3	0.447079	37.6	-4.8	42.1w		113	30.3	112.0	-1	20
2010	Dec	10	14	15	26.29	-11	3	22.4	0.454035	37.0	-4.8	42.5w		112	31.1	111.9	-1	19
2010	Dec	11	14	18	7.22	-11	10	58.6	0.461042	36.5	-4.8	42.9w		111	31.9	111.8	-1	19

Venus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb		De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o		o	o
2010	Dec	12	14	20	52.48	-11	19	8.7	0.468099	35.9	-4.8	43.2	w	110	32.6	111.7		-1	19
2010	Dec	13	14	23	41.93	-11	27	51.0	0.475202	35.4	-4.8	43.5	w	109	33.4	111.6		-1	19
2010	Dec	14	14	26	35.43	-11	37	3.6	0.482349	34.9	-4.8	43.8	w	108	34.2	111.5		-2	19
2010	Dec	15	14	29	32.87	-11	46	44.5	0.489537	34.4	-4.8	44.1	w	108	34.9	111.4		-2	19
2010	Dec	16	14	32	34.14	-11	56	52.1	0.496765	33.9	-4.8	44.4	w	107	35.6	111.2		-2	18
2010	Dec	17	14	35	39.11	-12	7	24.5	0.504029	33.4	-4.8	44.6	w	106	36.3	111.1		-2	18
2010	Dec	18	14	38	47.70	-12	18	20.0	0.511327	32.9	-4.8	44.9	w	105	37.0	110.9		-2	18
2010	Dec	19	14	41	59.81	-12	29	36.9	0.518657	32.4	-4.8	45.1	w	104	37.7	110.7		-2	18
2010	Dec	20	14	45	15.34	-12	41	13.5	0.526018	32.0	-4.8	45.3	w	103	38.4	110.5		-2	18
2010	Dec	21	14	48	34.20	-12	53	8.1	0.533407	31.5	-4.8	45.5	w	103	39.1	110.3		-2	17
2010	Dec	22	14	51	56.32	-13	5	19.2	0.540822	31.1	-4.7	45.6	w	102	39.8	110.1		-2	17
2010	Dec	23	14	55	21.61	-13	17	45.1	0.548261	30.7	-4.7	45.8	w	101	40.4	109.9		-2	17
2010	Dec	24	14	58	49.99	-13	30	24.2	0.555722	30.3	-4.7	46.0	w	100	41.1	109.7		-2	17
2010	Dec	25	15	2	21.39	-13	43	14.9	0.563202	29.9	-4.7	46.1	w	100	41.7	109.4		-2	17
2010	Dec	26	15	5	55.74	-13	56	15.7	0.570701	29.5	-4.7	46.2	w	99	42.4	109.2		-2	16
2010	Dec	27	15	9	32.96	-14	9	25.1	0.578216	29.1	-4.7	46.3	w	98	43.0	108.9		-2	16
2010	Dec	28	15	13	12.99	-14	22	41.6	0.585745	28.7	-4.7	46.4	w	97	43.6	108.6		-2	16
2010	Dec	29	15	16	55.76	-14	36	3.7	0.593287	28.4	-4.7	46.5	w	97	44.2	108.4		-2	16
2010	Dec	30	15	20	41.21	-14	49	30.0	0.600840	28.0	-4.7	46.6	w	96	44.8	108.1		-2	15
2010	Dec	31	15	24	29.26	-15	2	59.2	0.608403	27.6	-4.7	46.7	w	95	45.4	107.8		-2	15

http://digilander.libero.it/occultazioni

Mars
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Jan	1	9	29	54.24	18	45	8.3	0.738878	12.7	-0.8	141.5	w	22	96.3	103.7	18	3
2010	Jan	2	9	29	18.81	18	50	30.1	0.733766	12.8	-0.8	142.6	w	21	96.5	103.4	18	3
2010	Jan	3	9	28	40.06	18	56	5.5	0.728799	12.8	-0.8	143.8	w	21	96.7	103.1	18	3
2010	Jan	4	9	27	57.98	19	1	54.0	0.723981	12.9	-0.8	145.0	w	20	96.9	102.7	18	3
2010	Jan	5	9	27	12.58	19	7	55.2	0.719316	13.0	-0.9	146.2	w	20	97.1	102.4	18	3
2010	Jan	6	9	26	23.88	19	14	8.6	0.714809	13.1	-0.9	147.5	w	19	97.3	102.0	18	2
2010	Jan	7	9	25	31.92	19	20	33.7	0.710464	13.2	-0.9	148.7	w	18	97.5	101.6	18	2
2010	Jan	8	9	24	36.72	19	27	10.0	0.706286	13.3	-0.9	149.9	w	18	97.7	101.1	18	2
2010	Jan	9	9	23	38.32	19	33	56.7	0.702281	13.3	-1.0	151.2	w	17	97.9	100.6	17	2
2010	Jan	10	9	22	36.79	19	40	53.1	0.698451	13.4	-1.0	152.5	w	16	98.0	100.1	17	2
2010	Jan	11	9	21	32.19	19	47	58.6	0.694803	13.5	-1.0	153.7	w	15	98.2	99.5	17	2
2010	Jan	12	9	20	24.58	19	55	12.2	0.691340	13.5	-1.0	155.0	w	15	98.4	98.8	17	1
2010	Jan	13	9	19	14.06	20	2	33.3	0.688067	13.6	-1.0	156.3	w	14	98.5	98.1	17	1
2010	Jan	14	9	18	0.70	20	10	0.8	0.684987	13.7	-1.1	157.6	w	13	98.7	97.3	17	1
2010	Jan	15	9	16	44.62	20	17	33.8	0.682106	13.7	-1.1	158.9	w	12	98.8	96.4	17	1
2010	Jan	16	9	15	25.93	20	25	11.3	0.679426	13.8	-1.1	160.2	w	12	99.0	95.4	17	1
2010	Jan	17	9	14	4.75	20	32	52.4	0.676950	13.8	-1.1	161.6	w	11	99.1	94.3	17	0
2010	Jan	18	9	12	41.20	20	40	36.0	0.674683	13.9	-1.1	162.9	w	10	99.2	93.0	16	0
2010	Jan	19	9	11	15.44	20	48	21.0	0.672627	13.9	-1.2	164.2	w	9	99.3	91.5	16	0
2010	Jan	20	9	9	47.61	20	56	6.4	0.670785	14.0	-1.2	165.5	w	9	99.4	89.8	16	360
2010	Jan	21	9	8	17.87	21	3	51.2	0.669159	14.0	-1.2	166.8	w	8	99.5	87.7	16	360
2010	Jan	22	9	6	46.37	21	11	34.2	0.667752	14.0	-1.2	168.1	w	7	99.6	85.3	16	359
2010	Jan	23	9	5	13.30	21	19	14.4	0.666566	14.0	-1.2	169.4	w	6	99.7	82.2	16	359
2010	Jan	24	9	3	38.84	21	26	50.7	0.665601	14.1	-1.2	170.6	w	6	99.8	78.3	16	359
2010	Jan	25	9	2	3.15	21	34	22.2	0.664860	14.1	-1.2	171.8	w	5	99.8	73.4	15	359
2010	Jan	26	9	0	26.43	21	41	47.9	0.664343	14.1	-1.3	173.0	w	4	99.9	66.8	15	358
2010	Jan	27	8	58	48.86	21	49	6.9	0.664050	14.1	-1.3	174.0	w	4	99.9	57.9	15	358
2010	Jan	28	8	57	10.63	21	56	18.2	0.663984	14.1	-1.3	174.8	w	3	99.9	45.9	15	358
2010	Jan	29	8	55	31.92	22	3	21.1	0.664142	14.1	-1.3	175.3	w	3	99.9	30.5	15	358

Mars
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Jan	30	8	53	52.92	22	10	14.7	0.664527	14.1	-1.3	175.5	w	3	99.9	12.7	15	357
2010	Jan	31	8	52	13.82	22	16	58.3	0.665137	14.1	-1.3	175.2	e	3	99.9	355.6	15	357
2010	Feb	1	8	50	34.80	22	23	31.2	0.665972	14.1	-1.3	174.5	e	3	99.9	341.4	15	357
2010	Feb	2	8	48	56.04	22	29	52.6	0.667032	14.0	-1.3	173.6	e	4	99.9	330.7	14	357
2010	Feb	3	8	47	17.75	22	36	2.0	0.668317	14.0	-1.2	172.6	e	4	99.9	322.8	14	356
2010	Feb	4	8	45	40.11	22	41	58.6	0.669826	14.0	-1.2	171.4	e	5	99.8	316.9	14	356
2010	Feb	5	8	44	3.32	22	47	42.0	0.671557	13.9	-1.2	170.2	e	6	99.7	312.4	14	356
2010	Feb	6	8	42	27.56	22	53	11.7	0.673510	13.9	-1.2	169.0	e	7	99.7	308.9	14	356
2010	Feb	7	8	40	53.02	22	58	27.2	0.675684	13.9	-1.2	167.7	e	7	99.6	306.1	14	355
2010	Feb	8	8	39	19.88	23	3	28.1	0.678076	13.8	-1.1	166.4	e	8	99.5	303.7	14	355
2010	Feb	9	8	37	48.32	23	8	14.1	0.680685	13.8	-1.1	165.1	e	9	99.4	301.8	14	355
2010	Feb	10	8	36	18.50	23	12	44.9	0.683508	13.7	-1.1	163.8	e	10	99.3	300.1	13	355
2010	Feb	11	8	34	50.60	23	17	0.2	0.686542	13.6	-1.1	162.5	e	10	99.2	298.7	13	354
2010	Feb	12	8	33	24.77	23	20	59.9	0.689786	13.6	-1.1	161.2	e	11	99.1	297.5	13	354
2010	Feb	13	8	32	1.16	23	24	43.8	0.693235	13.5	-1.0	159.9	e	12	98.9	296.4	13	354
2010	Feb	14	8	30	39.91	23	28	11.9	0.696887	13.4	-1.0	158.6	e	13	98.8	295.4	13	354
2010	Feb	15	8	29	21.16	23	31	24.1	0.700738	13.4	-1.0	157.3	e	13	98.7	294.5	13	354
2010	Feb	16	8	28	5.03	23	34	20.5	0.704784	13.3	-1.0	156.0	e	14	98.5	293.7	13	353
2010	Feb	17	8	26	51.63	23	37	1.1	0.709022	13.2	-0.9	154.8	e	15	98.4	293.0	13	353
2010	Feb	18	8	25	41.08	23	39	26.0	0.713448	13.1	-0.9	153.5	e	15	98.2	292.4	13	353
2010	Feb	19	8	24	33.46	23	41	35.3	0.718056	13.0	-0.9	152.3	e	16	98.0	291.8	13	353
2010	Feb	20	8	23	28.86	23	43	29.3	0.722844	12.9	-0.9	151.0	e	17	97.9	291.2	13	353
2010	Feb	21	8	22	27.36	23	45	8.2	0.727806	12.9	-0.8	149.8	e	17	97.7	290.7	13	353
2010	Feb	22	8	21	29.02	23	46	32.2	0.732938	12.8	-0.8	148.6	e	18	97.5	290.2	13	352
2010	Feb	23	8	20	33.89	23	47	41.6	0.738236	12.7	-0.8	147.4	e	19	97.3	289.8	13	352
2010	Feb	24	8	19	42.01	23	48	36.8	0.743695	12.6	-0.8	146.2	e	19	97.2	289.4	12	352
2010	Feb	25	8	18	53.41	23	49	18.0	0.749310	12.5	-0.7	145.0	e	20	97.0	289.0	12	352

Mars
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb		De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o		o	o
2010	Feb	26	8	18	8.11	23	49	45.5	0.755078	12.4	-0.7	143.8	e	21	96.8	288.7		12	352
2010	Feb	27	8	17	26.14	23	49	59.8	0.760994	12.3	-0.7	142.7	e	21	96.6	288.3		12	352
2010	Feb	28	8	16	47.48	23	50	1.1	0.767053	12.2	-0.6	141.6	e	22	96.4	288.0		12	352
2010	Mar	1	8	16	12.15	23	49	49.7	0.773252	12.1	-0.6	140.4	e	22	96.3	287.7		12	352
2010	Mar	2	8	15	40.15	23	49	26.1	0.779586	12.0	-0.6	139.3	e	23	96.1	287.4		12	352
2010	Mar	3	8	15	11.46	23	48	50.3	0.786053	11.9	-0.6	138.2	e	23	95.9	287.2		12	351
2010	Mar	4	8	14	46.09	23	48	2.9	0.792648	11.8	-0.5	137.1	e	24	95.7	287.0		12	351
2010	Mar	5	8	14	24.02	23	47	4.0	0.799368	11.7	-0.5	136.1	e	24	95.5	286.7		12	351
2010	Mar	6	8	14	5.23	23	45	53.9	0.806208	11.6	-0.5	135.0	e	25	95.3	286.5		12	351
2010	Mar	7	8	13	49.72	23	44	32.9	0.813167	11.5	-0.5	134.0	e	25	95.2	286.3		12	351
2010	Mar	8	8	13	37.44	23	43	1.3	0.820239	11.4	-0.4	132.9	e	26	95.0	286.2		12	351
2010	Mar	9	8	13	28.39	23	41	19.2	0.827421	11.3	-0.4	131.9	e	26	94.8	286.0		12	351
2010	Mar	10	8	13	22.52	23	39	27.0	0.834710	11.2	-0.4	130.9	e	27	94.6	285.8		12	351
2010	Mar	11	8	13	19.82	23	37	24.8	0.842102	11.1	-0.4	129.9	e	27	94.4	285.7		12	351
2010	Mar	12	8	13	20.24	23	35	12.8	0.849593	11.0	-0.3	128.9	e	28	94.3	285.6		12	351
2010	Mar	13	8	13	23.74	23	32	51.3	0.857179	10.9	-0.3	127.9	e	28	94.1	285.4		13	351
2010	Mar	14	8	13	30.30	23	30	20.4	0.864857	10.8	-0.3	127.0	e	28	93.9	285.3		13	351
2010	Mar	15	8	13	39.87	23	27	40.3	0.872624	10.7	-0.2	126.0	e	29	93.8	285.2		13	351
2010	Mar	16	8	13	52.40	23	24	51.2	0.880475	10.6	-0.2	125.1	e	29	93.6	285.1		13	351
2010	Mar	17	8	14	7.85	23	21	53.2	0.888407	10.5	-0.2	124.2	e	30	93.5	285.0		13	351
2010	Mar	18	8	14	26.18	23	18	46.6	0.896416	10.4	-0.2	123.3	e	30	93.3	285.0		13	351
2010	Mar	19	8	14	47.33	23	15	31.4	0.904500	10.3	-0.1	122.4	e	30	93.2	284.9		13	351
2010	Mar	20	8	15	11.27	23	12	7.8	0.912654	10.3	-0.1	121.5	e	31	93.0	284.8		13	351
2010	Mar	21	8	15	37.92	23	8	36.1	0.920875	10.2	-0.1	120.6	e	31	92.9	284.8		13	351
2010	Mar	22	8	16	7.24	23	4	56.3	0.929160	10.1	-0.1	119.7	e	31	92.7	284.7		13	352
2010	Mar	23	8	16	39.18	23	1	8.6	0.937506	10.0	0.0	118.9	e	32	92.6	284.7		13	352
2010	Mar	24	8	17	13.66	22	57	13.1	0.945909	9.9	0.0	118.0	e	32	92.5	284.7		13	352
2010	Mar	25	8	17	50.64	22	53	10.0	0.954366	9.8	0.0	117.2	e	32	92.3	284.6		13	352
2010	Mar	26	8	18	30.04	22	48	59.3	0.962875	9.7	0.0	116.4	e	32	92.2	284.6		13	352

Mars
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Mar	27	8	19	11.82	22	44	41.3	0.971433	9.6	0.0	115.6e	33	92.1	284.6	13	352
2010	Mar	28	8	19	55.90	22	40	16.0	0.980037	9.6	0.1	114.7e	33	92.0	284.6	14	352
2010	Mar	29	8	20	42.24	22	35	43.5	0.988686	9.5	0.1	114.0e	33	91.8	284.6	14	352
2010	Mar	30	8	21	30.78	22	31	3.8	0.997376	9.4	0.1	113.2e	33	91.7	284.6	14	352
2010	Mar	31	8	22	21.46	22	26	17.1	1.006106	9.3	0.1	112.4e	34	91.6	284.6	14	352
2010	Apr	1	8	23	14.24	22	21	23.3	1.014875	9.2	0.2	111.6e	34	91.5	284.6	14	353
2010	Apr	2	8	24	9.07	22	16	22.6	1.023679	9.1	0.2	110.9e	34	91.4	284.6	14	353
2010	Apr	3	8	25	5.89	22	11	15.0	1.032518	9.1	0.2	110.1e	34	91.3	284.7	14	353
2010	Apr	4	8	26	4.67	22	6	0.5	1.041390	9.0	0.2	109.4e	34	91.2	284.7	14	353
2010	Apr	5	8	27	5.36	22	0	39.1	1.050292	8.9	0.2	108.6e	35	91.1	284.7	14	353
2010	Apr	6	8	28	7.91	21	55	10.9	1.059223	8.8	0.3	107.9e	35	91.0	284.8	15	353
2010	Apr	7	8	29	12.27	21	49	35.9	1.068181	8.8	0.3	107.2e	35	90.9	284.8	15	354
2010	Apr	8	8	30	18.41	21	43	54.1	1.077164	8.7	0.3	106.5e	35	90.9	284.8	15	354
2010	Apr	9	8	31	26.28	21	38	5.4	1.086170	8.6	0.3	105.8e	35	90.8	284.9	15	354
2010	Apr	10	8	32	35.85	21	32	10.0	1.095198	8.5	0.4	105.1e	36	90.7	284.9	15	354
2010	Apr	11	8	33	47.06	21	26	7.7	1.104245	8.5	0.4	104.4e	36	90.6	285.0	15	354
2010	Apr	12	8	34	59.89	21	19	58.7	1.113309	8.4	0.4	103.7e	36	90.6	285.1	15	354
2010	Apr	13	8	36	14.29	21	13	42.9	1.122389	8.3	0.4	103.0e	36	90.5	285.1	15	355
2010	Apr	14	8	37	30.23	21	7	20.2	1.131482	8.3	0.4	102.4e	36	90.4	285.2	16	355
2010	Apr	15	8	38	47.67	21	0	50.8	1.140587	8.2	0.5	101.7e	36	90.4	285.2	16	355
2010	Apr	16	8	40	6.57	20	54	14.6	1.149703	8.1	0.5	101.1e	36	90.3	285.3	16	355
2010	Apr	17	8	41	26.90	20	47	31.7	1.158826	8.1	0.5	100.4e	36	90.3	285.4	16	355
2010	Apr	18	8	42	48.61	20	40	42.0	1.167955	8.0	0.5	99.8e	36	90.2	285.5	16	356
2010	Apr	19	8	44	11.66	20	33	45.7	1.177089	8.0	0.5	99.1e	37	90.2	285.5	16	356
2010	Apr	20	8	45	36.02	20	26	42.7	1.186225	7.9	0.5	98.5e	37	90.1	285.6	16	356
2010	Apr	21	8	47	1.65	20	19	33.1	1.195363	7.8	0.6	97.9e	37	90.1	285.7	17	356
2010	Apr	22	8	48	28.50	20	12	16.9	1.204500	7.8	0.6	97.3e	37	90.0	285.8	17	356
2010	Apr	23	8	49	56.53	20	4	54.2	1.213634	7.7	0.6	96.7e	37	90.0	285.9	17	357
2010	Apr	24	8	51	25.72	19	57	24.9	1.222766	7.7	0.6	96.1e	37	90.0	285.9	17	357

Mars
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Apr	25	8	52	56.01	19	49	49.2	1.231894	7.6	0.6	95.5e	37	89.9	286.0	17	357
2010	Apr	26	8	54	27.39	19	42	6.9	1.241016	7.5	0.6	94.9e	37	89.9	286.1	17	357
2010	Apr	27	8	55	59.82	19	34	18.2	1.250131	7.5	0.7	94.3e	37	89.9	286.2	17	358
2010	Apr	28	8	57	33.27	19	26	23.0	1.259240	7.4	0.7	93.7e	37	89.8	286.3	18	358
2010	Apr	29	8	59	7.71	19	18	21.4	1.268341	7.4	0.7	93.1e	37	89.8	286.4	18	358
2010	Apr	30	9	0	43.11	19	10	13.3	1.277433	7.3	0.7	92.5e	37	89.8	286.5	18	358
2010	May	1	9	2	19.45	19	1	58.8	1.286516	7.3	0.7	92.0e	37	89.8	286.6	18	359
2010	May	2	9	3	56.71	18	53	38.0	1.295590	7.2	0.7	91.4e	37	89.8	286.7	18	359
2010	May	3	9	5	34.85	18	45	10.7	1.304652	7.2	0.8	90.9e	37	89.7	286.8	18	359
2010	May	4	9	7	13.86	18	36	37.0	1.313703	7.1	0.8	90.3e	37	89.7	286.9	18	359
2010	May	5	9	8	53.70	18	27	56.9	1.322741	7.1	0.8	89.8e	37	89.7	287.0	19	360
2010	May	6	9	10	34.37	18	19	10.4	1.331767	7.0	0.8	89.2e	37	89.7	287.1	19	360
2010	May	7	9	12	15.84	18	10	17.5	1.340777	7.0	0.8	88.7e	37	89.7	287.2	19	0
2010	May	8	9	13	58.09	18	1	18.1	1.349773	6.9	0.8	88.1e	37	89.7	287.3	19	0
2010	May	9	9	15	41.10	17	52	12.4	1.358753	6.9	0.8	87.6e	37	89.7	287.4	19	1
2010	May	10	9	17	24.86	17	43	0.2	1.367715	6.8	0.9	87.1e	37	89.7	287.5	19	1
2010	May	11	9	19	9.35	17	33	41.6	1.376660	6.8	0.9	86.5e	37	89.7	287.6	19	1
2010	May	12	9	20	54.54	17	24	16.6	1.385585	6.8	0.9	86.0e	37	89.7	287.7	20	2
2010	May	13	9	22	40.43	17	14	45.3	1.394490	6.7	0.9	85.5e	37	89.7	287.8	20	2
2010	May	14	9	24	27.00	17	5	7.6	1.403374	6.7	0.9	85.0e	37	89.7	287.9	20	2
2010	May	15	9	26	14.22	16	55	23.5	1.412235	6.6	0.9	84.5e	37	89.7	288.0	20	2
2010	May	16	9	28	2.09	16	45	33.2	1.421073	6.6	0.9	84.0e	37	89.7	288.1	20	3
2010	May	17	9	29	50.58	16	35	36.6	1.429886	6.5	0.9	83.5e	37	89.7	288.2	20	3
2010	May	18	9	31	39.66	16	25	33.8	1.438674	6.5	1.0	83.0e	37	89.7	288.3	21	3
2010	May	19	9	33	29.33	16	15	24.9	1.447435	6.5	1.0	82.5e	37	89.8	288.4	21	4
2010	May	20	9	35	19.55	16	5	9.9	1.456168	6.4	1.0	82.0e	37	89.8	288.5	21	4
2010	May	21	9	37	10.31	15	54	48.9	1.464874	6.4	1.0	81.5e	37	89.8	288.6	21	4
2010	May	22	9	39	1.60	15	44	21.8	1.473550	6.4	1.0	81.0e	37	89.8	288.7	21	5

Mars
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	May	23	9	40	53.39	15	33	48.9	1.482198	6.3	1.0	80.6e	37	89.8	288.8	21	5
2010	May	24	9	42	45.68	15	23	10.0	1.490815	6.3	1.0	80.1e	37	89.9	288.9	21	5
2010	May	25	9	44	38.45	15	12	25.2	1.499403	6.2	1.0	79.6e	37	89.9	289.0	21	5
2010	May	26	9	46	31.68	15	1	34.6	1.507960	6.2	1.1	79.1e	37	89.9	289.1	22	6
2010	May	27	9	48	25.36	14	50	38.2	1.516487	6.2	1.1	78.7e	37	89.9	289.2	22	6
2010	May	28	9	50	19.49	14	39	36.0	1.524983	6.1	1.1	78.2e	37	89.9	289.3	22	6
2010	May	29	9	52	14.05	14	28	28.2	1.533448	6.1	1.1	77.7e	37	90.0	289.4	22	7
2010	May	30	9	54	9.02	14	17	14.7	1.541881	6.1	1.1	77.3e	37	90.0	289.5	22	7
2010	May	31	9	56	4.41	14	5	55.5	1.550284	6.0	1.1	76.8e	37	90.0	289.6	22	7
2010	Jun	1	9	58	0.19	13	54	30.8	1.558654	6.0	1.1	76.4e	37	90.1	289.7	22	8
2010	Jun	2	9	59	56.36	13	43	0.4	1.566993	6.0	1.1	75.9e	37	90.1	289.8	23	8
2010	Jun	3	10	1	52.92	13	31	24.5	1.575299	5.9	1.1	75.5e	37	90.1	289.9	23	8
2010	Jun	4	10	3	49.86	13	19	43.1	1.583572	5.9	1.1	75.0e	37	90.2	290.0	23	9
2010	Jun	5	10	5	47.17	13	7	56.1	1.591812	5.9	1.2	74.6e	36	90.2	290.1	23	9
2010	Jun	6	10	7	44.84	12	56	3.7	1.600018	5.8	1.2	74.1e	36	90.2	290.2	23	9
2010	Jun	7	10	9	42.88	12	44	5.8	1.608189	5.8	1.2	73.7e	36	90.3	290.3	23	10
2010	Jun	8	10	11	41.27	12	32	2.6	1.616326	5.8	1.2	73.3e	36	90.3	290.4	23	10
2010	Jun	9	10	13	40.02	12	19	53.9	1.624427	5.8	1.2	72.8e	36	90.3	290.5	23	10
2010	Jun	10	10	15	39.11	12	7	39.9	1.632492	5.7	1.2	72.4e	36	90.4	290.5	23	11
2010	Jun	11	10	17	38.54	11	55	20.6	1.640520	5.7	1.2	72.0e	36	90.4	290.6	24	11
2010	Jun	12	10	19	38.32	11	42	56.0	1.648510	5.7	1.2	71.6e	36	90.5	290.7	24	11
2010	Jun	13	10	21	38.42	11	30	26.3	1.656462	5.7	1.2	71.1e	36	90.5	290.8	24	12
2010	Jun	14	10	23	38.84	11	17	51.5	1.664375	5.6	1.2	70.7e	36	90.5	290.9	24	12
2010	Jun	15	10	25	39.58	11	5	11.7	1.672248	5.6	1.2	70.3e	36	90.6	291.0	24	12
2010	Jun	16	10	27	40.62	10	52	27.0	1.680080	5.6	1.2	69.9e	36	90.6	291.0	24	13
2010	Jun	17	10	29	41.96	10	39	37.3	1.687872	5.5	1.3	69.5e	36	90.7	291.1	24	13
2010	Jun	18	10	31	43.58	10	26	42.9	1.695622	5.5	1.3	69.0e	35	90.7	291.2	24	13
2010	Jun	19	10	33	45.49	10	13	43.8	1.703331	5.5	1.3	68.6e	35	90.8	291.3	24	14

Mars
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		%Ill	Limb		De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o			o		o	o
2010	Jun	20	10	35	47.67	10	0	40.0	1.710997	5.5	1.3	68.2e	35	90.8	291.4		25	14
2010	Jun	21	10	37	50.13	9	47	31.6	1.718622	5.4	1.3	67.8e	35	90.9	291.4		25	14
2010	Jun	22	10	39	52.86	9	34	18.6	1.726204	5.4	1.3	67.4e	35	90.9	291.5		25	15
2010	Jun	23	10	41	55.85	9	21	1.2	1.733744	5.4	1.3	67.0e	35	91.0	291.6		25	15
2010	Jun	24	10	43	59.11	9	7	39.4	1.741242	5.4	1.3	66.6e	35	91.0	291.7		25	15
2010	Jun	25	10	46	2.62	8	54	13.2	1.748698	5.4	1.3	66.2e	35	91.1	291.7		25	16
2010	Jun	26	10	48	6.39	8	40	42.8	1.756113	5.3	1.3	65.8e	35	91.1	291.8		25	16
2010	Jun	27	10	50	10.41	8	27	8.2	1.763485	5.3	1.3	65.4e	35	91.2	291.9		25	16
2010	Jun	28	10	52	14.68	8	13	29.4	1.770815	5.3	1.3	65.0e	34	91.2	291.9		25	17
2010	Jun	29	10	54	19.20	7	59	46.6	1.778104	5.3	1.3	64.6e	34	91.3	292.0		25	17
2010	Jun	30	10	56	23.96	7	45	59.7	1.785350	5.2	1.3	64.3e	34	91.3	292.1		25	17
2010	Jul	1	10	58	28.98	7	32	8.8	1.792555	5.2	1.3	63.9e	34	91.4	292.1		25	18
2010	Jul	2	11	0	34.24	7	18	13.9	1.799717	5.2	1.4	63.5e	34	91.4	292.2		25	18
2010	Jul	3	11	2	39.76	7	4	15.2	1.806836	5.2	1.4	63.1e	34	91.5	292.2		25	18
2010	Jul	4	11	4	45.53	6	50	12.6	1.813914	5.2	1.4	62.7e	34	91.5	292.3		26	19
2010	Jul	5	11	6	51.56	6	36	6.3	1.820948	5.1	1.4	62.3e	34	91.6	292.3		26	19
2010	Jul	6	11	8	57.85	6	21	56.2	1.827939	5.1	1.4	61.9e	34	91.6	292.4		26	19
2010	Jul	7	11	11	4.39	6	7	42.4	1.834886	5.1	1.4	61.6e	33	91.7	292.4		26	20
2010	Jul	8	11	13	11.20	5	53	25.0	1.841790	5.1	1.4	61.2e	33	91.7	292.5		26	20
2010	Jul	9	11	15	18.28	5	39	4.0	1.848649	5.1	1.4	60.8e	33	91.8	292.5		26	20
2010	Jul	10	11	17	25.62	5	24	39.5	1.855464	5.0	1.4	60.4e	33	91.9	292.6		26	21
2010	Jul	11	11	19	33.23	5	10	11.7	1.862233	5.0	1.4	60.1e	33	91.9	292.6		26	21
2010	Jul	12	11	21	41.09	4	55	40.5	1.868956	5.0	1.4	59.7e	33	92.0	292.7		26	21
2010	Jul	13	11	23	49.23	4	41	6.2	1.875633	5.0	1.4	59.3e	33	92.0	292.7		26	22
2010	Jul	14	11	25	57.62	4	26	28.7	1.882262	5.0	1.4	59.0e	33	92.1	292.7		26	22
2010	Jul	15	11	28	6.26	4	11	48.2	1.888845	5.0	1.4	58.6e	33	92.1	292.8		26	22
2010	Jul	16	11	30	15.17	3	57	4.8	1.895380	4.9	1.4	58.2e	32	92.2	292.8		26	23
2010	Jul	17	11	32	24.34	3	42	18.5	1.901867	4.9	1.4	57.9e	32	92.3	292.8		26	23
2010	Jul	18	11	34	33.77	3	27	29.5	1.908306	4.9	1.4	57.5e	32	92.3	292.9		26	23

Mars
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Jul	19	11	36	43.46		3	12 37.8	1.914697	4.9	1.4	57.1	e	32	92.4	292.9	26	23
2010	Jul	20	11	38	53.41		2	57 43.5	1.921041	4.9	1.4	56.8	e	32	92.4	292.9	26	24
2010	Jul	21	11	41	3.63		2	42 46.7	1.927338	4.9	1.4	56.4	e	32	92.5	293.0	26	24
2010	Jul	22	11	43	14.10		2	27 47.5	1.933587	4.8	1.4	56.1	e	32	92.6	293.0	26	24
2010	Jul	23	11	45	24.85		2	12 46.0	1.939788	4.8	1.5	55.7	e	32	92.6	293.0	26	25
2010	Jul	24	11	47	35.86		1	57 42.2	1.945944	4.8	1.5	55.4	e	31	92.7	293.0	26	25
2010	Jul	25	11	49	47.14		1	42 36.2	1.952052	4.8	1.5	55.0	e	31	92.7	293.0	26	25
2010	Jul	26	11	51	58.69		1	27 28.2	1.958114	4.8	1.5	54.7	e	31	92.8	293.0	26	26
2010	Jul	27	11	54	10.51		1	12 18.2	1.964129	4.8	1.5	54.3	e	31	92.8	293.1	26	26
2010	Jul	28	11	56	22.61		0	57 6.3	1.970099	4.8	1.5	54.0	e	31	92.9	293.1	26	26
2010	Jul	29	11	58	35.00		0	41 52.5	1.976022	4.7	1.5	53.6	e	31	93.0	293.1	26	27
2010	Jul	30	12	0	47.68		0	26 36.9	1.981899	4.7	1.5	53.3	e	31	93.0	293.1	26	27
2010	Jul	31	12	3	0.65		0	11 19.7	1.987730	4.7	1.5	52.9	e	30	93.1	293.1	26	27
2010	Aug	1	12	5	13.92	-	0	3 59.3	1.993515	4.7	1.5	52.6	e	30	93.1	293.1	26	28
2010	Aug	2	12	7	27.50	-	0	19 19.7	1.999254	4.7	1.5	52.2	e	30	93.2	293.1	26	28
2010	Aug	3	12	9	41.39	-	0	34 41.7	2.004947	4.7	1.5	51.9	e	30	93.3	293.1	26	28
2010	Aug	4	12	11	55.61	-	0	50 5.1	2.010593	4.7	1.5	51.5	e	30	93.3	293.1	26	28
2010	Aug	5	12	14	10.14	-	1	5 29.8	2.016193	4.6	1.5	51.2	e	30	93.4	293.1	26	29
2010	Aug	6	12	16	25.02	-	1	20 55.8	2.021746	4.6	1.5	50.9	e	30	93.4	293.1	26	29
2010	Aug	7	12	18	40.22	-	1	36 22.9	2.027251	4.6	1.5	50.5	e	30	93.5	293.0	26	29
2010	Aug	8	12	20	55.77	-	1	51 51.0	2.032709	4.6	1.5	50.2	e	29	93.6	293.0	26	30
2010	Aug	9	12	23	11.65	-	2	7 20.1	2.038120	4.6	1.5	49.8	e	29	93.6	293.0	26	30
2010	Aug	10	12	25	27.88	-	2	22 50.0	2.043482	4.6	1.5	49.5	e	29	93.7	293.0	26	30
2010	Aug	11	12	27	44.46	-	2	38 20.6	2.048795	4.6	1.5	49.2	e	29	93.7	293.0	25	30
2010	Aug	12	12	30	1.38	-	2	53 51.7	2.054059	4.6	1.5	48.8	e	29	93.8	293.0	25	31
2010	Aug	13	12	32	18.66	-	3	9 23.4	2.059274	4.5	1.5	48.5	e	29	93.9	292.9	25	31
2010	Aug	14	12	34	36.30	-	3	24 55.4	2.064439	4.5	1.5	48.2	e	29	93.9	292.9	25	31
2010	Aug	15	12	36	54.30	-	3	40 27.7	2.069555	4.5	1.5	47.8	e	28	94.0	292.9	25	31

Mars
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		%Ill	Limb		De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o		o	o
2010	Aug	16	12	39	12.67	- 3	56	0.1	2.074622	4.5	1.5	47.5e	28	94.1	292.8		25	32
2010	Aug	17	12	41	31.40	- 4	11	32.6	2.079641	4.5	1.5	47.2e	28	94.1	292.8		25	32
2010	Aug	18	12	43	50.51	- 4	27	5.0	2.084610	4.5	1.5	46.9e	28	94.2	292.8		25	32
2010	Aug	19	12	46	9.99	- 4	42	37.3	2.089531	4.5	1.5	46.5e	28	94.2	292.7		25	32
2010	Aug	20	12	48	29.85	- 4	58	9.2	2.094404	4.5	1.5	46.2e	28	94.3	292.7		25	33
2010	Aug	21	12	50	50.10	- 5	13	40.7	2.099229	4.5	1.5	45.9e	28	94.3	292.6		25	33
2010	Aug	22	12	53	10.73	- 5	29	11.7	2.104007	4.4	1.5	45.6e	27	94.4	292.6		25	33
2010	Aug	23	12	55	31.75	- 5	44	42.1	2.108738	4.4	1.5	45.2e	27	94.5	292.5		24	33
2010	Aug	24	12	57	53.17	- 6	0	11.8	2.113422	4.4	1.5	44.9e	27	94.5	292.5		24	34
2010	Aug	25	13	0	14.99	- 6	15	40.6	2.118059	4.4	1.5	44.6e	27	94.6	292.4		24	34
2010	Aug	26	13	2	37.23	- 6	31	8.5	2.122650	4.4	1.5	44.3e	27	94.6	292.4		24	34
2010	Aug	27	13	4	59.89	- 6	46	35.3	2.127195	4.4	1.5	43.9e	27	94.7	292.3		24	34
2010	Aug	28	13	7	22.97	- 7	2	1.0	2.131694	4.4	1.5	43.6e	26	94.8	292.3		24	34
2010	Aug	29	13	9	46.49	- 7	17	25.4	2.136147	4.4	1.5	43.3e	26	94.8	292.2		24	35
2010	Aug	30	13	12	10.45	- 7	32	48.5	2.140555	4.4	1.5	43.0e	26	94.9	292.1		24	35
2010	Aug	31	13	14	34.87	- 7	48	10.1	2.144917	4.4	1.5	42.7e	26	94.9	292.1		24	35
2010	Sep	1	13	16	59.74	- 8	3	30.2	2.149233	4.4	1.5	42.3e	26	95.0	292.0		23	35
2010	Sep	2	13	19	25.08	- 8	18	48.6	2.153504	4.3	1.5	42.0e	26	95.1	291.9		23	35
2010	Sep	3	13	21	50.90	- 8	34	5.2	2.157728	4.3	1.5	41.7e	26	95.1	291.8		23	36
2010	Sep	4	13	24	17.19	- 8	49	19.9	2.161907	4.3	1.5	41.4e	25	95.2	291.7		23	36
2010	Sep	5	13	26	43.96	- 9	4	32.5	2.166040	4.3	1.5	41.1e	25	95.2	291.7		23	36
2010	Sep	6	13	29	11.23	- 9	19	43.0	2.170126	4.3	1.5	40.8e	25	95.3	291.6		23	36
2010	Sep	7	13	31	38.98	- 9	34	51.1	2.174166	4.3	1.5	40.5e	25	95.3	291.5		22	36
2010	Sep	8	13	34	7.24	- 9	49	56.7	2.178158	4.3	1.5	40.1e	25	95.4	291.4		22	36
2010	Sep	9	13	36	36.00	-10	4	59.7	2.182104	4.3	1.5	39.8e	25	95.5	291.3		22	37
2010	Sep	10	13	39	5.27	-10	19	59.9	2.186001	4.3	1.5	39.5e	24	95.5	291.2		22	37
2010	Sep	11	13	41	35.05	-10	34	57.3	2.189851	4.3	1.5	39.2e	24	95.6	291.1		22	37
2010	Sep	12	13	44	5.36	-10	49	51.6	2.193654	4.3	1.5	38.9e	24	95.6	291.0		22	37

Mars
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Sep	13	13	46	36.19	-11	4	42.8	2.197409	4.3	1.5	38.6e	24	95.7	290.9	21	37
2010	Sep	14	13	49	7.54	-11	19	30.6	2.201118	4.3	1.5	38.3e	24	95.7	290.8	21	37
2010	Sep	15	13	51	39.42	-11	34	15.0	2.204780	4.2	1.5	38.0e	24	95.8	290.7	21	37
2010	Sep	16	13	54	11.84	-11	48	55.8	2.208395	4.2	1.5	37.7e	24	95.8	290.6	21	38
2010	Sep	17	13	56	44.79	-12	3	32.8	2.211965	4.2	1.5	37.4e	23	95.9	290.5	21	38
2010	Sep	18	13	59	18.28	-12	18	5.9	2.215489	4.2	1.5	37.1e	23	96.0	290.4	21	38
2010	Sep	19	14	1	52.31	-12	32	34.9	2.218969	4.2	1.5	36.8e	23	96.0	290.2	20	38
2010	Sep	20	14	4	26.89	-12	46	59.8	2.222403	4.2	1.5	36.5e	23	96.1	290.1	20	38
2010	Sep	21	14	7	2.03	-13	1	20.3	2.225794	4.2	1.5	36.2e	23	96.1	290.0	20	38
2010	Sep	22	14	9	37.73	-13	15	36.3	2.229140	4.2	1.5	35.9e	23	96.2	289.9	20	38
2010	Sep	23	14	12	14.00	-13	29	47.7	2.232443	4.2	1.5	35.6e	22	96.2	289.7	20	38
2010	Sep	24	14	14	50.84	-13	43	54.4	2.235703	4.2	1.5	35.2e	22	96.3	289.6	19	38
2010	Sep	25	14	17	28.27	-13	57	56.1	2.238920	4.2	1.5	34.9e	22	96.3	289.5	19	38
2010	Sep	26	14	20	6.28	-14	11	52.8	2.242095	4.2	1.5	34.6e	22	96.4	289.3	19	38
2010	Sep	27	14	22	44.89	-14	25	44.3	2.245227	4.2	1.5	34.3e	22	96.4	289.2	19	38
2010	Sep	28	14	25	24.11	-14	39	30.5	2.248318	4.2	1.5	34.1e	22	96.5	289.0	18	39
2010	Sep	29	14	28	3.93	-14	53	11.3	2.251366	4.2	1.5	33.8e	21	96.5	288.9	18	39
2010	Sep	30	14	30	44.37	-15	6	46.4	2.254372	4.2	1.5	33.5e	21	96.6	288.7	18	39
2010	Oct	1	14	33	25.43	-15	20	15.7	2.257337	4.1	1.5	33.2e	21	96.6	288.6	18	39
2010	Oct	2	14	36	7.11	-15	33	39.1	2.260260	4.1	1.5	32.9e	21	96.7	288.4	18	39
2010	Oct	3	14	38	49.42	-15	46	56.4	2.263141	4.1	1.5	32.6e	21	96.7	288.3	17	39
2010	Oct	4	14	41	32.36	-16	0	7.4	2.265980	4.1	1.5	32.3e	21	96.8	288.1	17	39
2010	Oct	5	14	44	15.93	-16	13	11.9	2.268776	4.1	1.5	32.0e	20	96.8	287.9	17	39
2010	Oct	6	14	47	0.14	-16	26	9.8	2.271530	4.1	1.5	31.7e	20	96.9	287.8	17	39
2010	Oct	7	14	49	45.00	-16	39	0.9	2.274241	4.1	1.5	31.4e	20	96.9	287.6	16	39
2010	Oct	8	14	52	30.50	-16	51	45.0	2.276910	4.1	1.5	31.1e	20	97.0	287.4	16	39
2010	Oct	9	14	55	16.65	-17	4	22.0	2.279536	4.1	1.5	30.8e	20	97.0	287.3	16	39
2010	Oct	10	14	58	3.45	-17	16	51.7	2.282119	4.1	1.5	30.5e	20	97.1	287.1	16	39
2010	Oct	11	15	0	50.91	-17	29	14.0	2.284659	4.1	1.5	30.2e	19	97.1	286.9	15	39

Mars
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Oct	12	15	3	39.01	-17	41	28.5	2.287157	4.1	1.5	29.9e	19	97.2	286.7	15	39
2010	Oct	13	15	6	27.75	-17	53	35.3	2.289614	4.1	1.5	29.6e	19	97.2	286.5	15	39
2010	Oct	14	15	9	17.15	-18	5	34.1	2.292029	4.1	1.5	29.3e	19	97.3	286.4	15	39
2010	Oct	15	15	12	7.18	-18	17	24.7	2.294403	4.1	1.5	29.1e	19	97.3	286.2	14	38
2010	Oct	16	15	14	57.87	-18	29	6.9	2.296736	4.1	1.5	28.8e	19	97.4	286.0	14	38
2010	Oct	17	15	17	49.19	-18	40	40.7	2.299030	4.1	1.5	28.5e	18	97.4	285.8	14	38
2010	Oct	18	15	20	41.17	-18	52	5.7	2.301284	4.1	1.5	28.2e	18	97.5	285.6	14	38
2010	Oct	19	15	23	33.79	-19	3	21.8	2.303499	4.1	1.5	27.9e	18	97.5	285.4	13	38
2010	Oct	20	15	26	27.06	-19	14	28.9	2.305676	4.1	1.5	27.6e	18	97.6	285.2	13	38
2010	Oct	21	15	29	20.99	-19	25	26.7	2.307814	4.1	1.5	27.3e	18	97.6	285.0	13	38
2010	Oct	22	15	32	15.56	-19	36	15.2	2.309915	4.1	1.5	27.0e	18	97.6	284.8	12	38
2010	Oct	23	15	35	10.79	-19	46	54.1	2.311979	4.0	1.4	26.8e	17	97.7	284.6	12	38
2010	Oct	24	15	38	6.68	-19	57	23.4	2.314006	4.0	1.4	26.5e	17	97.7	284.3	12	38
2010	Oct	25	15	41	3.22	-20	7	42.7	2.315997	4.0	1.4	26.2e	17	97.8	284.1	12	38
2010	Oct	26	15	44	0.41	-20	17	52.0	2.317951	4.0	1.4	25.9e	17	97.8	283.9	11	37
2010	Oct	27	15	46	58.27	-20	27	51.2	2.319870	4.0	1.4	25.6e	17	97.9	283.7	11	37
2010	Oct	28	15	49	56.77	-20	37	39.9	2.321754	4.0	1.4	25.4e	17	97.9	283.5	11	37
2010	Oct	29	15	52	55.93	-20	47	18.1	2.323602	4.0	1.4	25.1e	16	97.9	283.2	10	37
2010	Oct	30	15	55	55.74	-20	56	45.6	2.325415	4.0	1.4	24.8e	16	98.0	283.0	10	37
2010	Oct	31	15	58	56.19	-21	6	2.2	2.327192	4.0	1.4	24.5e	16	98.0	282.8	10	37
2010	Nov	1	16	1	57.29	-21	15	7.6	2.328935	4.0	1.4	24.2e	16	98.1	282.6	10	37
2010	Nov	2	16	4	59.03	-21	24	1.8	2.330641	4.0	1.4	23.9e	16	98.1	282.3	9	36
2010	Nov	3	16	8	1.41	-21	32	44.6	2.332313	4.0	1.4	23.7e	16	98.2	282.1	9	36
2010	Nov	4	16	11	4.42	-21	41	15.7	2.333949	4.0	1.4	23.4e	15	98.2	281.9	9	36
2010	Nov	5	16	14	8.07	-21	49	35.1	2.335549	4.0	1.4	23.1e	15	98.2	281.6	8	36
2010	Nov	6	16	17	12.34	-21	57	42.5	2.337113	4.0	1.4	22.8e	15	98.3	281.4	8	36
2010	Nov	7	16	20	17.23	-22	5	37.9	2.338642	4.0	1.4	22.6e	15	98.3	281.2	8	36
2010	Nov	8	16	23	22.72	-22	13	20.9	2.340136	4.0	1.4	22.3e	15	98.3	280.9	7	35

Mars
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb		De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o		o	o
2010	Nov	9	16	26	28.82	-22	20	51.6	2.341594	4.0	1.4	22.0	e	15	98.4	280.7		7	35
2010	Nov	10	16	29	35.50	-22	28	9.7	2.343018	4.0	1.4	21.7	e	14	98.4	280.4		7	35
2010	Nov	11	16	32	42.76	-22	35	15.0	2.344407	4.0	1.4	21.5	e	14	98.5	280.2		6	35
2010	Nov	12	16	35	50.59	-22	42	7.4	2.345762	4.0	1.4	21.2	e	14	98.5	279.9		6	34
2010	Nov	13	16	38	58.97	-22	48	46.7	2.347085	4.0	1.4	20.9	e	14	98.5	279.7		6	34
2010	Nov	14	16	42	7.91	-22	55	12.9	2.348374	4.0	1.4	20.6	e	14	98.6	279.4		5	34
2010	Nov	15	16	45	17.38	-23	1	25.6	2.349632	4.0	1.4	20.4	e	14	98.6	279.2		5	34
2010	Nov	16	16	48	27.39	-23	7	24.8	2.350857	4.0	1.4	20.1	e	13	98.6	278.9		5	33
2010	Nov	17	16	51	37.91	-23	13	10.4	2.352052	4.0	1.4	19.8	e	13	98.7	278.7		5	33
2010	Nov	18	16	54	48.95	-23	18	42.1	2.353216	4.0	1.4	19.6	e	13	98.7	278.4		4	33
2010	Nov	19	16	58	0.50	-23	23	59.9	2.354350	4.0	1.4	19.3	e	13	98.7	278.2		4	33
2010	Nov	20	17	1	12.55	-23	29	3.6	2.355454	4.0	1.4	19.0	e	13	98.8	277.9		4	32
2010	Nov	21	17	4	25.08	-23	33	53.2	2.356530	4.0	1.4	18.7	e	13	98.8	277.7		3	32
2010	Nov	22	17	7	38.09	-23	38	28.4	2.357577	4.0	1.4	18.5	e	12	98.8	277.4		3	32
2010	Nov	23	17	10	51.56	-23	42	49.2	2.358596	4.0	1.4	18.2	e	12	98.9	277.1		3	32
2010	Nov	24	17	14	5.50	-23	46	55.4	2.359588	4.0	1.3	17.9	e	12	98.9	276.9		2	31
2010	Nov	25	17	17	19.88	-23	50	47.0	2.360552	4.0	1.3	17.7	e	12	98.9	276.6		2	31
2010	Nov	26	17	20	34.69	-23	54	23.7	2.361490	4.0	1.3	17.4	e	12	99.0	276.4		2	31
2010	Nov	27	17	23	49.92	-23	57	45.5	2.362400	4.0	1.3	17.1	e	12	99.0	276.1		1	30
2010	Nov	28	17	27	5.55	-24	0	52.3	2.363284	4.0	1.3	16.9	e	11	99.0	275.9		1	30
2010	Nov	29	17	30	21.59	-24	3	43.9	2.364141	4.0	1.3	16.6	e	11	99.0	275.6		1	30
2010	Nov	30	17	33	38.01	-24	6	20.3	2.364971	4.0	1.3	16.4	e	11	99.1	275.4		0	29
2010	Dec	1	17	36	54.80	-24	8	41.2	2.365775	4.0	1.3	16.1	e	11	99.1	275.1		0	29
2010	Dec	2	17	40	11.95	-24	10	46.7	2.366551	4.0	1.3	15.8	e	11	99.1	274.9		0	29
2010	Dec	3	17	43	29.44	-24	12	36.7	2.367301	4.0	1.3	15.6	e	11	99.2	274.6		-1	28
2010	Dec	4	17	46	47.27	-24	14	11.0	2.368024	4.0	1.3	15.3	e	10	99.2	274.4		-1	28
2010	Dec	5	17	50	5.41	-24	15	29.7	2.368720	4.0	1.3	15.0	e	10	99.2	274.1		-1	28
2010	Dec	6	17	53	23.85	-24	16	32.5	2.369389	4.0	1.3	14.8	e	10	99.2	273.9		-2	27

Mars
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Dec	7	17	56	42.56	-24	17	19.6	2.370032	3.9	1.3	14.5e	10		99.3	273.6	-2	27
2010	Dec	8	18	0	1.53	-24	17	50.8	2.370649	3.9	1.3	14.3e	10		99.3	273.4	-2	27
2010	Dec	9	18	3	20.74	-24	18	6.0	2.371240	3.9	1.3	14.0e	10		99.3	273.1	-3	26
2010	Dec	10	18	6	40.17	-24	18	5.2	2.371807	3.9	1.3	13.7e	9		99.3	272.9	-3	26
2010	Dec	11	18	9	59.79	-24	17	48.4	2.372348	3.9	1.3	13.5e	9		99.4	272.7	-3	25
2010	Dec	12	18	13	19.60	-24	17	15.5	2.372865	3.9	1.3	13.2e	9		99.4	272.4	-4	25
2010	Dec	13	18	16	39.58	-24	16	26.4	2.373359	3.9	1.3	13.0e	9		99.4	272.2	-4	25
2010	Dec	14	18	19	59.72	-24	15	21.1	2.373829	3.9	1.3	12.7e	9		99.4	272.0	-4	24
2010	Dec	15	18	23	19.99	-24	13	59.7	2.374277	3.9	1.3	12.5e	9		99.4	271.8	-5	24
2010	Dec	16	18	26	40.38	-24	12	22.0	2.374703	3.9	1.3	12.2e	8		99.5	271.6	-5	23
2010	Dec	17	18	30	0.88	-24	10	28.0	2.375107	3.9	1.3	12.0e	8		99.5	271.3	-5	23
2010	Dec	18	18	33	21.46	-24	8	17.8	2.375491	3.9	1.3	11.7e	8		99.5	271.1	-6	23
2010	Dec	19	18	36	42.13	-24	5	51.4	2.375854	3.9	1.3	11.5e	8		99.5	270.9	-6	22
2010	Dec	20	18	40	2.85	-24	3	8.6	2.376198	3.9	1.3	11.2e	8		99.5	270.7	-6	22
2010	Dec	21	18	43	23.62	-24	0	9.7	2.376523	3.9	1.2	11.0e	8		99.6	270.6	-7	21
2010	Dec	22	18	46	44.42	-23	56	54.5	2.376829	3.9	1.2	10.7e	7		99.6	270.4	-7	21
2010	Dec	23	18	50	5.24	-23	53	23.1	2.377116	3.9	1.2	10.5e	7		99.6	270.2	-7	21
2010	Dec	24	18	53	26.04	-23	49	35.5	2.377386	3.9	1.2	10.2e	7		99.6	270.0	-8	20
2010	Dec	25	18	56	46.84	-23	45	31.6	2.377637	3.9	1.2	10.0e	7		99.6	269.9	-8	20
2010	Dec	26	19	0	7.60	-23	41	11.6	2.377871	3.9	1.2	9.7e	7		99.7	269.7	-8	19
2010	Dec	27	19	3	28.31	-23	36	35.4	2.378088	3.9	1.2	9.5e	7		99.7	269.6	-9	19
2010	Dec	28	19	6	48.97	-23	31	43.0	2.378287	3.9	1.2	9.2e	6		99.7	269.4	-9	18
2010	Dec	29	19	10	9.56	-23	26	34.6	2.378468	3.9	1.2	9.0e	6		99.7	269.3	-9	18
2010	Dec	30	19	13	30.07	-23	21	10.1	2.378631	3.9	1.2	8.7e	6		99.7	269.2	-10	17
2010	Dec	31	19	16	50.48	-23	15	29.6	2.378777	3.9	1.2	8.5e	6		99.7	269.1	-10	17

http://digilander.libero.it/occultazioni

Jupiter
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Jan	1	21	55	41.11	-13	36	32.6	5.637000	34.9	-2.0	45.9e	8	99.5	251.0	0	338
2010	Jan	2	21	56	28.15	-13	32	20.6	5.648131	34.9	-2.0	45.1e	8	99.5	251.0	0	338
2010	Jan	3	21	57	15.48	-13	28	6.6	5.659108	34.8	-2.0	44.3e	8	99.5	250.9	1	338
2010	Jan	4	21	58	3.09	-13	23	50.5	5.669928	34.7	-1.9	43.5e	8	99.5	250.9	1	338
2010	Jan	5	21	58	50.98	-13	19	32.4	5.680590	34.7	-1.9	42.7e	8	99.6	250.9	1	338
2010	Jan	6	21	59	39.15	-13	15	12.2	5.691092	34.6	-1.9	41.9e	8	99.6	250.9	1	338
2010	Jan	7	22	0	27.59	-13	10	49.9	5.701431	34.5	-1.9	41.1e	7	99.6	250.9	1	338
2010	Jan	8	22	1	16.29	-13	6	25.6	5.711606	34.5	-1.9	40.3e	7	99.6	250.9	1	338
2010	Jan	9	22	2	5.26	-13	1	59.3	5.721615	34.4	-1.9	39.5e	7	99.6	250.9	1	338
2010	Jan	10	22	2	54.48	-12	57	31.1	5.731454	34.4	-1.9	38.6e	7	99.6	250.9	1	338
2010	Jan	11	22	3	43.96	-12	53	0.9	5.741124	34.3	-1.9	37.8e	7	99.6	250.8	1	337
2010	Jan	12	22	4	33.67	-12	48	28.8	5.750620	34.2	-1.9	37.0e	7	99.6	250.8	1	337
2010	Jan	13	22	5	23.62	-12	43	54.8	5.759942	34.2	-1.9	36.2e	7	99.7	250.8	1	337
2010	Jan	14	22	6	13.80	-12	39	19.0	5.769088	34.1	-1.9	35.4e	7	99.7	250.8	1	337
2010	Jan	15	22	7	4.20	-12	34	41.5	5.778056	34.1	-1.9	34.6e	6	99.7	250.8	1	337
2010	Jan	16	22	7	54.81	-12	30	2.1	5.786843	34.0	-1.9	33.8e	6	99.7	250.8	1	337
2010	Jan	17	22	8	45.62	-12	25	21.1	5.795450	34.0	-1.9	33.0e	6	99.7	250.8	1	337
2010	Jan	18	22	9	36.63	-12	20	38.4	5.803873	33.9	-1.9	32.2e	6	99.7	250.8	1	337
2010	Jan	19	22	10	27.83	-12	15	54.0	5.812113	33.9	-1.9	31.5e	6	99.7	250.8	1	337
2010	Jan	20	22	11	19.22	-12	11	8.0	5.820166	33.8	-1.9	30.7e	6	99.7	250.8	1	337
2010	Jan	21	22	12	10.79	-12	6	20.3	5.828033	33.8	-1.9	29.9e	6	99.8	250.8	1	337
2010	Jan	22	22	13	2.53	-12	1	31.1	5.835712	33.7	-1.9	29.1e	5	99.8	250.9	1	337
2010	Jan	23	22	13	54.44	-11	56	40.4	5.843201	33.7	-1.9	28.3e	5	99.8	250.9	1	337
2010	Jan	24	22	14	46.51	-11	51	48.1	5.850501	33.7	-1.9	27.5e	5	99.8	250.9	1	337
2010	Jan	25	22	15	38.75	-11	46	54.3	5.857610	33.6	-1.9	26.7e	5	99.8	250.9	1	337
2010	Jan	26	22	16	31.13	-11	41	59.1	5.864527	33.6	-1.9	25.9e	5	99.8	250.9	1	337
2010	Jan	27	22	17	23.66	-11	37	2.5	5.871251	33.5	-1.9	25.1e	5	99.8	251.0	1	337
2010	Jan	28	22	18	16.33	-11	32	4.5	5.877783	33.5	-1.9	24.3e	5	99.8	251.0	1	337
2010	Jan	29	22	19	9.13	-11	27	5.2	5.884121	33.5	-1.9	23.6e	5	99.8	251.0	1	337

Jupiter
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Jan	30	22	20	2.05	-11	22	4.6	5.890265	33.4	-1.9	22.8e	4	99.9	251.1	1	337
2010	Jan	31	22	20	55.09	-11	17	2.7	5.896215	33.4	-1.9	22.0e	4	99.9	251.1	1	337
2010	Feb	1	22	21	48.25	-11	11	59.5	5.901969	33.4	-1.9	21.2e	4	99.9	251.2	1	337
2010	Feb	2	22	22	41.51	-11	6	55.2	5.907526	33.3	-1.9	20.4e	4	99.9	251.2	1	337
2010	Feb	3	22	23	34.88	-11	1	49.5	5.912887	33.3	-1.9	19.7e	4	99.9	251.3	1	336
2010	Feb	4	22	24	28.36	-10	56	42.7	5.918049	33.3	-1.9	18.9e	4	99.9	251.4	1	336
2010	Feb	5	22	25	21.94	-10	51	34.7	5.923012	33.2	-1.9	18.1e	4	99.9	251.5	1	336
2010	Feb	6	22	26	15.61	-10	46	25.5	5.927775	33.2	-1.9	17.3e	3	99.9	251.6	1	336
2010	Feb	7	22	27	9.38	-10	41	15.2	5.932337	33.2	-1.9	16.5e	3	99.9	251.7	1	336
2010	Feb	8	22	28	3.24	-10	36	3.9	5.936697	33.2	-1.9	15.8e	3	99.9	251.8	1	336
2010	Feb	9	22	28	57.17	-10	30	51.5	5.940853	33.2	-1.9	15.0e	3	99.9	251.9	1	336
2010	Feb	10	22	29	51.18	-10	25	38.1	5.944806	33.1	-1.9	14.2e	3	99.9	252.1	1	336
2010	Feb	11	22	30	45.26	-10	20	23.7	5.948553	33.1	-1.9	13.5e	3	99.9	252.3	1	336
2010	Feb	12	22	31	39.39	-10	15	8.5	5.952096	33.1	-1.9	12.7e	2	100.0	252.5	1	336
2010	Feb	13	22	32	33.59	-10	9	52.3	5.955433	33.1	-1.9	11.9e	2	100.0	252.7	1	336
2010	Feb	14	22	33	27.83	-10	4	35.3	5.958563	33.1	-1.9	11.1e	2	100.0	253.0	1	336
2010	Feb	15	22	34	22.11	- 9	59	17.5	5.961486	33.0	-1.9	10.4e	2	100.0	253.3	1	336
2010	Feb	16	22	35	16.44	- 9	53	58.9	5.964201	33.0	-1.9	9.6e	2	100.0	253.7	1	336
2010	Feb	17	22	36	10.80	- 9	48	39.6	5.966709	33.0	-1.9	8.8e	2	100.0	254.2	1	336
2010	Feb	18	22	37	5.19	- 9	43	19.5	5.969010	33.0	-1.9	8.1e	2	100.0	254.7	1	336
2010	Feb	19	22	37	59.60	- 9	37	58.8	5.971102	33.0	-1.9	7.3e	1	100.0	255.4	1	336
2010	Feb	20	22	38	54.04	- 9	32	37.4	5.972986	33.0	-1.9	6.6e	1	100.0	256.2	1	336
2010	Feb	21	22	39	48.49	- 9	27	15.4	5.974663	33.0	-1.9	5.8e	1	100.0	257.2	1	336
2010	Feb	22	22	40	42.96	- 9	21	52.8	5.976132	33.0	-1.9	5.0e	1	100.0	258.6	1	336
2010	Feb	23	22	41	37.43	- 9	16	29.7	5.977393	32.9	-1.9	4.3e	1	100.0	260.5	1	336
2010	Feb	24	22	42	31.91	- 9	11	6.1	5.978448	32.9	-1.9	3.5e	1	100.0	263.1	1	336
2010	Feb	25	22	43	26.38	- 9	5	42.0	5.979295	32.9	-1.9	2.8e	1	100.0	267.2	1	336
2010	Feb	26	22	44	20.83	- 9	0	17.5	5.979936	32.9	-1.9	2.1e	0	100.0	274.1	1	336

Jupiter
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Feb	27	22	45	15.27	- 8	54	52.7	5.980372	32.9	-1.9	1.5e	0	100.0	287.3	1	336
2010	Feb	28	22	46	9.69	- 8	49	27.5	5.980601	32.9	-1.9	1.0e	0	100.0	316.2	1	336
2010	Mar	1	22	47	4.08	- 8	44	2.0	5.980626	32.9	-1.9	1.0w	0	100.0	0.6	1	336
2010	Mar	2	22	47	58.44	- 8	38	36.1	5.980445	32.9	-1.9	1.5w	0	100.0	28.8	1	336
2010	Mar	3	22	48	52.78	- 8	33	10.0	5.980059	32.9	-1.9	2.1w	0	100.0	41.7	1	336
2010	Mar	4	22	49	47.09	- 8	27	43.5	5.979468	32.9	-1.9	2.8w	1	100.0	48.4	1	335
2010	Mar	5	22	50	41.36	- 8	22	16.8	5.978671	32.9	-1.9	3.6w	1	100.0	52.4	1	335
2010	Mar	6	22	51	35.60	- 8	16	49.9	5.977670	32.9	-1.9	4.3w	1	100.0	55.1	1	335
2010	Mar	7	22	52	29.79	- 8	11	22.9	5.976463	33.0	-1.9	5.0w	1	100.0	56.9	1	335
2010	Mar	8	22	53	23.94	- 8	5	55.7	5.975050	33.0	-1.9	5.8w	1	100.0	58.3	1	335
2010	Mar	9	22	54	18.03	- 8	0	28.4	5.973432	33.0	-1.9	6.5w	1	100.0	59.3	1	335
2010	Mar	10	22	55	12.07	- 7	55	1.1	5.971610	33.0	-1.9	7.3w	1	100.0	60.2	1	335
2010	Mar	11	22	56	6.04	- 7	49	33.8	5.969582	33.0	-1.9	8.0w	2	100.0	60.8	1	335
2010	Mar	12	22	56	59.94	- 7	44	6.5	5.967349	33.0	-1.9	8.8w	2	100.0	61.4	1	335
2010	Mar	13	22	57	53.77	- 7	38	39.4	5.964912	33.0	-1.9	9.6w	2	100.0	61.8	1	335
2010	Mar	14	22	58	47.52	- 7	33	12.3	5.962271	33.0	-1.9	10.3w	2	100.0	62.2	1	335
2010	Mar	15	22	59	41.18	- 7	27	45.4	5.959426	33.0	-1.9	11.1w	2	100.0	62.6	1	335
2010	Mar	16	23	0	34.76	- 7	22	18.6	5.956378	33.1	-1.9	11.8w	2	100.0	62.8	1	335
2010	Mar	17	23	1	28.24	- 7	16	52.1	5.953128	33.1	-1.9	12.6w	2	100.0	63.1	1	335
2010	Mar	18	23	2	21.63	- 7	11	25.9	5.949676	33.1	-1.9	13.3w	3	99.9	63.3	1	335
2010	Mar	19	23	3	14.92	- 7	5	59.9	5.946023	33.1	-1.9	14.1w	3	99.9	63.5	1	335
2010	Mar	20	23	4	8.11	- 7	0	34.3	5.942170	33.1	-1.9	14.8w	3	99.9	63.7	1	335
2010	Mar	21	23	5	1.19	- 6	55	9.0	5.938118	33.2	-1.9	15.6w	3	99.9	63.8	1	335
2010	Mar	22	23	5	54.15	- 6	49	44.2	5.933868	33.2	-1.9	16.4w	3	99.9	64.0	1	335
2010	Mar	23	23	6	47.00	- 6	44	19.8	5.929422	33.2	-1.9	17.1w	3	99.9	64.1	1	335
2010	Mar	24	23	7	39.72	- 6	38	55.9	5.924779	33.2	-1.9	17.9w	4	99.9	64.2	1	335
2010	Mar	25	23	8	32.31	- 6	33	32.5	5.919943	33.3	-1.9	18.6w	4	99.9	64.3	1	335
2010	Mar	26	23	9	24.77	- 6	28	9.7	5.914913	33.3	-1.9	19.4w	4	99.9	64.4	1	335

Jupiter
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Mar	27	23	10	17.08	- 6	22	47.5	5.909691	33.3	-1.9	20.1	w	4	99.9	64.5	1	335
2010	Mar	28	23	11	9.25	- 6	17	26.0	5.904279	33.4	-1.9	20.9	w	4	99.9	64.6	1	335
2010	Mar	29	23	12	1.28	- 6	12	5.1	5.898677	33.4	-1.9	21.6	w	4	99.9	64.7	1	335
2010	Mar	30	23	12	53.15	- 6	6	45.0	5.892887	33.4	-1.9	22.4	w	4	99.9	64.7	1	335
2010	Mar	31	23	13	44.88	- 6	1	25.5	5.886908	33.5	-1.9	23.1	w	5	99.8	64.8	1	335
2010	Apr	1	23	14	36.46	- 5	56	6.7	5.880743	33.5	-1.9	23.9	w	5	99.8	64.8	1	335
2010	Apr	2	23	15	27.88	- 5	50	48.7	5.874391	33.5	-1.9	24.7	w	5	99.8	64.9	1	335
2010	Apr	3	23	16	19.14	- 5	45	31.5	5.867854	33.6	-1.9	25.4	w	5	99.8	64.9	1	335
2010	Apr	4	23	17	10.24	- 5	40	15.1	5.861133	33.6	-1.9	26.2	w	5	99.8	65.0	1	335
2010	Apr	5	23	18	1.17	- 5	34	59.6	5.854227	33.6	-1.9	26.9	w	5	99.8	65.0	1	335
2010	Apr	6	23	18	51.93	- 5	29	45.1	5.847139	33.7	-1.9	27.7	w	5	99.8	65.1	1	335
2010	Apr	7	23	19	42.50	- 5	24	31.5	5.839868	33.7	-1.9	28.4	w	5	99.8	65.1	1	335
2010	Apr	8	23	20	32.89	- 5	19	19.0	5.832416	33.8	-1.9	29.2	w	6	99.8	65.2	1	335
2010	Apr	9	23	21	23.09	- 5	14	7.5	5.824785	33.8	-1.9	30.0	w	6	99.7	65.2	1	335
2010	Apr	10	23	22	13.09	- 5	8	57.1	5.816974	33.9	-1.9	30.7	w	6	99.7	65.2	1	335
2010	Apr	11	23	23	2.89	- 5	3	47.9	5.808986	33.9	-1.9	31.5	w	6	99.7	65.3	1	335
2010	Apr	12	23	23	52.49	- 4	58	39.8	5.800821	34.0	-1.9	32.2	w	6	99.7	65.3	1	335
2010	Apr	13	23	24	41.88	- 4	53	33.0	5.792481	34.0	-1.9	33.0	w	6	99.7	65.3	1	335
2010	Apr	14	23	25	31.05	- 4	48	27.4	5.783967	34.0	-1.9	33.7	w	6	99.7	65.3	1	335
2010	Apr	15	23	26	20.01	- 4	43	23.1	5.775281	34.1	-1.9	34.5	w	7	99.7	65.4	1	335
2010	Apr	16	23	27	8.74	- 4	38	20.1	5.766425	34.2	-1.9	35.3	w	7	99.7	65.4	1	335
2010	Apr	17	23	27	57.25	- 4	33	18.5	5.757400	34.2	-1.9	36.0	w	7	99.6	65.4	2	335
2010	Apr	18	23	28	45.53	- 4	28	18.3	5.748208	34.3	-1.9	36.8	w	7	99.6	65.4	2	335
2010	Apr	19	23	29	33.57	- 4	23	19.5	5.738850	34.3	-1.9	37.5	w	7	99.6	65.5	2	335
2010	Apr	20	23	30	21.37	- 4	18	22.3	5.729329	34.4	-1.9	38.3	w	7	99.6	65.5	2	335
2010	Apr	21	23	31	8.91	- 4	13	26.5	5.719647	34.4	-1.9	39.1	w	7	99.6	65.5	2	335
2010	Apr	22	23	31	56.20	- 4	8	32.4	5.709806	34.5	-1.9	39.8	w	7	99.6	65.5	2	335
2010	Apr	23	23	32	43.23	- 4	3	39.9	5.699808	34.6	-1.9	40.6	w	8	99.6	65.5	2	335
2010	Apr	24	23	33	30.00	- 3	58	49.1	5.689654	34.6	-2.0	41.4	w	8	99.6	65.6	2	335

Jupiter
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Apr	25	23	34	16.49	- 3	54	0.0	5.679346	34.7	-2.0	42.1	w	8	99.5	65.6	2	335
2010	Apr	26	23	35	2.72	- 3	49	12.6	5.668887	34.7	-2.0	42.9	w	8	99.5	65.6	2	335
2010	Apr	27	23	35	48.67	- 3	44	26.9	5.658278	34.8	-2.0	43.7	w	8	99.5	65.6	2	335
2010	Apr	28	23	36	34.34	- 3	39	42.9	5.647521	34.9	-2.0	44.4	w	8	99.5	65.6	2	335
2010	Apr	29	23	37	19.74	- 3	35	0.8	5.636617	34.9	-2.0	45.2	w	8	99.5	65.6	2	335
2010	Apr	30	23	38	4.86	- 3	30	20.4	5.625568	35.0	-2.0	46.0	w	8	99.5	65.7	2	335
2010	May	1	23	38	49.69	- 3	25	41.9	5.614375	35.1	-2.0	46.7	w	8	99.5	65.7	2	335
2010	May	2	23	39	34.22	- 3	21	5.4	5.603040	35.1	-2.0	47.5	w	9	99.4	65.7	2	335
2010	May	3	23	40	18.45	- 3	16	30.8	5.591564	35.2	-2.0	48.3	w	9	99.4	65.7	2	335
2010	May	4	23	41	2.38	- 3	11	58.2	5.579949	35.3	-2.0	49.0	w	9	99.4	65.7	2	335
2010	May	5	23	41	45.99	- 3	7	27.6	5.568197	35.4	-2.0	49.8	w	9	99.4	65.7	2	335
2010	May	6	23	42	29.29	- 3	2	59.2	5.556309	35.4	-2.0	50.6	w	9	99.4	65.8	2	335
2010	May	7	23	43	12.26	- 2	58	32.9	5.544288	35.5	-2.0	51.4	w	9	99.4	65.8	2	334
2010	May	8	23	43	54.90	- 2	54	8.8	5.532134	35.6	-2.0	52.1	w	9	99.4	65.8	2	334
2010	May	9	23	44	37.21	- 2	49	46.9	5.519851	35.7	-2.0	52.9	w	9	99.3	65.8	2	334
2010	May	10	23	45	19.18	- 2	45	27.2	5.507440	35.8	-2.0	53.7	w	9	99.3	65.8	2	334
2010	May	11	23	46	0.80	- 2	41	9.9	5.494902	35.8	-2.0	54.5	w	10	99.3	65.8	2	334
2010	May	12	23	46	42.08	- 2	36	54.9	5.482242	35.9	-2.0	55.2	w	10	99.3	65.9	2	334
2010	May	13	23	47	23.00	- 2	32	42.3	5.469460	36.0	-2.0	56.0	w	10	99.3	65.9	2	334
2010	May	14	23	48	3.56	- 2	28	32.1	5.456559	36.1	-2.0	56.8	w	10	99.3	65.9	2	334
2010	May	15	23	48	43.76	- 2	24	24.3	5.443541	36.2	-2.0	57.6	w	10	99.3	65.9	2	334
2010	May	16	23	49	23.58	- 2	20	19.1	5.430410	36.3	-2.0	58.4	w	10	99.2	65.9	2	334
2010	May	17	23	50	3.02	- 2	16	16.4	5.417167	36.4	-2.0	59.2	w	10	99.2	65.9	2	334
2010	May	18	23	50	42.08	- 2	12	16.3	5.403816	36.4	-2.1	60.0	w	10	99.2	65.9	2	334
2010	May	19	23	51	20.74	- 2	8	18.9	5.390359	36.5	-2.1	60.7	w	10	99.2	66.0	2	334
2010	May	20	23	51	59.00	- 2	4	24.2	5.376799	36.6	-2.1	61.5	w	10	99.2	66.0	2	334
2010	May	21	23	52	36.85	- 2	0	32.2	5.363139	36.7	-2.1	62.3	w	10	99.2	66.0	2	334
2010	May	22	23	53	14.30	- 1	56	43.0	5.349382	36.8	-2.1	63.1	w	10	99.2	66.0	2	334

Jupiter
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	May	23	23	53	51.33	- 1	52	56.5	5.335529	36.9	-2.1	63.9w	11	99.2	66.0	2	334
2010	May	24	23	54	27.94	- 1	49	12.9	5.321584	37.0	-2.1	64.7w	11	99.1	66.0	2	334
2010	May	25	23	55	4.13	- 1	45	32.1	5.307550	37.1	-2.1	65.5w	11	99.1	66.1	2	334
2010	May	26	23	55	39.90	- 1	41	54.2	5.293427	37.2	-2.1	66.3w	11	99.1	66.1	2	334
2010	May	27	23	56	15.25	- 1	38	19.2	5.279220	37.3	-2.1	67.1w	11	99.1	66.1	2	334
2010	May	28	23	56	50.15	- 1	34	47.1	5.264929	37.4	-2.1	67.9w	11	99.1	66.1	2	334
2010	May	29	23	57	24.62	- 1	31	18.0	5.250558	37.5	-2.1	68.7w	11	99.1	66.1	2	334
2010	May	30	23	57	58.64	- 1	27	51.9	5.236109	37.6	-2.1	69.5w	11	99.1	66.1	2	334
2010	May	31	23	58	32.21	- 1	24	28.9	5.221584	37.7	-2.1	70.3w	11	99.1	66.1	2	334
2010	Jun	1	23	59	5.31	- 1	21	9.1	5.206985	37.8	-2.1	71.1w	11	99.1	66.2	2	334
2010	Jun	2	23	59	37.95	- 1	17	52.4	5.192315	37.9	-2.1	72.0w	11	99.1	66.2	2	334
2010	Jun	3	0	0	10.10	- 1	14	39.0	5.177577	38.0	-2.1	72.8w	11	99.0	66.2	2	334
2010	Jun	4	0	0	41.78	- 1	11	28.8	5.162773	38.1	-2.1	73.6w	11	99.0	66.2	2	334
2010	Jun	5	0	1	12.97	- 1	8	21.9	5.147906	38.3	-2.2	74.4w	11	99.0	66.2	2	334
2010	Jun	6	0	1	43.67	- 1	5	18.4	5.132979	38.4	-2.2	75.2w	11	99.0	66.2	2	334
2010	Jun	7	0	2	13.87	- 1	2	18.2	5.117994	38.5	-2.2	76.0w	11	99.0	66.3	2	334
2010	Jun	8	0	2	43.57	- 0	59	21.5	5.102955	38.6	-2.2	76.9w	11	99.0	66.3	2	334
2010	Jun	9	0	3	12.75	- 0	56	28.2	5.087865	38.7	-2.2	77.7w	12	99.0	66.3	2	335
2010	Jun	10	0	3	41.42	- 0	53	38.5	5.072726	38.8	-2.2	78.5w	12	99.0	66.3	2	335
2010	Jun	11	0	4	9.56	- 0	50	52.2	5.057542	38.9	-2.2	79.4w	12	99.0	66.3	2	335
2010	Jun	12	0	4	37.17	- 0	48	9.6	5.042316	39.1	-2.2	80.2w	12	99.0	66.4	2	335
2010	Jun	13	0	5	4.25	- 0	45	30.6	5.027053	39.2	-2.2	81.0w	12	99.0	66.4	2	335
2010	Jun	14	0	5	30.78	- 0	42	55.3	5.011754	39.3	-2.2	81.9w	12	99.0	66.4	2	335
2010	Jun	15	0	5	56.75	- 0	40	23.7	4.996425	39.4	-2.2	82.7w	12	99.0	66.4	2	335
2010	Jun	16	0	6	22.17	- 0	37	55.9	4.981068	39.5	-2.2	83.5w	12	99.0	66.4	2	335
2010	Jun	17	0	6	47.01	- 0	35	32.0	4.965688	39.7	-2.2	84.4w	12	99.0	66.4	2	335
2010	Jun	18	0	7	11.28	- 0	33	11.8	4.950287	39.8	-2.2	85.2w	12	99.0	66.5	2	335
2010	Jun	19	0	7	34.98	- 0	30	55.6	4.934870	39.9	-2.2	86.1w	12	98.9	66.5	2	335

Jupiter
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Jun	20	0	7	58.09	- 0	28	43.2	4.919440	40.0	-2.2	86.9	w	12	98.9	66.5	2	335
2010	Jun	21	0	8	20.63	- 0	26	34.7	4.903999	40.2	-2.3	87.8	w	12	98.9	66.5	2	335
2010	Jun	22	0	8	42.58	- 0	24	30.1	4.888553	40.3	-2.3	88.6	w	12	98.9	66.5	2	335
2010	Jun	23	0	9	3.93	- 0	22	29.5	4.873102	40.4	-2.3	89.5	w	12	98.9	66.6	2	335
2010	Jun	24	0	9	24.69	- 0	20	32.8	4.857652	40.5	-2.3	90.4	w	12	98.9	66.6	2	335
2010	Jun	25	0	9	44.85	- 0	18	40.2	4.842205	40.7	-2.3	91.2	w	12	98.9	66.6	2	335
2010	Jun	26	0	10	4.40	- 0	16	51.7	4.826764	40.8	-2.3	92.1	w	12	98.9	66.6	2	335
2010	Jun	27	0	10	23.33	- 0	15	7.2	4.811333	40.9	-2.3	93.0	w	12	98.9	66.6	2	335
2010	Jun	28	0	10	41.64	- 0	13	26.9	4.795914	41.1	-2.3	93.8	w	12	98.9	66.7	2	335
2010	Jun	29	0	10	59.32	- 0	11	50.8	4.780512	41.2	-2.3	94.7	w	12	98.9	66.7	2	335
2010	Jun	30	0	11	16.37	- 0	10	18.9	4.765129	41.3	-2.3	95.6	w	12	99.0	66.7	2	335
2010	Jul	1	0	11	32.77	- 0	8	51.3	4.749770	41.5	-2.3	96.5	w	12	99.0	66.7	2	335
2010	Jul	2	0	11	48.53	- 0	7	27.9	4.734436	41.6	-2.3	97.4	w	12	99.0	66.8	2	335
2010	Jul	3	0	12	3.64	- 0	6	8.9	4.719134	41.7	-2.3	98.2	w	12	99.0	66.8	2	335
2010	Jul	4	0	12	18.09	- 0	4	54.2	4.703864	41.9	-2.3	99.1	w	12	99.0	66.8	2	335
2010	Jul	5	0	12	31.88	- 0	3	43.9	4.688633	42.0	-2.4	100.0	w	12	99.0	66.8	2	335
2010	Jul	6	0	12	45.01	- 0	2	38.0	4.673443	42.1	-2.4	100.9	w	12	99.0	66.8	2	335
2010	Jul	7	0	12	57.46	- 0	1	36.6	4.658299	42.3	-2.4	101.8	w	12	99.0	66.9	2	335
2010	Jul	8	0	13	9.24	- 0	0	39.5	4.643204	42.4	-2.4	102.7	w	12	99.0	66.9	2	335
2010	Jul	9	0	13	20.35	0	0	13.0	4.628164	42.6	-2.4	103.6	w	11	99.0	66.9	2	335
2010	Jul	10	0	13	30.76	0	1	1.0	4.613181	42.7	-2.4	104.5	w	11	99.0	66.9	2	335
2010	Jul	11	0	13	40.48	0	1	44.5	4.598261	42.8	-2.4	105.4	w	11	99.0	67.0	2	335
2010	Jul	12	0	13	49.50	0	2	23.4	4.583407	43.0	-2.4	106.4	w	11	99.0	67.0	2	335
2010	Jul	13	0	13	57.82	0	2	57.8	4.568625	43.1	-2.4	107.3	w	11	99.0	67.0	2	335
2010	Jul	14	0	14	5.43	0	3	27.4	4.553919	43.2	-2.4	108.2	w	11	99.0	67.0	2	335
2010	Jul	15	0	14	12.33	0	3	52.5	4.539294	43.4	-2.4	109.1	w	11	99.1	67.1	2	335
2010	Jul	16	0	14	18.52	0	4	12.9	4.524753	43.5	-2.4	110.0	w	11	99.1	67.1	2	335
2010	Jul	17	0	14	24.00	0	4	28.7	4.510301	43.7	-2.4	111.0	w	11	99.1	67.1	2	335
2010	Jul	18	0	14	28.76	0	4	39.9	4.495942	43.8	-2.5	111.9	w	11	99.1	67.2	2	335

Jupiter
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Jul	19	0	14	32.82	0	4	46.5	4.481681	43.9	-2.5	112.9w	11	99.1	67.2	2	335
2010	Jul	20	0	14	36.16	0	4	48.5	4.467521	44.1	-2.5	113.8w	11	99.1	67.2	2	335
2010	Jul	21	0	14	38.79	0	4	45.8	4.453466	44.2	-2.5	114.7w	11	99.1	67.2	2	335
2010	Jul	22	0	14	40.70	0	4	38.6	4.439521	44.4	-2.5	115.7w	11	99.1	67.3	2	335
2010	Jul	23	0	14	41.90	0	4	26.7	4.425688	44.5	-2.5	116.6w	11	99.2	67.3	2	335
2010	Jul	24	0	14	42.38	0	4	10.3	4.411973	44.6	-2.5	117.6w	10	99.2	67.3	2	335
2010	Jul	25	0	14	42.13	0	3	49.1	4.398378	44.8	-2.5	118.5w	10	99.2	67.4	2	335
2010	Jul	26	0	14	41.16	0	3	23.4	4.384908	44.9	-2.5	119.5w	10	99.2	67.4	2	335
2010	Jul	27	0	14	39.47	0	2	53.0	4.371568	45.1	-2.5	120.5w	10	99.2	67.4	2	335
2010	Jul	28	0	14	37.06	0	2	17.9	4.358360	45.2	-2.5	121.4w	10	99.2	67.5	2	335
2010	Jul	29	0	14	33.92	0	1	38.3	4.345289	45.3	-2.5	122.4w	10	99.2	67.5	2	335
2010	Jul	30	0	14	30.06	0	0	54.0	4.332360	45.5	-2.5	123.4w	10	99.3	67.5	2	335
2010	Jul	31	0	14	25.48	0	0	5.1	4.319576	45.6	-2.5	124.4w	10	99.3	67.6	2	335
2010	Aug	1	0	14	20.18	- 0	0	48.4	4.306941	45.7	-2.6	125.3w	10	99.3	67.6	2	335
2010	Aug	2	0	14	14.16	- 0	1	46.5	4.294461	45.9	-2.6	126.3w	9	99.3	67.7	2	335
2010	Aug	3	0	14	7.42	- 0	2	49.1	4.282138	46.0	-2.6	127.3w	9	99.3	67.7	2	335
2010	Aug	4	0	13	59.97	- 0	3	56.2	4.269979	46.1	-2.6	128.3w	9	99.4	67.7	2	335
2010	Aug	5	0	13	51.81	- 0	5	7.8	4.257986	46.3	-2.6	129.3w	9	99.4	67.8	2	335
2010	Aug	6	0	13	42.94	- 0	6	23.8	4.246166	46.4	-2.6	130.3w	9	99.4	67.8	2	335
2010	Aug	7	0	13	33.37	- 0	7	44.3	4.234521	46.5	-2.6	131.3w	9	99.4	67.9	2	335
2010	Aug	8	0	13	23.09	- 0	9	9.3	4.223057	46.6	-2.6	132.3w	9	99.4	67.9	2	335
2010	Aug	9	0	13	12.11	- 0	10	38.6	4.211779	46.8	-2.6	133.3w	9	99.4	68.0	2	335
2010	Aug	10	0	13	0.43	- 0	12	12.2	4.200692	46.9	-2.6	134.3w	8	99.5	68.0	2	335
2010	Aug	11	0	12	48.06	- 0	13	50.2	4.189799	47.0	-2.6	135.4w	8	99.5	68.1	2	335
2010	Aug	12	0	12	35.00	- 0	15	32.4	4.179105	47.1	-2.6	136.4w	8	99.5	68.2	2	335
2010	Aug	13	0	12	21.28	- 0	17	18.7	4.168615	47.2	-2.6	137.4w	8	99.5	68.2	2	335
2010	Aug	14	0	12	6.89	- 0	19	9.2	4.158332	47.4	-2.6	138.4w	8	99.5	68.3	2	335
2010	Aug	15	0	11	51.84	- 0	21	3.6	4.148261	47.5	-2.6	139.5w	8	99.6	68.3	2	335
2010	Aug	16	0	11	36.16	- 0	23	2.0	4.138405	47.6	-2.7	140.5w	7	99.6	68.4	2	335

Jupiter
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Aug	17	0	11	19.85	- 0	25	4.2	4.128769	47.7	-2.7	141.5	w	7	99.6	68.5	2	335
2010	Aug	18	0	11	2.91	- 0	27	10.2	4.119355	47.8	-2.7	142.6	w	7	99.6	68.6	2	335
2010	Aug	19	0	10	45.36	- 0	29	19.9	4.110167	47.9	-2.7	143.6	w	7	99.6	68.6	2	335
2010	Aug	20	0	10	27.21	- 0	31	33.3	4.101208	48.0	-2.7	144.7	w	7	99.7	68.7	2	335
2010	Aug	21	0	10	8.46	- 0	33	50.2	4.092483	48.1	-2.7	145.7	w	7	99.7	68.8	2	335
2010	Aug	22	0	9	49.13	- 0	36	10.7	4.083994	48.2	-2.7	146.8	w	6	99.7	68.9	2	335
2010	Aug	23	0	9	29.22	- 0	38	34.6	4.075744	48.3	-2.7	147.8	w	6	99.7	69.0	2	335
2010	Aug	24	0	9	8.76	- 0	41	1.8	4.067737	48.4	-2.7	148.9	w	6	99.7	69.1	2	335
2010	Aug	25	0	8	47.74	- 0	43	32.3	4.059976	48.5	-2.7	149.9	w	6	99.7	69.2	2	335
2010	Aug	26	0	8	26.19	- 0	46	5.9	4.052465	48.6	-2.7	151.0	w	6	99.8	69.4	2	335
2010	Aug	27	0	8	4.12	- 0	48	42.6	4.045206	48.7	-2.7	152.1	w	5	99.8	69.5	2	335
2010	Aug	28	0	7	41.54	- 0	51	22.3	4.038202	48.8	-2.7	153.1	w	5	99.8	69.6	2	335
2010	Aug	29	0	7	18.47	- 0	54	4.8	4.031458	48.9	-2.7	154.2	w	5	99.8	69.8	2	335
2010	Aug	30	0	6	54.92	- 0	56	50.1	4.024975	48.9	-2.7	155.3	w	5	99.8	69.9	2	335
2010	Aug	31	0	6	30.91	- 0	59	38.0	4.018757	49.0	-2.7	156.3	w	5	99.8	70.1	2	335
2010	Sep	1	0	6	6.45	- 1	2	28.5	4.012807	49.1	-2.7	157.4	w	4	99.8	70.3	2	335
2010	Sep	2	0	5	41.56	- 1	5	21.3	4.007129	49.1	-2.7	158.5	w	4	99.9	70.5	2	335
2010	Sep	3	0	5	16.26	- 1	8	16.5	4.001724	49.2	-2.7	159.6	w	4	99.9	70.8	2	335
2010	Sep	4	0	4	50.55	- 1	11	13.8	3.996597	49.3	-2.7	160.7	w	4	99.9	71.0	2	335
2010	Sep	5	0	4	24.47	- 1	14	13.3	3.991749	49.3	-2.7	161.7	w	4	99.9	71.3	2	335
2010	Sep	6	0	3	58.01	- 1	17	14.7	3.987185	49.4	-2.8	162.8	w	3	99.9	71.7	2	334
2010	Sep	7	0	3	31.21	- 1	20	17.9	3.982905	49.4	-2.8	163.9	w	3	99.9	72.0	2	334
2010	Sep	8	0	3	4.09	- 1	23	22.8	3.978914	49.5	-2.8	165.0	w	3	99.9	72.5	2	334
2010	Sep	9	0	2	36.65	- 1	26	29.2	3.975212	49.5	-2.8	166.1	w	3	99.9	73.0	2	334
2010	Sep	10	0	2	8.94	- 1	29	37.0	3.971803	49.6	-2.8	167.2	w	3	99.9	73.5	2	334
2010	Sep	11	0	1	40.96	- 1	32	46.0	3.968688	49.6	-2.8	168.3	w	2	100.0	74.2	2	334
2010	Sep	12	0	1	12.76	- 1	35	56.0	3.965868	49.7	-2.8	169.4	w	2	100.0	75.0	2	334
2010	Sep	13	0	0	44.34	- 1	39	6.9	3.963344	49.7	-2.8	170.5	w	2	100.0	76.0	2	334

Jupiter
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Sep	14	0	0	15.73	- 1	42	18.6	3.961118	49.7	-2.8	171.5	w	2	100.0	77.3	2	334
2010	Sep	15	23	59	46.95	- 1	45	30.9	3.959191	49.7	-2.8	172.6	w	1	100.0	78.9	2	334
2010	Sep	16	23	59	18.02	- 1	48	43.7	3.957563	49.8	-2.8	173.7	w	1	100.0	81.1	2	334
2010	Sep	17	23	58	48.96	- 1	51	56.8	3.956234	49.8	-2.8	174.8	w	1	100.0	84.2	2	334
2010	Sep	18	23	58	19.80	- 1	55	10.2	3.955207	49.8	-2.8	175.8	w	1	100.0	88.9	2	334
2010	Sep	19	23	57	50.54	- 1	58	23.6	3.954479	49.8	-2.8	176.8	w	1	100.0	96.4	2	334
2010	Sep	20	23	57	21.23	- 2	1	36.9	3.954054	49.8	-2.8	177.7	w	0	100.0	110.4	2	334
2010	Sep	21	23	56	51.87	- 2	4	50.0	3.953929	49.8	-2.8	178.3	w	0	100.0	137.4	2	334
2010	Sep	22	23	56	22.48	- 2	8	2.7	3.954106	49.8	-2.8	178.3	w	0	100.0	175.8	2	334
2010	Sep	23	23	55	53.10	- 2	11	15.0	3.954584	49.8	-2.8	177.7	e	0	100.0	202.8	2	334
2010	Sep	24	23	55	23.75	- 2	14	26.5	3.955364	49.8	-2.8	176.8	e	1	100.0	216.7	2	334
2010	Sep	25	23	54	54.43	- 2	17	37.3	3.956445	49.8	-2.8	175.8	e	1	100.0	224.3	2	334
2010	Sep	26	23	54	25.19	- 2	20	47.1	3.957828	49.8	-2.8	174.7	e	1	100.0	228.9	2	334
2010	Sep	27	23	53	56.04	- 2	23	55.9	3.959511	49.7	-2.8	173.7	e	1	100.0	232.0	2	334
2010	Sep	28	23	53	27.00	- 2	27	3.4	3.961495	49.7	-2.8	172.6	e	1	100.0	234.2	2	334
2010	Sep	29	23	52	58.09	- 2	30	9.5	3.963779	49.7	-2.8	171.5	e	2	100.0	235.8	2	334
2010	Sep	30	23	52	29.34	- 2	33	14.1	3.966362	49.7	-2.8	170.4	e	2	100.0	237.1	2	334
2010	Oct	1	23	52	0.76	- 2	36	17.1	3.969245	49.6	-2.8	169.3	e	2	100.0	238.1	2	334
2010	Oct	2	23	51	32.38	- 2	39	18.3	3.972426	49.6	-2.8	168.2	e	2	100.0	238.9	2	334
2010	Oct	3	23	51	4.21	- 2	42	17.6	3.975904	49.5	-2.8	167.1	e	3	99.9	239.6	2	334
2010	Oct	4	23	50	36.28	- 2	45	14.9	3.979679	49.5	-2.8	166.0	e	3	99.9	240.2	2	334
2010	Oct	5	23	50	8.61	- 2	48	10.0	3.983749	49.4	-2.8	164.9	e	3	99.9	240.7	2	334
2010	Oct	6	23	49	41.22	- 2	51	2.8	3.988114	49.4	-2.8	163.8	e	3	99.9	241.1	2	334
2010	Oct	7	23	49	14.13	- 2	53	53.1	3.992770	49.3	-2.8	162.7	e	3	99.9	241.5	2	334
2010	Oct	8	23	48	47.37	- 2	56	40.8	3.997717	49.3	-2.7	161.6	e	4	99.9	241.8	2	334
2010	Oct	9	23	48	20.96	- 2	59	25.7	4.002952	49.2	-2.7	160.5	e	4	99.9	242.1	2	334
2010	Oct	10	23	47	54.93	- 3	2	7.7	4.008474	49.1	-2.7	159.4	e	4	99.9	242.4	2	334
2010	Oct	11	23	47	29.29	- 3	4	46.7	4.014278	49.1	-2.7	158.3	e	4	99.9	242.6	2	334
2010	Oct	12	23	47	4.06	- 3	7	22.6	4.020363	49.0	-2.7	157.2	e	4	99.8	242.8	2	334

Jupiter
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb		De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o		o	o
2010	Oct	13	23	46	39.26	- 3	9	55.2	4.026726	48.9	-2.7	156.1	e	5	99.8	243.0		2	334
2010	Oct	14	23	46	14.91	- 3	12	24.5	4.033363	48.8	-2.7	155.0	e	5	99.8	243.2		2	334
2010	Oct	15	23	45	51.02	- 3	14	50.4	4.040272	48.7	-2.7	153.9	e	5	99.8	243.4		2	334
2010	Oct	16	23	45	27.60	- 3	17	12.7	4.047449	48.7	-2.7	152.8	e	5	99.8	243.5		2	334
2010	Oct	17	23	45	4.68	- 3	19	31.5	4.054891	48.6	-2.7	151.7	e	5	99.8	243.7		2	334
2010	Oct	18	23	44	42.28	- 3	21	46.6	4.062595	48.5	-2.7	150.6	e	6	99.8	243.8		2	334
2010	Oct	19	23	44	20.39	- 3	23	57.8	4.070557	48.4	-2.7	149.5	e	6	99.7	244.0		2	334
2010	Oct	20	23	43	59.05	- 3	26	5.2	4.078775	48.3	-2.7	148.4	e	6	99.7	244.1		2	334
2010	Oct	21	23	43	38.26	- 3	28	8.7	4.087244	48.2	-2.7	147.4	e	6	99.7	244.2		2	334
2010	Oct	22	23	43	18.04	- 3	30	8.1	4.095962	48.1	-2.7	146.3	e	6	99.7	244.3		2	334
2010	Oct	23	23	42	58.41	- 3	32	3.3	4.104925	48.0	-2.7	145.2	e	7	99.7	244.4		2	334
2010	Oct	24	23	42	39.37	- 3	33	54.4	4.114129	47.9	-2.7	144.1	e	7	99.7	244.5		2	334
2010	Oct	25	23	42	20.94	- 3	35	41.2	4.123571	47.8	-2.7	143.0	e	7	99.6	244.6		2	334
2010	Oct	26	23	42	3.13	- 3	37	23.7	4.133248	47.6	-2.7	142.0	e	7	99.6	244.7		2	334
2010	Oct	27	23	41	45.95	- 3	39	1.8	4.143155	47.5	-2.7	140.9	e	7	99.6	244.7		2	334
2010	Oct	28	23	41	29.41	- 3	40	35.5	4.153290	47.4	-2.6	139.8	e	7	99.6	244.8		2	334
2010	Oct	29	23	41	13.52	- 3	42	4.7	4.163649	47.3	-2.6	138.8	e	8	99.6	244.9		2	335
2010	Oct	30	23	40	58.29	- 3	43	29.3	4.174228	47.2	-2.6	137.7	e	8	99.5	245.0		2	335
2010	Oct	31	23	40	43.73	- 3	44	49.4	4.185024	47.1	-2.6	136.6	e	8	99.5	245.0		2	335
2010	Nov	1	23	40	29.84	- 3	46	4.8	4.196031	46.9	-2.6	135.6	e	8	99.5	245.1		2	335
2010	Nov	2	23	40	16.64	- 3	47	15.6	4.207248	46.8	-2.6	134.5	e	8	99.5	245.2		2	335
2010	Nov	3	23	40	4.13	- 3	48	21.6	4.218669	46.7	-2.6	133.5	e	8	99.5	245.2		2	335
2010	Nov	4	23	39	52.34	- 3	49	22.8	4.230291	46.6	-2.6	132.4	e	9	99.5	245.3		2	335
2010	Nov	5	23	39	41.26	- 3	50	19.1	4.242108	46.4	-2.6	131.4	e	9	99.4	245.3		2	335
2010	Nov	6	23	39	30.91	- 3	51	10.5	4.254116	46.3	-2.6	130.3	e	9	99.4	245.4		2	335
2010	Nov	7	23	39	21.29	- 3	51	57.0	4.266311	46.2	-2.6	129.3	e	9	99.4	245.4		2	335
2010	Nov	8	23	39	12.42	- 3	52	38.5	4.278688	46.0	-2.6	128.2	e	9	99.4	245.5		2	335
2010	Nov	9	23	39	4.29	- 3	53	15.0	4.291241	45.9	-2.6	127.2	e	9	99.4	245.5		2	335
2010	Nov	10	23	38	56.90	- 3	53	46.5	4.303966	45.8	-2.6	126.1	e	9	99.3	245.6		2	335

Jupiter
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Nov	11	23	38	50.27	- 3	54	13.1	4.316859	45.6	-2.6	125.1e	9	99.3	245.6	2	335
2010	Nov	12	23	38	44.38	- 3	54	34.7	4.329913	45.5	-2.5	124.1e	10	99.3	245.7	2	335
2010	Nov	13	23	38	39.25	- 3	54	51.3	4.343124	45.3	-2.5	123.1e	10	99.3	245.7	2	335
2010	Nov	14	23	38	34.88	- 3	55	2.9	4.356487	45.2	-2.5	122.0e	10	99.3	245.7	2	335
2010	Nov	15	23	38	31.26	- 3	55	9.4	4.369998	45.1	-2.5	121.0e	10	99.3	245.8	2	335
2010	Nov	16	23	38	28.41	- 3	55	11.0	4.383651	44.9	-2.5	120.0e	10	99.2	245.8	2	335
2010	Nov	17	23	38	26.31	- 3	55	7.6	4.397443	44.8	-2.5	119.0e	10	99.2	245.9	2	335
2010	Nov	18	23	38	24.98	- 3	54	59.3	4.411368	44.6	-2.5	118.0e	10	99.2	245.9	2	335
2010	Nov	19	23	38	24.41	- 3	54	45.9	4.425421	44.5	-2.5	117.0e	10	99.2	245.9	2	335
2010	Nov	20	23	38	24.60	- 3	54	27.5	4.439599	44.4	-2.5	116.0e	10	99.2	246.0	2	335
2010	Nov	21	23	38	25.55	- 3	54	4.2	4.453896	44.2	-2.5	115.0e	10	99.2	246.0	2	335
2010	Nov	22	23	38	27.27	- 3	53	35.9	4.468309	44.1	-2.5	114.0e	11	99.2	246.0	2	335
2010	Nov	23	23	38	29.75	- 3	53	2.6	4.482832	43.9	-2.5	113.0e	11	99.1	246.1	2	335
2010	Nov	24	23	38	32.98	- 3	52	24.4	4.497462	43.8	-2.5	112.0e	11	99.1	246.1	2	335
2010	Nov	25	23	38	36.97	- 3	51	41.4	4.512195	43.6	-2.5	111.0e	11	99.1	246.1	2	335
2010	Nov	26	23	38	41.70	- 3	50	53.5	4.527025	43.5	-2.4	110.0e	11	99.1	246.1	2	335
2010	Nov	27	23	38	47.19	- 3	50	0.7	4.541949	43.4	-2.4	109.0e	11	99.1	246.2	2	335
2010	Nov	28	23	38	53.42	- 3	49	3.1	4.556963	43.2	-2.4	108.0e	11	99.1	246.2	2	335
2010	Nov	29	23	39	0.40	- 3	48	0.7	4.572061	43.1	-2.4	107.0e	11	99.1	246.2	2	335
2010	Nov	30	23	39	8.11	- 3	46	53.5	4.587241	42.9	-2.4	106.1e	11	99.1	246.3	2	335
2010	Dec	1	23	39	16.57	- 3	45	41.4	4.602496	42.8	-2.4	105.1e	11	99.1	246.3	2	335
2010	Dec	2	23	39	25.78	- 3	44	24.6	4.617823	42.6	-2.4	104.1e	11	99.1	246.3	2	335
2010	Dec	3	23	39	35.72	- 3	43	3.0	4.633218	42.5	-2.4	103.2e	11	99.1	246.3	2	335
2010	Dec	4	23	39	46.40	- 3	41	36.7	4.648674	42.4	-2.4	102.2e	11	99.0	246.4	2	335
2010	Dec	5	23	39	57.82	- 3	40	5.6	4.664187	42.2	-2.4	101.2e	11	99.0	246.4	2	335
2010	Dec	6	23	40	9.96	- 3	38	29.8	4.679753	42.1	-2.4	100.3e	11	99.0	246.4	2	335
2010	Dec	7	23	40	22.83	- 3	36	49.4	4.695367	41.9	-2.4	99.3e	11	99.0	246.4	2	335
2010	Dec	8	23	40	36.42	- 3	35	4.4	4.711023	41.8	-2.4	98.4e	11	99.0	246.4	2	335

Jupiter
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Dec	9	23	40	50.71	- 3	33	14.9	4.726718	41.7	-2.3	97.4e	11	99.0	246.5	2	335
2010	Dec	10	23	41	5.71	- 3	31	20.9	4.742446	41.5	-2.3	96.5e	11	99.0	246.5	2	335
2010	Dec	11	23	41	21.41	- 3	29	22.4	4.758203	41.4	-2.3	95.5e	11	99.0	246.5	2	335
2010	Dec	12	23	41	37.81	- 3	27	19.5	4.773984	41.3	-2.3	94.6e	11	99.0	246.5	2	335
2010	Dec	13	23	41	54.89	- 3	25	12.2	4.789786	41.1	-2.3	93.7e	11	99.0	246.5	2	334
2010	Dec	14	23	42	12.65	- 3	23	0.5	4.805603	41.0	-2.3	92.7e	11	99.0	246.6	2	334
2010	Dec	15	23	42	31.08	- 3	20	44.6	4.821431	40.8	-2.3	91.8e	11	99.0	246.6	2	334
2010	Dec	16	23	42	50.19	- 3	18	24.4	4.837267	40.7	-2.3	90.9e	11	99.0	246.6	2	334
2010	Dec	17	23	43	9.95	- 3	16	0.0	4.853106	40.6	-2.3	89.9e	11	99.0	246.6	2	334
2010	Dec	18	23	43	30.38	- 3	13	31.4	4.868945	40.4	-2.3	89.0e	11	99.0	246.6	2	334
2010	Dec	19	23	43	51.46	- 3	10	58.7	4.884779	40.3	-2.3	88.1e	11	99.0	246.7	2	334
2010	Dec	20	23	44	13.18	- 3	8	21.9	4.900605	40.2	-2.3	87.2e	11	99.0	246.7	2	334
2010	Dec	21	23	44	35.53	- 3	5	41.1	4.916419	40.1	-2.3	86.3e	11	99.0	246.7	2	334
2010	Dec	22	23	44	58.51	- 3	2	56.3	4.932218	39.9	-2.3	85.4e	11	99.0	246.7	2	334
2010	Dec	23	23	45	22.11	- 3	0	7.6	4.947997	39.8	-2.2	84.4e	11	99.0	246.7	2	334
2010	Dec	24	23	45	46.33	- 2	57	14.9	4.963755	39.7	-2.2	83.5e	11	99.0	246.8	2	334
2010	Dec	25	23	46	11.14	- 2	54	18.5	4.979486	39.6	-2.2	82.6e	11	99.0	246.8	2	334
2010	Dec	26	23	46	36.55	- 2	51	18.3	4.995188	39.4	-2.2	81.7e	11	99.0	246.8	2	334
2010	Dec	27	23	47	2.56	- 2	48	14.3	5.010857	39.3	-2.2	80.8e	11	99.0	246.8	2	334
2010	Dec	28	23	47	29.15	- 2	45	6.5	5.026490	39.2	-2.2	79.9e	11	99.0	246.8	2	334
2010	Dec	29	23	47	56.33	- 2	41	55.1	5.042083	39.1	-2.2	79.0e	11	99.0	246.8	2	334
2010	Dec	30	23	48	24.09	- 2	38	40.0	5.057632	38.9	-2.2	78.2e	11	99.0	246.9	2	334
2010	Dec	31	23	48	52.43	- 2	35	21.2	5.073133	38.8	-2.2	77.3e	11	99.1	246.9	2	334

Central Meridian of Jupiter, System I, 2010

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	260.2	106.9	201.0	49.1	100.9	312.4	8.4	224.8	83.5	144.6	1.4	56.7
2	57.8	264.5	358.7	206.8	258.6	110.2	166.3	22.8	241.6	302.6	159.3	214.4
3	215.4	62.2	156.3	4.5	56.4	268.0	324.2	180.8	39.6	100.6	317.2	12.2
4	13.1	219.8	314.0	162.2	214.2	65.9	122.1	338.8	197.7	258.6	115.1	170.0
5	170.7	17.5	111.7	319.9	11.9	223.7	280.0	136.8	355.7	56.6	273.0	327.7
6	328.4	175.1	269.3	117.6	169.7	21.6	77.9	294.8	153.7	214.6	70.9	125.5
7	126.0	332.7	67.0	275.3	327.5	179.4	235.9	92.8	311.8	12.6	228.8	283.3
8	283.6	130.4	224.7	73.0	125.2	337.2	33.8	250.8	109.8	170.6	26.7	81.0
9	81.3	288.0	22.3	230.7	283.0	135.1	191.7	48.8	267.9	328.6	184.5	238.8
10	238.9	85.7	180.0	28.4	80.8	292.9	349.7	206.9	65.9	126.6	342.4	36.5
11	36.5	243.3	337.7	186.1	238.5	90.8	147.6	4.9	224.0	284.6	140.3	194.3
12	194.2	41.0	135.3	343.9	36.3	248.6	305.5	162.9	22.0	82.6	298.1	352.0
13	351.8	198.6	293.0	141.6	194.1	46.5	103.5	320.9	180.1	240.6	96.0	149.8
14	149.5	356.2	90.7	299.3	351.9	204.4	261.4	118.9	338.1	38.5	253.8	307.5
15	307.1	153.9	248.4	97.0	149.7	2.2	59.3	276.9	136.1	196.5	51.7	105.2
16	104.7	311.5	46.0	254.8	307.5	160.1	217.3	75.0	294.2	354.5	209.5	263.0
17	262.4	109.2	203.7	52.5	105.3	317.9	15.2	233.0	92.2	152.4	7.4	60.7
18	60.0	266.8	1.4	210.2	263.0	115.8	173.2	31.0	250.3	310.4	165.2	218.4
19	217.6	64.5	159.1	7.9	60.8	273.7	331.2	189.0	48.3	108.4	323.0	16.1
20	15.3	222.1	316.8	165.7	218.6	71.6	129.1	347.1	206.3	266.3	120.8	173.9
21	172.9	19.8	114.4	323.4	16.4	229.4	287.1	145.1	4.4	64.3	278.7	331.6
22	330.5	177.4	272.1	121.2	174.2	27.3	85.0	303.1	162.4	222.2	76.5	129.3
23	128.2	335.1	69.8	278.9	332.0	185.2	243.0	101.2	320.4	20.2	234.3	287.0
24	285.8	132.7	227.5	76.6	129.8	343.1	41.0	259.2	118.5	178.1	32.1	84.7
25	83.4	290.4	25.2	234.4	287.7	141.0	199.0	57.2	276.5	336.0	189.9	242.4
26	241.1	88.0	182.9	32.1	85.5	298.9	356.9	215.3	74.5	134.0	347.7	40.1
27	38.7	245.7	340.6	189.9	243.3	96.8	154.9	13.3	232.5	291.9	145.5	197.8
28	196.4	43.4	138.3	347.6	41.1	254.7	312.9	171.4	30.6	89.8	303.3	355.5
29	354.0		296.0	145.4	198.9	52.6	110.9	329.4	188.6	247.7	101.1	153.2
30	151.6		93.7	303.1	356.7	210.5	268.9	127.4	346.6	45.6	258.9	310.9
31	309.3		251.4		154.6		66.8	285.5		203.5		108.6

Motion of the Central Meridian

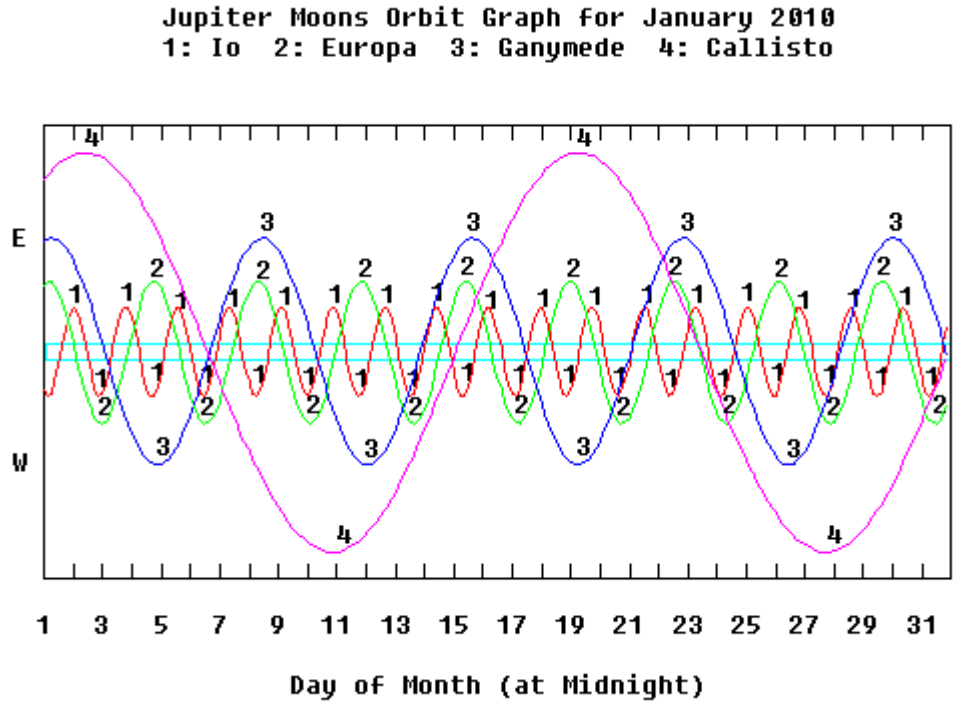
m	0h o	1h o	2h o	3h o	4h o	5h o	6h o	7h o	8h o	9h o	10h o	11h o
0	0.0	36.6	73.2	109.7	146.3	182.9	219.5	256.1	292.6	329.2	5.8	42.4
10	6.1	42.7	79.3	115.8	152.4	189.0	225.6	262.2	298.7	335.3	11.9	48.5
20	12.2	48.8	85.4	121.9	158.5	195.1	231.7	268.2	304.8	341.4	18.0	54.6
30	18.3	54.9	91.4	128.0	164.6	201.2	237.8	274.3	310.9	347.5	24.1	60.7
40	24.4	61.0	97.5	134.1	170.7	207.3	243.9	280.4	317.0	353.6	30.2	66.8
50	30.5	67.1	103.6	140.2	176.8	213.4	250.0	286.5	323.1	359.7	36.3	72.9
60	36.6	73.2	109.7	146.3	182.9	219.5	256.1	292.6	329.2	5.8	42.4	79.0

Central Meridian of Jupiter, System II, 2010

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	88.0	58.3	298.7	270.2	93.2	68.1	255.2	235.1	217.2	49.4	29.7	216.1
2	238.0	208.3	88.8	60.3	243.3	218.3	45.5	25.5	7.7	199.8	180.0	6.2
3	28.1	358.3	238.8	210.4	33.4	8.5	195.7	175.8	158.1	350.2	330.3	156.4
4	178.1	148.3	28.8	0.5	183.5	158.7	346.0	326.2	308.5	140.6	120.5	306.5
5	328.1	298.3	178.9	150.5	333.7	308.9	136.3	116.6	98.9	290.9	270.8	96.6
6	118.1	88.3	328.9	300.6	123.8	99.1	286.6	266.9	249.3	81.3	61.1	246.8
7	268.1	238.3	118.9	90.7	273.9	249.3	76.9	57.3	39.7	231.7	211.3	36.9
8	58.1	28.3	269.0	240.8	64.1	39.5	227.2	207.7	190.1	22.0	1.5	187.0
9	208.1	178.3	59.0	30.9	214.2	189.8	17.5	358.1	340.5	172.4	151.8	337.2
10	358.1	328.4	209.0	180.9	4.4	340.0	167.8	148.4	131.0	322.8	302.0	127.3
11	148.1	118.4	359.1	331.0	154.5	130.2	318.1	298.8	281.4	113.1	92.3	277.4
12	298.1	268.4	149.1	121.1	304.7	280.4	108.4	89.2	71.8	263.5	242.5	67.5
13	88.1	58.4	299.2	271.2	94.8	70.6	258.7	239.6	222.2	53.8	32.7	217.6
14	238.1	208.4	89.2	61.3	245.0	220.9	49.0	30.0	12.6	204.2	182.9	7.7
15	28.2	358.4	239.3	211.4	35.1	11.1	199.3	180.4	163.0	354.5	333.2	157.8
16	178.2	148.4	29.3	1.5	185.3	161.3	349.6	330.8	313.4	144.8	123.4	307.9
17	328.2	298.5	179.4	151.6	335.4	311.6	140.0	121.2	103.8	295.2	273.6	98.0
18	118.2	88.5	329.4	301.7	125.6	101.8	290.3	271.6	254.3	85.5	63.8	248.1
19	268.2	238.5	119.5	91.8	275.8	252.1	80.6	62.0	44.7	235.8	214.0	38.2
20	58.2	28.5	269.5	241.9	65.9	42.3	230.9	212.4	195.1	26.2	4.2	188.3
21	208.2	178.5	59.6	32.0	216.1	192.6	21.3	2.8	345.5	176.5	154.4	338.4
22	358.2	328.6	209.6	182.1	6.3	342.8	171.6	153.2	135.9	326.8	304.6	128.5
23	148.2	118.6	359.7	332.2	156.4	133.1	321.9	303.6	286.3	117.1	94.7	278.6
24	298.2	268.6	149.7	122.3	306.6	283.3	112.3	94.0	76.7	267.4	244.9	68.6
25	88.2	58.6	299.8	272.4	96.8	73.6	262.6	244.4	227.1	57.7	35.1	218.7
26	238.2	208.7	89.8	62.5	247.0	223.8	53.0	34.8	17.5	208.0	185.3	8.8
27	28.2	358.7	239.9	212.7	37.2	14.1	203.3	185.2	167.9	358.3	335.4	158.9
28	178.2	148.7	30.0	2.8	187.3	164.4	353.7	335.6	318.3	148.6	125.6	308.9
29	328.2		180.0	152.9	337.5	314.6	144.0	126.0	108.6	298.9	275.8	99.0
30	118.2		330.1	303.0	127.7	104.9	294.4	276.4	259.0	89.2	65.9	249.1
31	268.3		120.2		277.9		84.7	66.8		239.5		39.1

Motion of the Central Meridian

m	0h o	1h o	2h o	3h o	4h o	5h o	6h o	7h o	8h o	9h o	10h o	11h o
0	0.0	36.3	72.5	108.8	145.0	181.3	217.6	253.8	290.1	326.4	2.6	38.9
10	6.0	42.3	78.6	114.8	151.1	187.3	223.6	259.9	296.1	332.4	8.7	44.9
20	12.1	48.3	84.6	120.9	157.1	193.4	229.7	265.9	302.2	338.4	14.7	51.0
30	18.1	54.4	90.7	126.9	163.2	199.4	235.7	272.0	308.2	344.5	20.7	57.0
40	24.2	60.4	96.7	133.0	169.2	205.5	241.7	278.0	314.3	350.5	26.8	63.0
50	30.2	66.5	102.7	139.0	175.3	211.5	247.8	284.0	320.3	356.6	32.8	69.1
60	36.3	72.5	108.8	145.0	181.3	217.6	253.8	290.1	326.4	2.6	38.9	75.1



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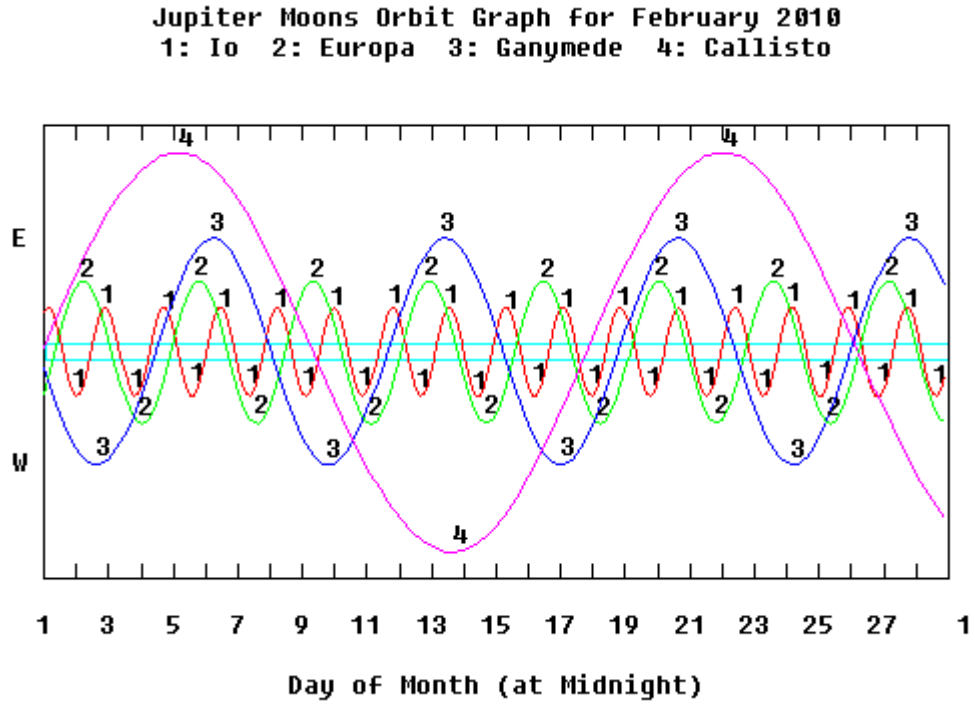

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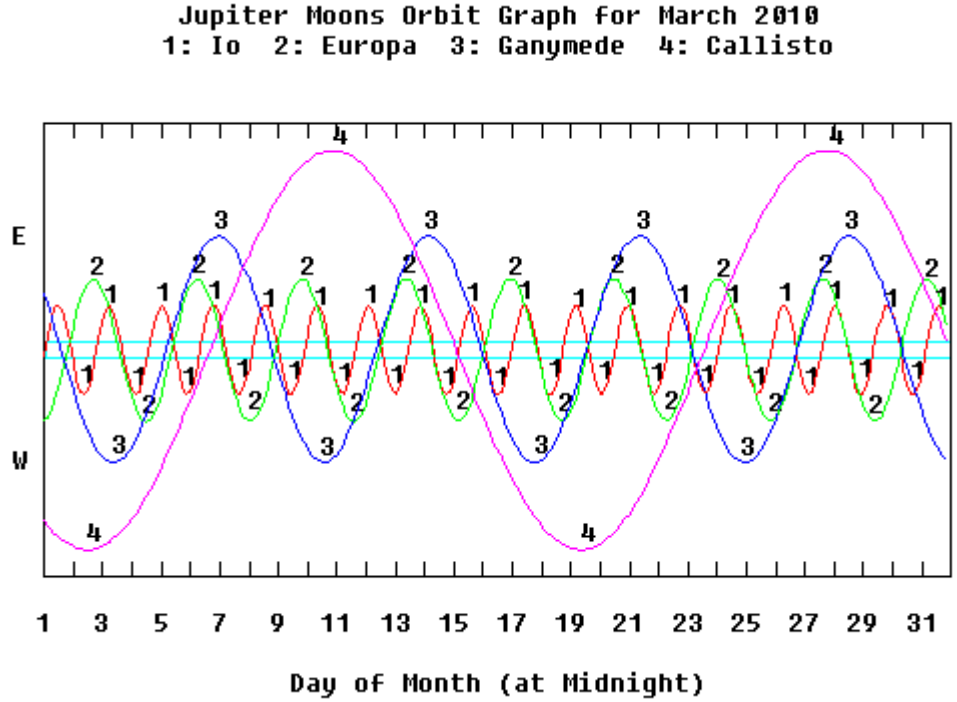

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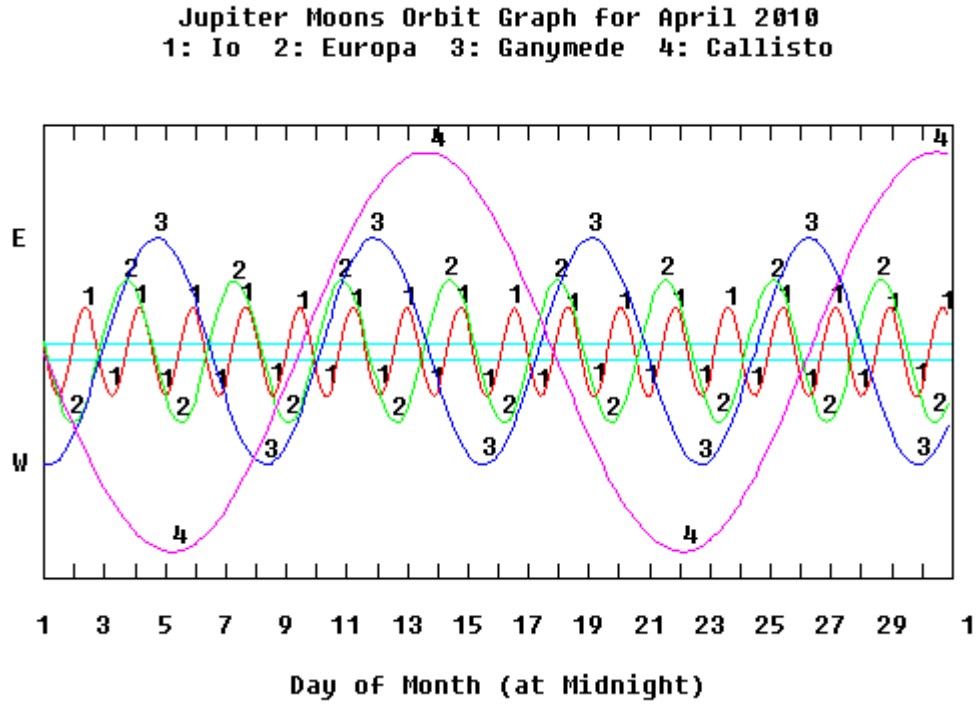

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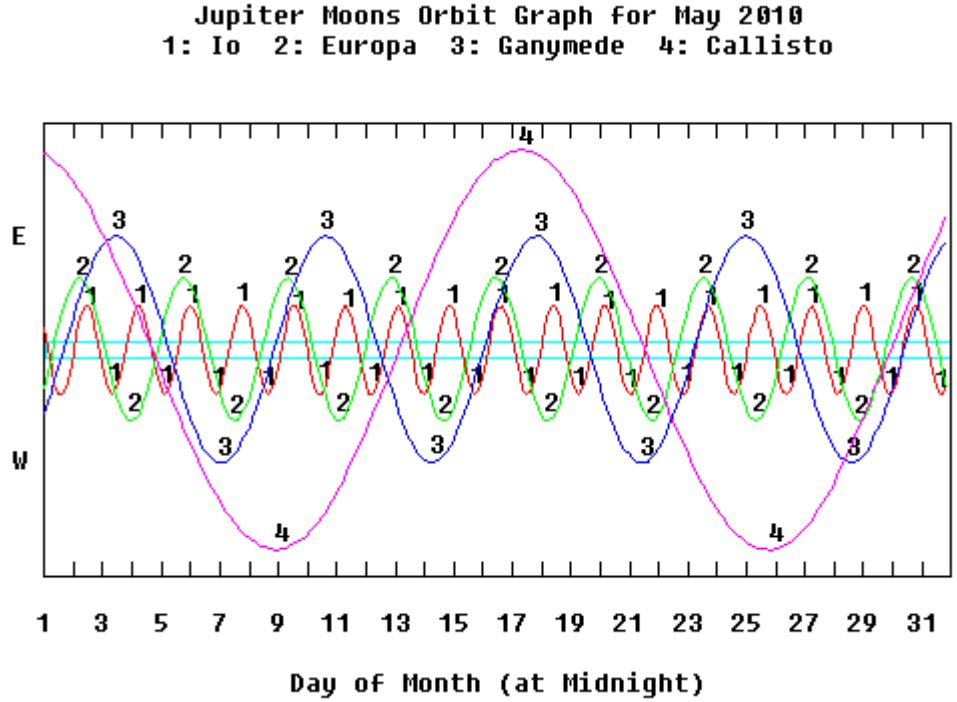

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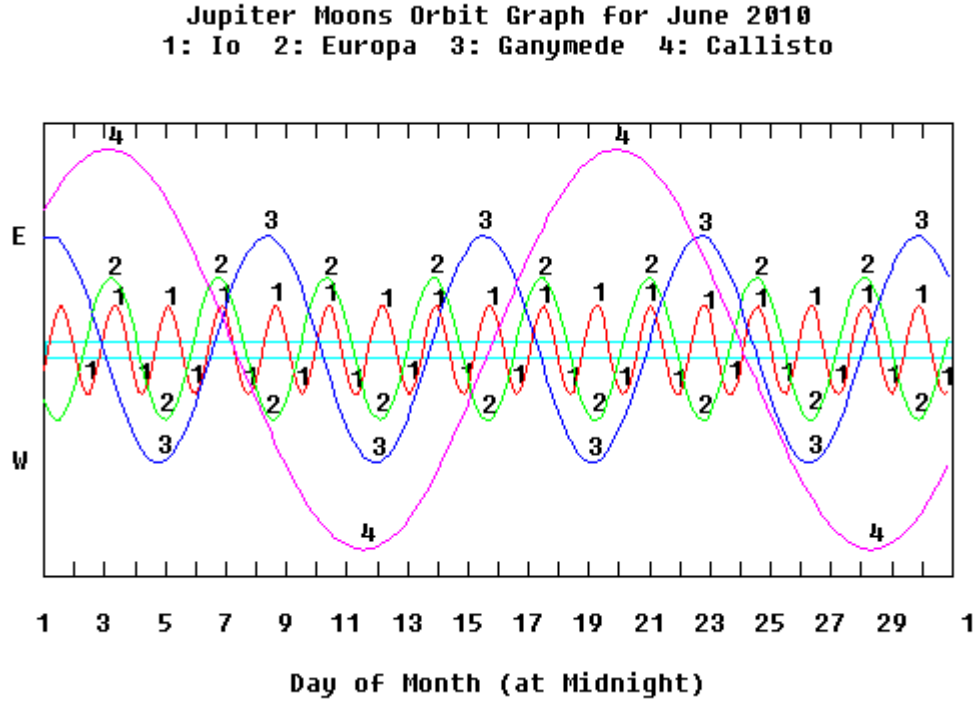

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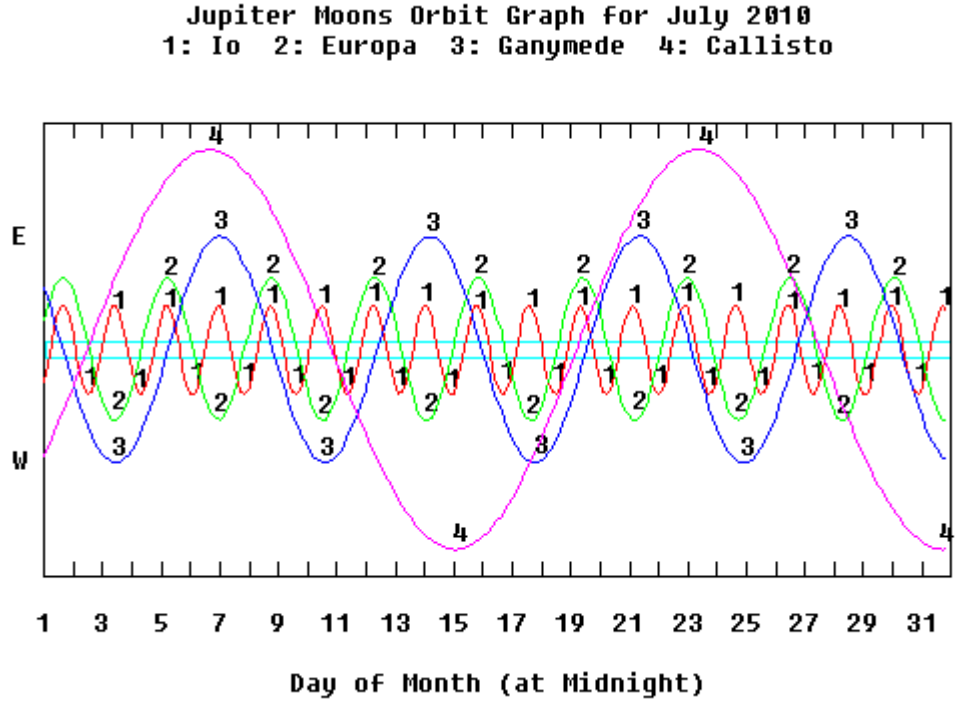

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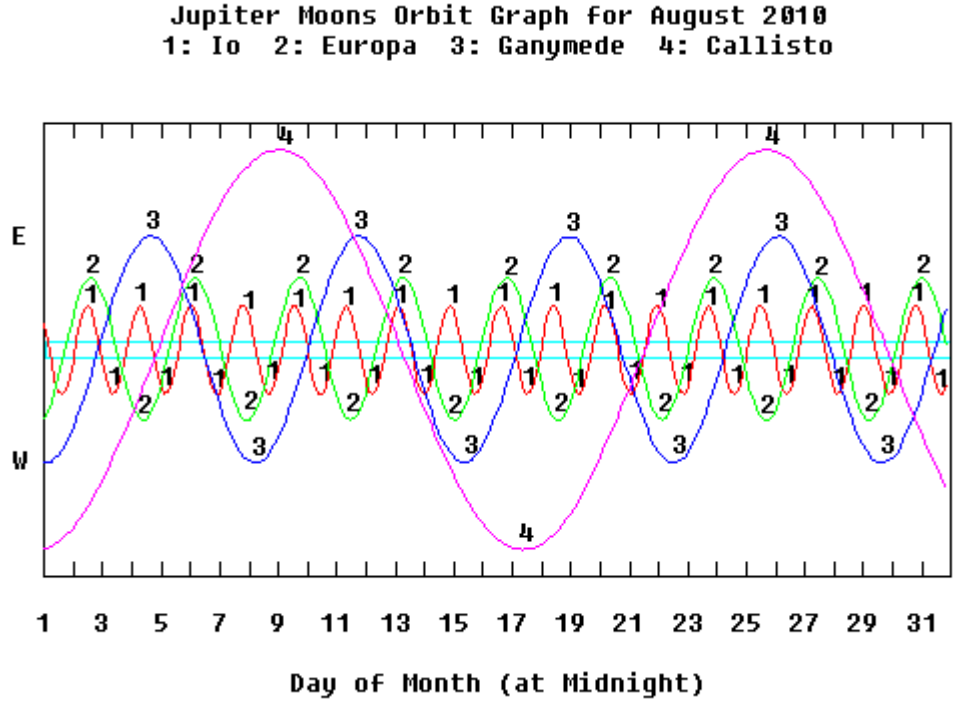

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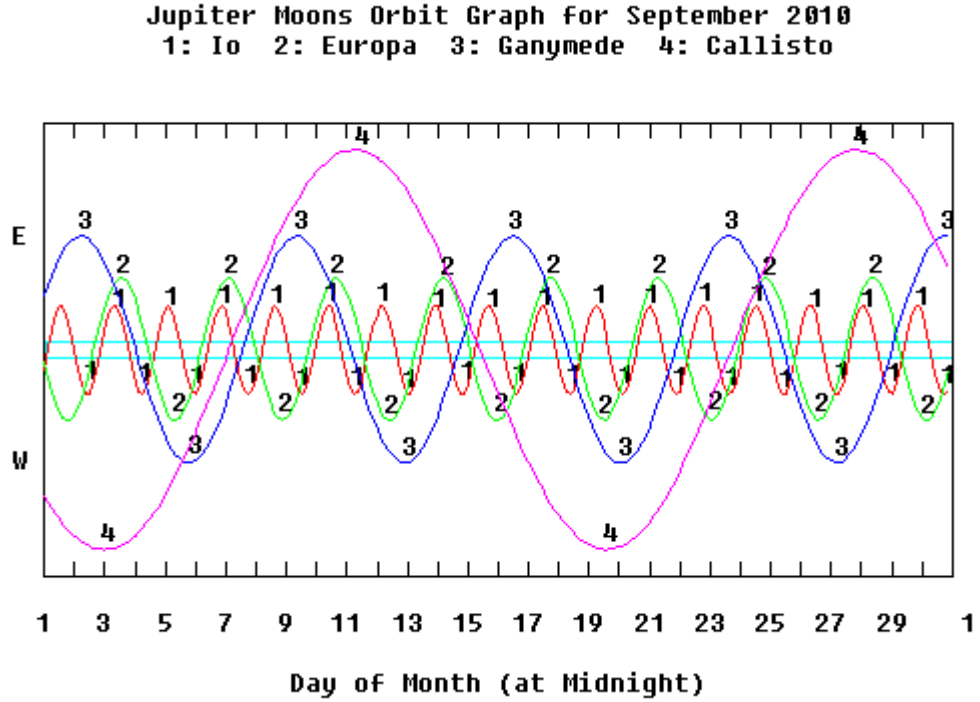

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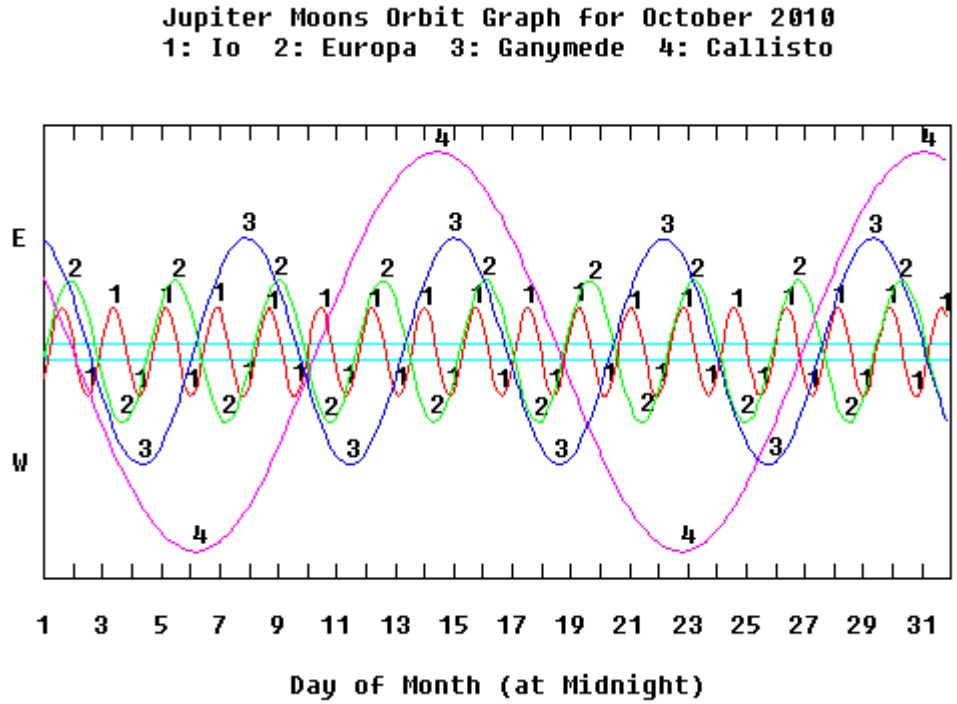

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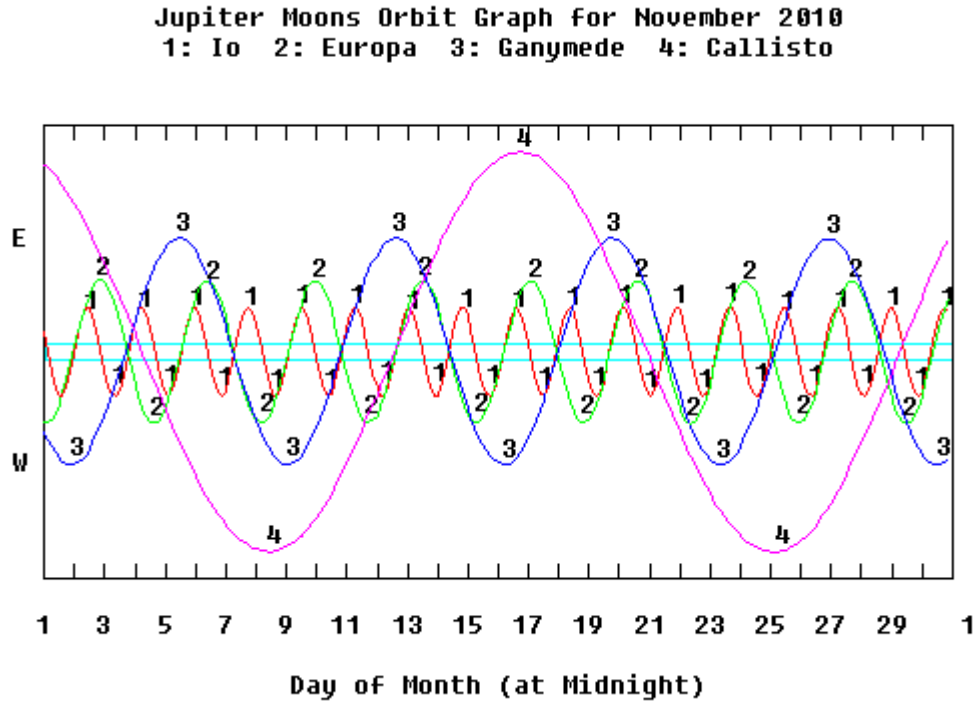

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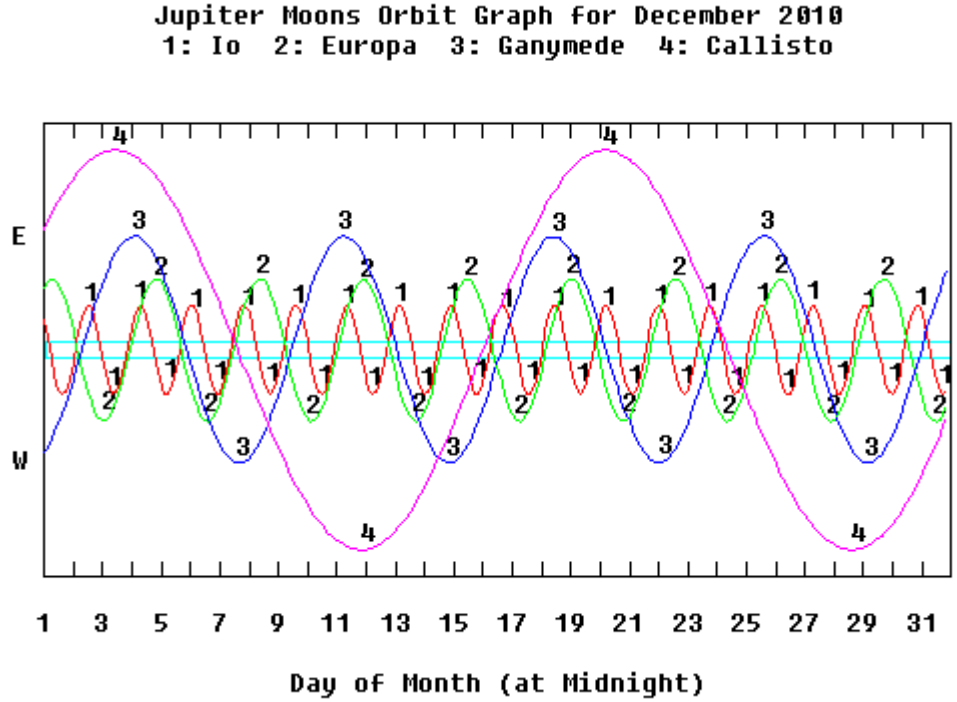

http://digilander.libero.it/occultazioni

Saturn
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb		De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o		o	o
2010	Jan	1	12	20	10.45	0	18	33.1	9.323551	17.9	0.9	95.9	w	6	99.7	113.1		5	356
2010	Jan	2	12	20	15.77	0	18	17.3	9.307066	17.9	0.9	96.9	w	6	99.7	113.1		5	356
2010	Jan	3	12	20	20.69	0	18	4.1	9.290615	17.9	0.9	97.9	w	6	99.7	113.0		5	356
2010	Jan	4	12	20	25.21	0	17	53.5	9.274203	18.0	0.9	98.9	w	6	99.7	113.0		5	356
2010	Jan	5	12	20	29.34	0	17	45.5	9.257834	18.0	0.9	99.9	w	6	99.7	113.0		5	356
2010	Jan	6	12	20	33.06	0	17	40.1	9.241513	18.0	0.9	100.9	w	6	99.7	112.9		5	356
2010	Jan	7	12	20	36.39	0	17	37.4	9.225246	18.1	0.9	101.9	w	6	99.7	112.9		5	356
2010	Jan	8	12	20	39.31	0	17	37.2	9.209038	18.1	0.9	102.9	w	6	99.7	112.8		5	356
2010	Jan	9	12	20	41.84	0	17	39.6	9.192893	18.1	0.9	103.9	w	6	99.7	112.8		5	356
2010	Jan	10	12	20	43.97	0	17	44.6	9.176818	18.2	0.9	104.9	w	6	99.7	112.7		5	356
2010	Jan	11	12	20	45.70	0	17	52.1	9.160817	18.2	0.9	105.9	w	6	99.8	112.7		5	356
2010	Jan	12	12	20	47.03	0	18	2.3	9.144896	18.2	0.8	106.9	w	6	99.8	112.6		5	356
2010	Jan	13	12	20	47.96	0	18	15.0	9.129061	18.3	0.8	108.0	w	6	99.8	112.6		5	356
2010	Jan	14	12	20	48.48	0	18	30.4	9.113317	18.3	0.8	109.0	w	6	99.8	112.5		5	356
2010	Jan	15	12	20	48.59	0	18	48.3	9.097669	18.3	0.8	110.0	w	6	99.8	112.5		5	356
2010	Jan	16	12	20	48.30	0	19	8.8	9.082123	18.4	0.8	111.0	w	6	99.8	112.5		5	356
2010	Jan	17	12	20	47.61	0	19	31.9	9.066684	18.4	0.8	112.0	w	6	99.8	112.4		5	356
2010	Jan	18	12	20	46.51	0	19	57.5	9.051358	18.4	0.8	113.1	w	5	99.8	112.3		5	356
2010	Jan	19	12	20	45.01	0	20	25.7	9.036149	18.4	0.8	114.1	w	5	99.8	112.3		5	356
2010	Jan	20	12	20	43.10	0	20	56.4	9.021064	18.5	0.8	115.1	w	5	99.8	112.2		5	356
2010	Jan	21	12	20	40.80	0	21	29.7	9.006108	18.5	0.8	116.2	w	5	99.8	112.2		5	356
2010	Jan	22	12	20	38.11	0	22	5.3	8.991285	18.5	0.8	117.2	w	5	99.8	112.1		5	356
2010	Jan	23	12	20	35.02	0	22	43.5	8.976600	18.6	0.8	118.2	w	5	99.8	112.1		5	356
2010	Jan	24	12	20	31.54	0	23	24.1	8.962059	18.6	0.8	119.3	w	5	99.8	112.0		5	356
2010	Jan	25	12	20	27.68	0	24	7.0	8.947666	18.6	0.8	120.3	w	5	99.8	112.0		5	356
2010	Jan	26	12	20	23.43	0	24	52.4	8.933427	18.7	0.8	121.3	w	5	99.8	111.9		5	356
2010	Jan	27	12	20	18.80	0	25	40.1	8.919344	18.7	0.8	122.4	w	5	99.8	111.8		5	356
2010	Jan	28	12	20	13.79	0	26	30.1	8.905425	18.7	0.8	123.4	w	5	99.8	111.8		5	356
2010	Jan	29	12	20	8.40	0	27	22.5	8.891671	18.7	0.8	124.4	w	5	99.8	111.7		5	356

Saturn
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb		De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o		o	o
2010	Jan	30	12	20	2.64	0	28	17.2	8.878089	18.8	0.8	125.5	w	5	99.8	111.6		5	356
2010	Jan	31	12	19	56.49	0	29	14.2	8.864681	18.8	0.7	126.5	w	5	99.8	111.6		5	356
2010	Feb	1	12	19	49.97	0	30	13.5	8.851453	18.8	0.7	127.6	w	5	99.8	111.5		5	356
2010	Feb	2	12	19	43.08	0	31	15.0	8.838409	18.9	0.7	128.6	w	5	99.8	111.4		5	356
2010	Feb	3	12	19	35.83	0	32	18.8	8.825553	18.9	0.7	129.7	w	5	99.8	111.3		5	356
2010	Feb	4	12	19	28.21	0	33	24.7	8.812891	18.9	0.7	130.7	w	5	99.8	111.3		5	356
2010	Feb	5	12	19	20.24	0	34	32.8	8.800425	18.9	0.7	131.8	w	4	99.8	111.2		5	356
2010	Feb	6	12	19	11.92	0	35	43.0	8.788162	19.0	0.7	132.8	w	4	99.9	111.1		5	356
2010	Feb	7	12	19	3.25	0	36	55.3	8.776106	19.0	0.7	133.9	w	4	99.9	111.0		5	356
2010	Feb	8	12	18	54.23	0	38	9.6	8.764261	19.0	0.7	134.9	w	4	99.9	110.9		5	356
2010	Feb	9	12	18	44.88	0	39	26.0	8.752632	19.0	0.7	136.0	w	4	99.9	110.8		5	356
2010	Feb	10	12	18	35.18	0	40	44.3	8.741223	19.1	0.7	137.0	w	4	99.9	110.7		4	356
2010	Feb	11	12	18	25.16	0	42	4.6	8.730040	19.1	0.7	138.1	w	4	99.9	110.6		4	356
2010	Feb	12	12	18	14.80	0	43	26.8	8.719086	19.1	0.7	139.1	w	4	99.9	110.5		4	356
2010	Feb	13	12	18	4.12	0	44	50.9	8.708366	19.1	0.7	140.2	w	4	99.9	110.4		4	356
2010	Feb	14	12	17	53.12	0	46	16.8	8.697883	19.2	0.7	141.3	w	4	99.9	110.3		4	356
2010	Feb	15	12	17	41.81	0	47	44.5	8.687643	19.2	0.7	142.3	w	4	99.9	110.2		4	356
2010	Feb	16	12	17	30.20	0	49	13.9	8.677648	19.2	0.7	143.4	w	4	99.9	110.0		4	356
2010	Feb	17	12	17	18.29	0	50	45.0	8.667903	19.2	0.7	144.5	w	3	99.9	109.9		4	356
2010	Feb	18	12	17	6.08	0	52	17.8	8.658411	19.2	0.7	145.5	w	3	99.9	109.7		4	356
2010	Feb	19	12	16	53.60	0	53	52.1	8.649175	19.3	0.7	146.6	w	3	99.9	109.6		4	356
2010	Feb	20	12	16	40.84	0	55	27.9	8.640200	19.3	0.6	147.6	w	3	99.9	109.4		4	356
2010	Feb	21	12	16	27.82	0	57	5.1	8.631488	19.3	0.6	148.7	w	3	99.9	109.3		4	356
2010	Feb	22	12	16	14.54	0	58	43.8	8.623043	19.3	0.6	149.8	w	3	99.9	109.1		4	356
2010	Feb	23	12	16	1.01	1	0	23.8	8.614866	19.3	0.6	150.8	w	3	99.9	108.9		4	356
2010	Feb	24	12	15	47.24	1	2	5.0	8.606962	19.4	0.6	151.9	w	3	99.9	108.7		4	356
2010	Feb	25	12	15	33.23	1	3	47.6	8.599332	19.4	0.6	153.0	w	3	99.9	108.5		4	356
2010	Feb	26	12	15	18.98	1	5	31.3	8.591978	19.4	0.6	154.0	w	3	99.9	108.2		4	356

Saturn
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Feb	27	12	15	4.51	1	7	16.2	8.584904	19.4	0.6	155.1	w	3	100.0	108.0	4	356
2010	Feb	28	12	14	49.82	1	9	2.3	8.578110	19.4	0.6	156.2	w	2	100.0	107.7	4	356
2010	Mar	1	12	14	34.92	1	10	49.4	8.571600	19.4	0.6	157.2	w	2	100.0	107.4	4	356
2010	Mar	2	12	14	19.82	1	12	37.5	8.565376	19.5	0.6	158.3	w	2	100.0	107.0	4	356
2010	Mar	3	12	14	4.52	1	14	26.5	8.559439	19.5	0.6	159.4	w	2	100.0	106.7	4	356
2010	Mar	4	12	13	49.04	1	16	16.5	8.553793	19.5	0.6	160.4	w	2	100.0	106.3	4	356
2010	Mar	5	12	13	33.39	1	18	7.2	8.548438	19.5	0.6	161.5	w	2	100.0	105.8	4	356
2010	Mar	6	12	13	17.58	1	19	58.7	8.543378	19.5	0.6	162.6	w	2	100.0	105.3	4	356
2010	Mar	7	12	13	1.60	1	21	50.8	8.538615	19.5	0.6	163.6	w	2	100.0	104.7	4	356
2010	Mar	8	12	12	45.47	1	23	43.7	8.534150	19.5	0.6	164.7	w	2	100.0	104.1	4	356
2010	Mar	9	12	12	29.21	1	25	37.1	8.529985	19.5	0.6	165.7	w	1	100.0	103.3	4	356
2010	Mar	10	12	12	12.80	1	27	31.0	8.526124	19.5	0.6	166.8	w	1	100.0	102.5	4	356
2010	Mar	11	12	11	56.27	1	29	25.4	8.522566	19.6	0.6	167.8	w	1	100.0	101.5	4	356
2010	Mar	12	12	11	39.62	1	31	20.2	8.519314	19.6	0.6	168.9	w	1	100.0	100.3	4	356
2010	Mar	13	12	11	22.87	1	33	15.4	8.516368	19.6	0.6	169.9	w	1	100.0	98.9	3	356
2010	Mar	14	12	11	6.01	1	35	10.9	8.513731	19.6	0.5	171.0	w	1	100.0	97.1	3	356
2010	Mar	15	12	10	49.07	1	37	6.6	8.511404	19.6	0.5	172.0	w	1	100.0	94.9	3	356
2010	Mar	16	12	10	32.05	1	39	2.4	8.509386	19.6	0.5	173.0	w	1	100.0	92.0	3	356
2010	Mar	17	12	10	14.96	1	40	58.3	8.507679	19.6	0.5	174.0	w	1	100.0	88.3	3	356
2010	Mar	18	12	9	57.81	1	42	54.2	8.506284	19.6	0.5	174.9	w	1	100.0	83.0	3	356
2010	Mar	19	12	9	40.62	1	44	50.0	8.505200	19.6	0.5	175.8	w	0	100.0	75.5	3	356
2010	Mar	20	12	9	23.40	1	46	45.6	8.504429	19.6	0.5	176.6	w	0	100.0	64.3	3	356
2010	Mar	21	12	9	6.15	1	48	41.1	8.503969	19.6	0.5	177.2	w	0	100.0	47.5	3	356
2010	Mar	22	12	8	48.89	1	50	36.3	8.503820	19.6	0.5	177.4	w	0	100.0	25.0	3	356
2010	Mar	23	12	8	31.62	1	52	31.1	8.503983	19.6	0.5	177.2	w	0	100.0	2.2	3	356
2010	Mar	24	12	8	14.35	1	54	25.5	8.504456	19.6	0.5	176.7	e	0	100.0	344.5	3	356
2010	Mar	25	12	7	57.10	1	56	19.6	8.505240	19.6	0.5	175.9	e	0	100.0	332.7	3	356
2010	Mar	26	12	7	39.86	1	58	13.1	8.506332	19.6	0.5	175.1	e	1	100.0	324.8	3	356

Saturn
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb		De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o		o	o
2010	Mar	27	12	7	22.65	2	0	6.1	8.507731	19.6	0.6	174.1e		1	100.0	319.3		3	356
2010	Mar	28	12	7	5.48	2	1	58.5	8.509438	19.6	0.6	173.2e		1	100.0	315.4		3	356
2010	Mar	29	12	6	48.35	2	3	50.2	8.511451	19.6	0.6	172.2e		1	100.0	312.5		3	356
2010	Mar	30	12	6	31.28	2	5	41.2	8.513768	19.6	0.6	171.1e		1	100.0	310.2		3	356
2010	Mar	31	12	6	14.27	2	7	31.4	8.516389	19.6	0.6	170.1e		1	100.0	308.4		3	356
2010	Apr	1	12	5	57.34	2	9	20.8	8.519312	19.6	0.6	169.1e		1	100.0	306.9		3	356
2010	Apr	2	12	5	40.50	2	11	9.2	8.522537	19.6	0.6	168.1e		1	100.0	305.7		3	356
2010	Apr	3	12	5	23.75	2	12	56.7	8.526063	19.5	0.6	167.0e		1	100.0	304.7		3	356
2010	Apr	4	12	5	7.11	2	14	43.2	8.529888	19.5	0.6	166.0e		1	100.0	303.8		3	356
2010	Apr	5	12	4	50.57	2	16	28.6	8.534011	19.5	0.6	164.9e		2	100.0	303.0		3	356
2010	Apr	6	12	4	34.15	2	18	12.9	8.538431	19.5	0.6	163.9e		2	100.0	302.4		3	356
2010	Apr	7	12	4	17.85	2	19	56.1	8.543145	19.5	0.6	162.8e		2	100.0	301.8		3	356
2010	Apr	8	12	4	1.69	2	21	38.0	8.548154	19.5	0.6	161.8e		2	100.0	301.3		3	356
2010	Apr	9	12	3	45.67	2	23	18.7	8.553454	19.5	0.6	160.8e		2	100.0	300.8		3	356
2010	Apr	10	12	3	29.80	2	24	58.0	8.559044	19.5	0.7	159.7e		2	100.0	300.4		2	356
2010	Apr	11	12	3	14.08	2	26	36.0	8.564922	19.5	0.7	158.7e		2	100.0	300.0		2	356
2010	Apr	12	12	2	58.54	2	28	12.6	8.571086	19.4	0.7	157.6e		2	100.0	299.7		2	356
2010	Apr	13	12	2	43.17	2	29	47.6	8.577533	19.4	0.7	156.6e		2	100.0	299.4		2	356
2010	Apr	14	12	2	27.99	2	31	21.1	8.584260	19.4	0.7	155.5e		3	100.0	299.1		2	356
2010	Apr	15	12	2	13.01	2	32	53.0	8.591265	19.4	0.7	154.5e		3	99.9	298.8		2	356
2010	Apr	16	12	1	58.23	2	34	23.3	8.598546	19.4	0.7	153.5e		3	99.9	298.6		2	356
2010	Apr	17	12	1	43.67	2	35	51.8	8.606099	19.4	0.7	152.4e		3	99.9	298.4		2	356
2010	Apr	18	12	1	29.33	2	37	18.6	8.613921	19.3	0.7	151.4e		3	99.9	298.1		2	356
2010	Apr	19	12	1	15.21	2	38	43.6	8.622008	19.3	0.7	150.3e		3	99.9	298.0		2	356
2010	Apr	20	12	1	1.33	2	40	6.8	8.630358	19.3	0.7	149.3e		3	99.9	297.8		2	356
2010	Apr	21	12	0	47.69	2	41	28.2	8.638966	19.3	0.7	148.3e		3	99.9	297.6		2	356
2010	Apr	22	12	0	34.30	2	42	47.6	8.647829	19.3	0.7	147.2e		3	99.9	297.4		2	356
2010	Apr	23	12	0	21.15	2	44	5.2	8.656944	19.3	0.8	146.2e		3	99.9	297.3		2	356
2010	Apr	24	12	0	8.26	2	45	20.8	8.666306	19.2	0.8	145.2e		3	99.9	297.1		2	356

Saturn
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Apr	25	11	59	55.63	2	46	34.5	8.675912	19.2	0.8	144.2e	4	99.9	297.0	2	356
2010	Apr	26	11	59	43.27	2	47	46.2	8.685759	19.2	0.8	143.1e	4	99.9	296.8	2	356
2010	Apr	27	11	59	31.18	2	48	55.8	8.695842	19.2	0.8	142.1e	4	99.9	296.7	2	356
2010	Apr	28	11	59	19.38	2	50	3.3	8.706158	19.1	0.8	141.1e	4	99.9	296.6	2	356
2010	Apr	29	11	59	7.87	2	51	8.7	8.716703	19.1	0.8	140.1e	4	99.9	296.5	2	356
2010	Apr	30	11	58	56.65	2	52	12.0	8.727475	19.1	0.8	139.0e	4	99.9	296.4	2	356
2010	May	1	11	58	45.73	2	53	13.0	8.738469	19.1	0.8	138.0e	4	99.9	296.3	2	356
2010	May	2	11	58	35.11	2	54	12.0	8.749683	19.0	0.8	137.0e	4	99.9	296.2	2	356
2010	May	3	11	58	24.80	2	55	8.7	8.761111	19.0	0.8	136.0e	4	99.9	296.1	2	356
2010	May	4	11	58	14.79	2	56	3.1	8.772752	19.0	0.8	135.0e	4	99.9	296.0	2	356
2010	May	5	11	58	5.10	2	56	55.4	8.784601	19.0	0.8	134.0e	4	99.9	295.9	2	356
2010	May	6	11	57	55.72	2	57	45.4	8.796654	18.9	0.8	133.0e	4	99.8	295.8	2	356
2010	May	7	11	57	46.66	2	58	33.1	8.808908	18.9	0.9	132.0e	5	99.8	295.7	2	356
2010	May	8	11	57	37.93	2	59	18.4	8.821358	18.9	0.9	131.0e	5	99.8	295.6	2	356
2010	May	9	11	57	29.53	3	0	1.5	8.834000	18.9	0.9	130.0e	5	99.8	295.6	2	356
2010	May	10	11	57	21.46	3	0	42.2	8.846831	18.8	0.9	128.9e	5	99.8	295.5	2	356
2010	May	11	11	57	13.74	3	1	20.5	8.859845	18.8	0.9	128.0e	5	99.8	295.4	2	356
2010	May	12	11	57	6.36	3	1	56.4	8.873039	18.8	0.9	127.0e	5	99.8	295.3	2	356
2010	May	13	11	56	59.32	3	2	29.8	8.886408	18.8	0.9	126.0e	5	99.8	295.3	2	356
2010	May	14	11	56	52.65	3	3	0.8	8.899948	18.7	0.9	125.0e	5	99.8	295.2	2	356
2010	May	15	11	56	46.33	3	3	29.3	8.913654	18.7	0.9	124.0e	5	99.8	295.1	2	356
2010	May	16	11	56	40.36	3	3	55.3	8.927520	18.7	0.9	123.0e	5	99.8	295.1	2	356
2010	May	17	11	56	34.76	3	4	18.9	8.941544	18.6	0.9	122.0e	5	99.8	295.0	2	356
2010	May	18	11	56	29.52	3	4	40.0	8.955718	18.6	0.9	121.0e	5	99.8	294.9	2	356
2010	May	19	11	56	24.64	3	4	58.6	8.970039	18.6	0.9	120.0e	5	99.8	294.9	2	356
2010	May	20	11	56	20.13	3	5	14.7	8.984502	18.5	0.9	119.1e	5	99.8	294.8	2	356
2010	May	21	11	56	15.97	3	5	28.4	8.999101	18.5	0.9	118.1e	5	99.8	294.8	2	356
2010	May	22	11	56	12.18	3	5	39.6	9.013832	18.5	1.0	117.1e	5	99.8	294.7	2	356

Saturn
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	May	23	11	56	8.76	3	5	48.4	9.028691	18.5	1.0	116.1e	5	99.8	294.7	2	356
2010	May	24	11	56	5.71	3	5	54.6	9.043672	18.4	1.0	115.1e	6	99.8	294.6	2	356
2010	May	25	11	56	3.03	3	5	58.3	9.058771	18.4	1.0	114.2e	6	99.8	294.6	2	356
2010	May	26	11	56	0.73	3	5	59.6	9.073984	18.4	1.0	113.2e	6	99.8	294.5	2	356
2010	May	27	11	55	58.80	3	5	58.3	9.089306	18.3	1.0	112.2e	6	99.8	294.5	2	356
2010	May	28	11	55	57.24	3	5	54.5	9.104733	18.3	1.0	111.3e	6	99.8	294.4	2	356
2010	May	29	11	55	56.06	3	5	48.3	9.120262	18.3	1.0	110.3e	6	99.8	294.4	2	356
2010	May	30	11	55	55.25	3	5	39.5	9.135886	18.2	1.0	109.4e	6	99.7	294.3	2	356
2010	May	31	11	55	54.81	3	5	28.3	9.151603	18.2	1.0	108.4e	6	99.7	294.3	2	356
2010	Jun	1	11	55	54.75	3	5	14.7	9.167409	18.2	1.0	107.4e	6	99.7	294.2	2	356
2010	Jun	2	11	55	55.05	3	4	58.5	9.183298	18.1	1.0	106.5e	6	99.7	294.2	2	356
2010	Jun	3	11	55	55.73	3	4	40.0	9.199266	18.1	1.0	105.5e	6	99.7	294.1	2	356
2010	Jun	4	11	55	56.77	3	4	19.0	9.215310	18.1	1.0	104.6e	6	99.7	294.1	2	356
2010	Jun	5	11	55	58.19	3	3	55.5	9.231424	18.1	1.0	103.6e	6	99.7	294.0	2	356
2010	Jun	6	11	55	59.98	3	3	29.6	9.247604	18.0	1.0	102.7e	6	99.7	294.0	2	356
2010	Jun	7	11	56	2.15	3	3	1.2	9.263847	18.0	1.0	101.7e	6	99.7	294.0	2	356
2010	Jun	8	11	56	4.69	3	2	30.4	9.280146	18.0	1.0	100.8e	6	99.7	293.9	2	356
2010	Jun	9	11	56	7.61	3	1	57.2	9.296498	17.9	1.0	99.9e	6	99.7	293.9	2	356
2010	Jun	10	11	56	10.90	3	1	21.4	9.312898	17.9	1.0	98.9e	6	99.7	293.8	2	356
2010	Jun	11	11	56	14.57	3	0	43.3	9.329342	17.9	1.1	98.0e	6	99.7	293.8	2	356
2010	Jun	12	11	56	18.61	3	0	2.7	9.345824	17.8	1.1	97.1e	6	99.7	293.8	2	356
2010	Jun	13	11	56	23.03	2	59	19.7	9.362339	17.8	1.1	96.1e	6	99.7	293.7	2	356
2010	Jun	14	11	56	27.81	2	58	34.3	9.378883	17.8	1.1	95.2e	6	99.7	293.7	2	356
2010	Jun	15	11	56	32.97	2	57	46.6	9.395452	17.7	1.1	94.3e	6	99.7	293.6	2	356
2010	Jun	16	11	56	38.48	2	56	56.5	9.412039	17.7	1.1	93.3e	6	99.7	293.6	2	356
2010	Jun	17	11	56	44.36	2	56	4.1	9.428641	17.7	1.1	92.4e	6	99.7	293.6	2	356
2010	Jun	18	11	56	50.59	2	55	9.5	9.445252	17.6	1.1	91.5e	6	99.7	293.5	2	356
2010	Jun	19	11	56	57.19	2	54	12.5	9.461869	17.6	1.1	90.6e	6	99.7	293.5	2	356

Saturn
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Jun	20	11	57	4.14	2	53	13.2	9.478486	17.6	1.1	89.6e	6	99.7	293.4	2	356
2010	Jun	21	11	57	11.45	2	52	11.7	9.495100	17.6	1.1	88.7e	6	99.7	293.4	2	356
2010	Jun	22	11	57	19.12	2	51	7.9	9.511707	17.5	1.1	87.8e	6	99.7	293.4	2	356
2010	Jun	23	11	57	27.14	2	50	1.9	9.528302	17.5	1.1	86.9e	6	99.7	293.3	2	356
2010	Jun	24	11	57	35.51	2	48	53.7	9.544881	17.5	1.1	86.0e	6	99.7	293.3	2	356
2010	Jun	25	11	57	44.23	2	47	43.2	9.561442	17.4	1.1	85.1e	6	99.7	293.3	2	356
2010	Jun	26	11	57	53.29	2	46	30.6	9.577979	17.4	1.1	84.2e	6	99.7	293.2	2	356
2010	Jun	27	11	58	2.70	2	45	15.8	9.594489	17.4	1.1	83.2e	6	99.7	293.2	2	356
2010	Jun	28	11	58	12.44	2	43	58.9	9.610969	17.3	1.1	82.3e	6	99.7	293.1	2	356
2010	Jun	29	11	58	22.52	2	42	40.0	9.627414	17.3	1.1	81.4e	6	99.7	293.1	2	356
2010	Jun	30	11	58	32.93	2	41	18.9	9.643821	17.3	1.1	80.5e	6	99.7	293.1	2	356
2010	Jul	1	11	58	43.67	2	39	55.7	9.660186	17.3	1.1	79.6e	6	99.7	293.0	2	356
2010	Jul	2	11	58	54.74	2	38	30.5	9.676505	17.2	1.1	78.7e	6	99.7	293.0	2	356
2010	Jul	3	11	59	6.14	2	37	3.3	9.692774	17.2	1.1	77.8e	6	99.7	293.0	2	356
2010	Jul	4	11	59	17.86	2	35	34.0	9.708990	17.2	1.1	76.9e	6	99.7	292.9	2	356
2010	Jul	5	11	59	29.91	2	34	2.7	9.725148	17.1	1.1	76.0e	6	99.7	292.9	2	356
2010	Jul	6	11	59	42.28	2	32	29.4	9.741245	17.1	1.1	75.1e	6	99.7	292.8	2	356
2010	Jul	7	11	59	54.97	2	30	54.1	9.757277	17.1	1.1	74.2e	6	99.7	292.8	2	356
2010	Jul	8	12	0	7.98	2	29	16.8	9.773240	17.1	1.1	73.3e	6	99.7	292.8	2	356
2010	Jul	9	12	0	21.31	2	27	37.6	9.789130	17.0	1.1	72.5e	6	99.7	292.7	2	356
2010	Jul	10	12	0	34.95	2	25	56.4	9.804942	17.0	1.1	71.6e	6	99.7	292.7	2	356
2010	Jul	11	12	0	48.90	2	24	13.3	9.820674	17.0	1.1	70.7e	6	99.7	292.7	2	356
2010	Jul	12	12	1	3.15	2	22	28.3	9.836319	16.9	1.1	69.8e	6	99.7	292.6	2	356
2010	Jul	13	12	1	17.71	2	20	41.6	9.851876	16.9	1.1	68.9e	6	99.8	292.6	3	356
2010	Jul	14	12	1	32.56	2	18	53.0	9.867339	16.9	1.1	68.0e	6	99.8	292.5	3	356
2010	Jul	15	12	1	47.70	2	17	2.6	9.882704	16.9	1.1	67.1e	6	99.8	292.5	3	356
2010	Jul	16	12	2	3.13	2	15	10.5	9.897969	16.8	1.1	66.3e	6	99.8	292.5	3	356
2010	Jul	17	12	2	18.85	2	13	16.7	9.913129	16.8	1.1	65.4e	6	99.8	292.4	3	356
2010	Jul	18	12	2	34.86	2	11	21.1	9.928180	16.8	1.1	64.5e	6	99.8	292.4	3	356

Saturn
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Jul	19	12	2	51.15	2	9	23.8	9.943121	16.8	1.1	63.6e	5	99.8	292.3	3	356
2010	Jul	20	12	3	7.71	2	7	24.8	9.957947	16.7	1.1	62.7e	5	99.8	292.3	3	356
2010	Jul	21	12	3	24.56	2	5	24.2	9.972655	16.7	1.1	61.9e	5	99.8	292.2	3	356
2010	Jul	22	12	3	41.68	2	3	22.0	9.987243	16.7	1.1	61.0e	5	99.8	292.2	3	356
2010	Jul	23	12	3	59.06	2	1	18.1	10.001707	16.7	1.1	60.1e	5	99.8	292.2	3	356
2010	Jul	24	12	4	16.71	1	59	12.7	10.016045	16.6	1.1	59.2e	5	99.8	292.1	3	356
2010	Jul	25	12	4	34.61	1	57	5.7	10.030254	16.6	1.1	58.4e	5	99.8	292.1	3	356
2010	Jul	26	12	4	52.77	1	54	57.2	10.044330	16.6	1.1	57.5e	5	99.8	292.0	3	356
2010	Jul	27	12	5	11.18	1	52	47.3	10.058272	16.6	1.1	56.6e	5	99.8	292.0	3	356
2010	Jul	28	12	5	29.84	1	50	35.8	10.072076	16.5	1.1	55.8e	5	99.8	291.9	3	356
2010	Jul	29	12	5	48.75	1	48	22.9	10.085740	16.5	1.1	54.9e	5	99.8	291.9	3	356
2010	Jul	30	12	6	7.89	1	46	8.6	10.099260	16.5	1.1	54.0e	5	99.8	291.8	3	356
2010	Jul	31	12	6	27.28	1	43	52.9	10.112634	16.5	1.1	53.2e	5	99.8	291.8	3	356
2010	Aug	1	12	6	46.91	1	41	35.8	10.125859	16.5	1.1	52.3e	5	99.8	291.7	3	356
2010	Aug	2	12	7	6.77	1	39	17.3	10.138932	16.4	1.1	51.4e	5	99.8	291.7	3	356
2010	Aug	3	12	7	26.86	1	36	57.5	10.151850	16.4	1.1	50.6e	5	99.8	291.6	3	356
2010	Aug	4	12	7	47.19	1	34	36.2	10.164610	16.4	1.1	49.7e	5	99.8	291.6	3	356
2010	Aug	5	12	8	7.74	1	32	13.7	10.177210	16.4	1.1	48.8e	5	99.8	291.5	3	356
2010	Aug	6	12	8	28.52	1	29	49.9	10.189645	16.4	1.1	48.0e	5	99.8	291.4	4	356
2010	Aug	7	12	8	49.52	1	27	24.8	10.201914	16.3	1.1	47.1e	4	99.8	291.4	4	356
2010	Aug	8	12	9	10.73	1	24	58.5	10.214013	16.3	1.1	46.3e	4	99.9	291.3	4	356
2010	Aug	9	12	9	32.16	1	22	31.0	10.225939	16.3	1.1	45.4e	4	99.9	291.3	4	356
2010	Aug	10	12	9	53.79	1	20	2.3	10.237690	16.3	1.1	44.5e	4	99.9	291.2	4	356
2010	Aug	11	12	10	15.62	1	17	32.5	10.249261	16.3	1.1	43.7e	4	99.9	291.1	4	356
2010	Aug	12	12	10	37.64	1	15	1.6	10.260651	16.2	1.1	42.8e	4	99.9	291.1	4	356
2010	Aug	13	12	10	59.86	1	12	29.6	10.271857	16.2	1.1	42.0e	4	99.9	291.0	4	356
2010	Aug	14	12	11	22.28	1	9	56.6	10.282876	16.2	1.1	41.1e	4	99.9	290.9	4	356
2010	Aug	15	12	11	44.88	1	7	22.5	10.293706	16.2	1.1	40.3e	4	99.9	290.8	4	356

Saturn
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Aug	16	12	12	7.67	1	4	47.4	10.304346	16.2	1.1	39.4e	4	99.9	290.7	4	356
2010	Aug	17	12	12	30.64	1	2	11.3	10.314792	16.2	1.1	38.6e	4	99.9	290.7	4	356
2010	Aug	18	12	12	53.79	0	59	34.2	10.325043	16.1	1.1	37.7e	4	99.9	290.6	4	356
2010	Aug	19	12	13	17.11	0	56	56.2	10.335097	16.1	1.1	36.8e	4	99.9	290.5	4	356
2010	Aug	20	12	13	40.60	0	54	17.3	10.344953	16.1	1.1	36.0e	4	99.9	290.4	4	356
2010	Aug	21	12	14	4.26	0	51	37.5	10.354608	16.1	1.1	35.1e	3	99.9	290.3	4	356
2010	Aug	22	12	14	28.07	0	48	56.9	10.364061	16.1	1.1	34.3e	3	99.9	290.2	4	356
2010	Aug	23	12	14	52.04	0	46	15.5	10.373311	16.1	1.1	33.4e	3	99.9	290.1	4	356
2010	Aug	24	12	15	16.16	0	43	33.3	10.382354	16.1	1.1	32.6e	3	99.9	290.0	4	356
2010	Aug	25	12	15	40.43	0	40	50.3	10.391190	16.0	1.0	31.7e	3	99.9	289.9	4	356
2010	Aug	26	12	16	4.84	0	38	6.6	10.399817	16.0	1.0	30.9e	3	99.9	289.7	4	356
2010	Aug	27	12	16	29.40	0	35	22.2	10.408233	16.0	1.0	30.0e	3	99.9	289.6	5	356
2010	Aug	28	12	16	54.09	0	32	37.0	10.416437	16.0	1.0	29.2e	3	99.9	289.5	5	356
2010	Aug	29	12	17	18.93	0	29	51.1	10.424426	16.0	1.0	28.3e	3	99.9	289.3	5	356
2010	Aug	30	12	17	43.90	0	27	4.6	10.432199	16.0	1.0	27.5e	3	99.9	289.2	5	356
2010	Aug	31	12	18	9.00	0	24	17.4	10.439754	16.0	1.0	26.6e	3	99.9	289.0	5	356
2010	Sep	1	12	18	34.23	0	21	29.6	10.447089	16.0	1.0	25.8e	3	99.9	288.9	5	356
2010	Sep	2	12	18	59.59	0	18	41.2	10.454203	15.9	1.0	24.9e	3	100.0	288.7	5	356
2010	Sep	3	12	19	25.07	0	15	52.2	10.461093	15.9	1.0	24.1e	2	100.0	288.5	5	356
2010	Sep	4	12	19	50.67	0	13	2.7	10.467758	15.9	1.0	23.2e	2	100.0	288.3	5	356
2010	Sep	5	12	20	16.38	0	10	12.6	10.474196	15.9	1.0	22.4e	2	100.0	288.1	5	356
2010	Sep	6	12	20	42.20	0	7	22.1	10.480405	15.9	1.0	21.5e	2	100.0	287.9	5	356
2010	Sep	7	12	21	8.12	0	4	31.1	10.486383	15.9	1.0	20.7e	2	100.0	287.6	5	356
2010	Sep	8	12	21	34.13	0	1	39.8	10.492129	15.9	1.0	19.9e	2	100.0	287.3	5	356
2010	Sep	9	12	22	0.24	- 0	1	12.0	10.497641	15.9	1.0	19.0e	2	100.0	287.0	5	356
2010	Sep	10	12	22	26.44	- 0	4	4.1	10.502917	15.9	1.0	18.2e	2	100.0	286.7	5	356
2010	Sep	11	12	22	52.73	- 0	6	56.5	10.507956	15.9	1.0	17.3e	2	100.0	286.4	5	356
2010	Sep	12	12	23	19.11	- 0	9	49.3	10.512758	15.9	1.0	16.5e	2	100.0	286.0	5	356

Saturn
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Sep	13	12	23	45.57	- 0	12	42.4	10.517321	15.8	1.0	15.6e	2	100.0	285.6	5	356
2010	Sep	14	12	24	12.11	- 0	15	35.7	10.521645	15.8	1.0	14.8e	2	100.0	285.1	6	356
2010	Sep	15	12	24	38.72	- 0	18	29.3	10.525729	15.8	1.0	13.9e	1	100.0	284.6	6	356
2010	Sep	16	12	25	5.40	- 0	21	23.1	10.529572	15.8	0.9	13.1e	1	100.0	284.0	6	356
2010	Sep	17	12	25	32.14	- 0	24	17.1	10.533174	15.8	0.9	12.3e	1	100.0	283.3	6	356
2010	Sep	18	12	25	58.94	- 0	27	11.2	10.536534	15.8	0.9	11.4e	1	100.0	282.5	6	356
2010	Sep	19	12	26	25.80	- 0	30	5.4	10.539652	15.8	0.9	10.6e	1	100.0	281.6	6	356
2010	Sep	20	12	26	52.70	- 0	32	59.6	10.542526	15.8	0.9	9.7e	1	100.0	280.6	6	356
2010	Sep	21	12	27	19.65	- 0	35	54.0	10.545158	15.8	0.9	8.9e	1	100.0	279.3	6	356
2010	Sep	22	12	27	46.64	- 0	38	48.4	10.547546	15.8	0.9	8.1e	1	100.0	277.9	6	356
2010	Sep	23	12	28	13.67	- 0	41	42.7	10.549689	15.8	0.9	7.3e	1	100.0	276.0	6	356
2010	Sep	24	12	28	40.74	- 0	44	37.1	10.551587	15.8	0.9	6.5e	1	100.0	273.8	6	356
2010	Sep	25	12	29	7.85	- 0	47	31.5	10.553240	15.8	0.9	5.7e	1	100.0	270.8	6	356
2010	Sep	26	12	29	34.99	- 0	50	25.8	10.554647	15.8	0.9	4.9e	1	100.0	267.0	6	356
2010	Sep	27	12	30	2.16	- 0	53	20.1	10.555808	15.8	0.9	4.1e	0	100.0	261.7	6	356
2010	Sep	28	12	30	29.35	- 0	56	14.3	10.556722	15.8	0.9	3.4e	0	100.0	254.1	6	356
2010	Sep	29	12	30	56.57	- 0	59	8.4	10.557388	15.8	0.9	2.8e	0	100.0	243.0	6	356
2010	Sep	30	12	31	23.81	- 1	2	2.4	10.557807	15.8	0.9	2.4e	0	100.0	226.7	6	356
2010	Oct	1	12	31	51.06	- 1	4	56.2	10.557976	15.8	0.9	2.2e	0	100.0	205.3	6	356
2010	Oct	2	12	32	18.32	- 1	7	49.8	10.557897	15.8	0.9	2.3e	0	100.0	183.4	7	356
2010	Oct	3	12	32	45.58	- 1	10	43.1	10.557568	15.8	0.9	2.7w	0	100.0	166.0	7	356
2010	Oct	4	12	33	12.84	- 1	13	36.2	10.556988	15.8	0.9	3.3w	0	100.0	154.0	7	356
2010	Oct	5	12	33	40.09	- 1	16	29.0	10.556158	15.8	0.9	4.0w	0	100.0	145.9	7	357
2010	Oct	6	12	34	7.33	- 1	19	21.4	10.555077	15.8	0.9	4.7w	0	100.0	140.3	7	357
2010	Oct	7	12	34	34.56	- 1	22	13.5	10.553745	15.8	0.9	5.5w	1	100.0	136.2	7	357
2010	Oct	8	12	35	1.77	- 1	25	5.2	10.552162	15.8	0.9	6.3w	1	100.0	133.1	7	357
2010	Oct	9	12	35	28.96	- 1	27	56.5	10.550328	15.8	0.9	7.2w	1	100.0	130.7	7	357
2010	Oct	10	12	35	56.14	- 1	30	47.4	10.548243	15.8	0.9	8.0w	1	100.0	128.8	7	357
2010	Oct	11	12	36	23.28	- 1	33	37.9	10.545908	15.8	0.9	8.8w	1	100.0	127.3	7	357

Saturn
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Oct	12	12	36	50.39	- 1	36	27.9	10.543323	15.8	0.9	9.7w	1	100.0	126.0	7	357
2010	Oct	13	12	37	17.47	- 1	39	17.3	10.540490	15.8	0.9	10.5w	1	100.0	124.9	7	357
2010	Oct	14	12	37	44.49	- 1	42	6.2	10.537409	15.8	0.9	11.4w	1	100.0	124.0	7	357
2010	Oct	15	12	38	11.47	- 1	44	54.6	10.534080	15.8	0.9	12.2w	1	100.0	123.2	7	357
2010	Oct	16	12	38	38.40	- 1	47	42.3	10.530506	15.8	0.9	13.1w	1	100.0	122.5	7	357
2010	Oct	17	12	39	5.27	- 1	50	29.4	10.526686	15.8	0.9	13.9w	1	100.0	121.9	7	357
2010	Oct	18	12	39	32.08	- 1	53	15.8	10.522621	15.8	0.9	14.8w	2	100.0	121.4	7	357
2010	Oct	19	12	39	58.82	- 1	56	1.5	10.518313	15.8	0.9	15.7w	2	100.0	120.9	7	357
2010	Oct	20	12	40	25.49	- 1	58	46.6	10.513762	15.9	0.9	16.5w	2	100.0	120.5	7	357
2010	Oct	21	12	40	52.09	- 2	1	30.9	10.508969	15.9	0.9	17.4w	2	100.0	120.1	8	357
2010	Oct	22	12	41	18.62	- 2	4	14.4	10.503936	15.9	0.9	18.3w	2	100.0	119.7	8	357
2010	Oct	23	12	41	45.07	- 2	6	57.2	10.498662	15.9	0.9	19.1w	2	100.0	119.4	8	357
2010	Oct	24	12	42	11.44	- 2	9	39.2	10.493150	15.9	0.9	20.0w	2	100.0	119.1	8	357
2010	Oct	25	12	42	37.73	- 2	12	20.4	10.487399	15.9	0.9	20.9w	2	100.0	118.8	8	357
2010	Oct	26	12	43	3.93	- 2	15	0.8	10.481411	15.9	0.9	21.7w	2	100.0	118.5	8	357
2010	Oct	27	12	43	30.04	- 2	17	40.3	10.475187	15.9	0.9	22.6w	2	100.0	118.3	8	357
2010	Oct	28	12	43	56.05	- 2	20	18.9	10.468728	15.9	0.9	23.5w	2	100.0	118.1	8	357
2010	Oct	29	12	44	21.96	- 2	22	56.6	10.462034	15.9	0.9	24.4w	2	100.0	117.8	8	357
2010	Oct	30	12	44	47.76	- 2	25	33.4	10.455107	15.9	0.9	25.2w	3	100.0	117.7	8	357
2010	Oct	31	12	45	13.44	- 2	28	9.1	10.447947	16.0	0.9	26.1w	3	99.9	117.5	8	357
2010	Nov	1	12	45	39.01	- 2	30	43.9	10.440555	16.0	0.9	27.0w	3	99.9	117.3	8	357
2010	Nov	2	12	46	4.46	- 2	33	17.5	10.432933	16.0	0.9	27.9w	3	99.9	117.1	8	357
2010	Nov	3	12	46	29.78	- 2	35	50.1	10.425082	16.0	0.9	28.8w	3	99.9	117.0	8	357
2010	Nov	4	12	46	54.97	- 2	38	21.6	10.417004	16.0	0.9	29.7w	3	99.9	116.8	8	357
2010	Nov	5	12	47	20.03	- 2	40	52.0	10.408699	16.0	0.9	30.6w	3	99.9	116.7	8	357
2010	Nov	6	12	47	44.95	- 2	43	21.2	10.400170	16.0	0.9	31.4w	3	99.9	116.5	8	357
2010	Nov	7	12	48	9.74	- 2	45	49.3	10.391418	16.0	0.9	32.3w	3	99.9	116.4	8	357
2010	Nov	8	12	48	34.38	- 2	48	16.1	10.382446	16.1	0.9	33.2w	3	99.9	116.3	8	357

Saturn
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Nov	9	12	48	58.86	- 2	50	41.8	10.373256	16.1	0.9	34.1w	3	99.9	116.2	8	357
2010	Nov	10	12	49	23.19	- 2	53	6.2	10.363850	16.1	0.9	35.0w	3	99.9	116.1	9	357
2010	Nov	11	12	49	47.36	- 2	55	29.3	10.354231	16.1	0.9	35.9w	3	99.9	115.9	9	357
2010	Nov	12	12	50	11.35	- 2	57	51.0	10.344400	16.1	0.9	36.8w	4	99.9	115.8	9	357
2010	Nov	13	12	50	35.18	- 3	0	11.4	10.334362	16.1	0.9	37.7w	4	99.9	115.7	9	357
2010	Nov	14	12	50	58.82	- 3	2	30.5	10.324117	16.1	0.9	38.6w	4	99.9	115.6	9	357
2010	Nov	15	12	51	22.29	- 3	4	48.1	10.313668	16.2	0.9	39.5w	4	99.9	115.5	9	357
2010	Nov	16	12	51	45.57	- 3	7	4.3	10.303018	16.2	0.9	40.4w	4	99.9	115.5	9	357
2010	Nov	17	12	52	8.66	- 3	9	19.0	10.292170	16.2	0.9	41.3w	4	99.9	115.4	9	357
2010	Nov	18	12	52	31.57	- 3	11	32.3	10.281125	16.2	0.9	42.2w	4	99.9	115.3	9	357
2010	Nov	19	12	52	54.27	- 3	13	44.1	10.269887	16.2	0.9	43.1w	4	99.9	115.2	9	357
2010	Nov	20	12	53	16.79	- 3	15	54.5	10.258458	16.2	0.9	44.0w	4	99.9	115.1	9	357
2010	Nov	21	12	53	39.10	- 3	18	3.3	10.246840	16.3	0.9	44.9w	4	99.9	115.0	9	357
2010	Nov	22	12	54	1.21	- 3	20	10.6	10.235036	16.3	0.9	45.8w	4	99.9	115.0	9	357
2010	Nov	23	12	54	23.11	- 3	22	16.3	10.223049	16.3	0.9	46.7w	4	99.9	114.9	9	357
2010	Nov	24	12	54	44.79	- 3	24	20.4	10.210881	16.3	0.9	47.7w	4	99.9	114.8	9	357
2010	Nov	25	12	55	6.26	- 3	26	22.9	10.198534	16.3	0.9	48.6w	4	99.9	114.7	9	357
2010	Nov	26	12	55	27.50	- 3	28	23.8	10.186010	16.4	0.9	49.5w	4	99.8	114.7	9	357
2010	Nov	27	12	55	48.51	- 3	30	23.0	10.173314	16.4	0.9	50.4w	5	99.8	114.6	9	357
2010	Nov	28	12	56	9.28	- 3	32	20.5	10.160446	16.4	0.9	51.3w	5	99.8	114.5	9	357
2010	Nov	29	12	56	29.82	- 3	34	16.2	10.147410	16.4	0.9	52.2w	5	99.8	114.5	9	357
2010	Nov	30	12	56	50.11	- 3	36	10.2	10.134209	16.4	0.9	53.2w	5	99.8	114.4	9	357
2010	Dec	1	12	57	10.16	- 3	38	2.4	10.120845	16.5	0.9	54.1w	5	99.8	114.3	9	357
2010	Dec	2	12	57	29.96	- 3	39	52.7	10.107322	16.5	0.9	55.0w	5	99.8	114.3	9	357
2010	Dec	3	12	57	49.50	- 3	41	41.3	10.093643	16.5	0.9	55.9w	5	99.8	114.2	9	357
2010	Dec	4	12	58	8.79	- 3	43	28.0	10.079811	16.5	0.9	56.9w	5	99.8	114.2	9	357
2010	Dec	5	12	58	27.82	- 3	45	12.9	10.065830	16.6	0.9	57.8w	5	99.8	114.1	10	357
2010	Dec	6	12	58	46.58	- 3	46	55.9	10.051704	16.6	0.9	58.7w	5	99.8	114.0	10	357

Saturn
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Dec	7	12	59	5.07	- 3	48	37.0	10.037437	16.6	0.9	59.7w	5	99.8	114.0	10	357
2010	Dec	8	12	59	23.27	- 3	50	16.1	10.023032	16.6	0.9	60.6w	5	99.8	113.9	10	357
2010	Dec	9	12	59	41.20	- 3	51	53.3	10.008493	16.7	0.9	61.5w	5	99.8	113.9	10	357
2010	Dec	10	12	59	58.83	- 3	53	28.4	9.993825	16.7	0.9	62.5w	5	99.8	113.8	10	357
2010	Dec	11	13	0	16.17	- 3	55	1.5	9.979031	16.7	0.9	63.4w	5	99.8	113.8	10	357
2010	Dec	12	13	0	33.22	- 3	56	32.6	9.964116	16.7	0.8	64.3w	5	99.8	113.7	10	357
2010	Dec	13	13	0	49.96	- 3	58	1.6	9.949084	16.8	0.8	65.3w	5	99.8	113.7	10	357
2010	Dec	14	13	1	6.41	- 3	59	28.6	9.933938	16.8	0.8	66.2w	5	99.8	113.6	10	357
2010	Dec	15	13	1	22.54	- 4	0	53.5	9.918683	16.8	0.8	67.2w	5	99.8	113.6	10	357
2010	Dec	16	13	1	38.38	- 4	2	16.2	9.903322	16.8	0.8	68.1w	5	99.8	113.5	10	357
2010	Dec	17	13	1	53.90	- 4	3	36.9	9.887861	16.9	0.8	69.1w	6	99.8	113.5	10	357
2010	Dec	18	13	2	9.11	- 4	4	55.5	9.872302	16.9	0.8	70.0w	6	99.8	113.4	10	357
2010	Dec	19	13	2	24.00	- 4	6	11.9	9.856650	16.9	0.8	71.0w	6	99.8	113.4	10	357
2010	Dec	20	13	2	38.57	- 4	7	26.2	9.840909	16.9	0.8	71.9w	6	99.8	113.3	10	357
2010	Dec	21	13	2	52.82	- 4	8	38.3	9.825083	17.0	0.8	72.9w	6	99.8	113.3	10	357
2010	Dec	22	13	3	6.75	- 4	9	48.3	9.809176	17.0	0.8	73.8w	6	99.8	113.2	10	357
2010	Dec	23	13	3	20.34	- 4	10	56.0	9.793191	17.0	0.8	74.8w	6	99.8	113.2	10	357
2010	Dec	24	13	3	33.59	- 4	12	1.5	9.777134	17.0	0.8	75.8w	6	99.8	113.1	10	357
2010	Dec	25	13	3	46.50	- 4	13	4.8	9.761006	17.1	0.8	76.7w	6	99.7	113.1	10	357
2010	Dec	26	13	3	59.07	- 4	14	5.7	9.744814	17.1	0.8	77.7w	6	99.7	113.0	10	357
2010	Dec	27	13	4	11.29	- 4	15	4.4	9.728561	17.1	0.8	78.6w	6	99.7	113.0	10	357
2010	Dec	28	13	4	23.15	- 4	16	0.7	9.712250	17.2	0.8	79.6w	6	99.7	112.9	10	357
2010	Dec	29	13	4	34.67	- 4	16	54.7	9.695888	17.2	0.8	80.6w	6	99.7	112.9	10	357
2010	Dec	30	13	4	45.83	- 4	17	46.4	9.679477	17.2	0.8	81.6w	6	99.7	112.8	10	357
2010	Dec	31	13	4	56.64	- 4	18	35.8	9.663023	17.2	0.8	82.5w	6	99.7	112.8	10	357

http://digilander.libero.it/occultazioni

Uranus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Jan	1	23	35	48.22	- 3	25	41.8	20.366474	3.4	5.9	72.8e	3	99.9	246.9	5	254
2010	Jan	2	23	35	53.82	- 3	25	3.2	20.382932	3.4	5.9	71.8e	3	99.9	246.9	5	254
2010	Jan	3	23	35	59.59	- 3	24	23.5	20.399298	3.4	5.9	70.8e	3	99.9	247.0	5	254
2010	Jan	4	23	36	5.52	- 3	23	42.9	20.415569	3.4	5.9	69.8e	3	99.9	247.0	5	254
2010	Jan	5	23	36	11.62	- 3	23	1.1	20.431740	3.4	5.9	68.8e	3	99.9	247.0	5	254
2010	Jan	6	23	36	17.88	- 3	22	18.3	20.447806	3.4	5.9	67.8e	3	99.9	247.0	5	254
2010	Jan	7	23	36	24.31	- 3	21	34.5	20.463763	3.4	5.9	66.8e	3	99.9	247.0	5	254
2010	Jan	8	23	36	30.90	- 3	20	49.6	20.479606	3.3	5.9	65.8e	3	100.0	247.0	5	254
2010	Jan	9	23	36	37.66	- 3	20	3.6	20.495329	3.3	5.9	64.8e	3	100.0	247.0	5	254
2010	Jan	10	23	36	44.58	- 3	19	16.6	20.510930	3.3	5.9	63.8e	3	100.0	247.1	6	254
2010	Jan	11	23	36	51.67	- 3	18	28.6	20.526402	3.3	5.9	62.9e	2	100.0	247.1	6	254
2010	Jan	12	23	36	58.91	- 3	17	39.5	20.541741	3.3	5.9	61.9e	2	100.0	247.1	6	254
2010	Jan	13	23	37	6.31	- 3	16	49.5	20.556942	3.3	5.9	60.9e	2	100.0	247.1	6	254
2010	Jan	14	23	37	13.87	- 3	15	58.5	20.572001	3.3	5.9	59.9e	2	100.0	247.1	6	254
2010	Jan	15	23	37	21.58	- 3	15	6.5	20.586913	3.3	5.9	58.9e	2	100.0	247.1	6	254
2010	Jan	16	23	37	29.43	- 3	14	13.6	20.601673	3.3	5.9	57.9e	2	100.0	247.1	6	254
2010	Jan	17	23	37	37.44	- 3	13	19.7	20.616278	3.3	5.9	57.0e	2	100.0	247.2	6	254
2010	Jan	18	23	37	45.58	- 3	12	25.0	20.630723	3.3	5.9	56.0e	2	100.0	247.2	6	254
2010	Jan	19	23	37	53.87	- 3	11	29.4	20.645003	3.3	5.9	55.0e	2	100.0	247.2	6	254
2010	Jan	20	23	38	2.30	- 3	10	32.8	20.659116	3.3	5.9	54.0e	2	100.0	247.2	6	254
2010	Jan	21	23	38	10.87	- 3	9	35.4	20.673055	3.3	5.9	53.0e	2	100.0	247.2	6	254
2010	Jan	22	23	38	19.58	- 3	8	37.1	20.686819	3.3	5.9	52.1e	2	100.0	247.2	6	254
2010	Jan	23	23	38	28.43	- 3	7	38.0	20.700403	3.3	5.9	51.1e	2	100.0	247.3	6	254
2010	Jan	24	23	38	37.41	- 3	6	38.0	20.713803	3.3	5.9	50.1e	2	100.0	247.3	6	254
2010	Jan	25	23	38	46.53	- 3	5	37.1	20.727016	3.3	5.9	49.1e	2	100.0	247.3	6	254
2010	Jan	26	23	38	55.77	- 3	4	35.5	20.740039	3.3	5.9	48.2e	2	100.0	247.3	6	254
2010	Jan	27	23	39	5.15	- 3	3	33.0	20.752868	3.3	5.9	47.2e	2	100.0	247.3	6	254
2010	Jan	28	23	39	14.65	- 3	2	29.7	20.765500	3.3	5.9	46.2e	2	100.0	247.4	6	254
2010	Jan	29	23	39	24.28	- 3	1	25.7	20.777933	3.3	5.9	45.2e	2	100.0	247.4	6	254

Uranus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Jan	30	23	39	34.02	- 3	0	20.9	20.790164	3.3	5.9	44.3e	2	100.0	247.4	6	254
2010	Jan	31	23	39	43.87	- 2	59	15.5	20.802189	3.3	5.9	43.3e	2	100.0	247.4	6	254
2010	Feb	1	23	39	53.84	- 2	58	9.4	20.814006	3.3	5.9	42.3e	2	100.0	247.5	6	254
2010	Feb	2	23	40	3.91	- 2	57	2.5	20.825612	3.3	5.9	41.4e	2	100.0	247.5	6	254
2010	Feb	3	23	40	14.10	- 2	55	55.0	20.837003	3.3	5.9	40.4e	2	100.0	247.5	6	254
2010	Feb	4	23	40	24.39	- 2	54	46.7	20.848178	3.3	5.9	39.4e	2	100.0	247.5	6	254
2010	Feb	5	23	40	34.80	- 2	53	37.8	20.859132	3.3	5.9	38.5e	2	100.0	247.6	7	254
2010	Feb	6	23	40	45.31	- 2	52	28.2	20.869863	3.3	5.9	37.5e	2	100.0	247.6	7	254
2010	Feb	7	23	40	55.93	- 2	51	18.0	20.880367	3.3	5.9	36.5e	2	100.0	247.6	7	254
2010	Feb	8	23	41	6.65	- 2	50	7.1	20.890642	3.3	5.9	35.6e	2	100.0	247.7	7	254
2010	Feb	9	23	41	17.47	- 2	48	55.6	20.900684	3.3	5.9	34.6e	2	100.0	247.7	7	254
2010	Feb	10	23	41	28.38	- 2	47	43.6	20.910491	3.3	5.9	33.6e	2	100.0	247.7	7	254
2010	Feb	11	23	41	39.39	- 2	46	30.9	20.920060	3.3	5.9	32.7e	2	100.0	247.8	7	254
2010	Feb	12	23	41	50.48	- 2	45	17.7	20.929388	3.3	5.9	31.7e	1	100.0	247.8	7	254
2010	Feb	13	23	42	1.66	- 2	44	4.0	20.938472	3.3	5.9	30.7e	1	100.0	247.9	7	254
2010	Feb	14	23	42	12.92	- 2	42	49.8	20.947310	3.3	5.9	29.8e	1	100.0	247.9	7	254
2010	Feb	15	23	42	24.26	- 2	41	35.1	20.955899	3.3	5.9	28.8e	1	100.0	247.9	7	254
2010	Feb	16	23	42	35.68	- 2	40	19.9	20.964238	3.3	5.9	27.9e	1	100.0	248.0	7	254
2010	Feb	17	23	42	47.18	- 2	39	4.3	20.972324	3.3	5.9	26.9e	1	100.0	248.1	7	254
2010	Feb	18	23	42	58.75	- 2	37	48.2	20.980155	3.3	5.9	26.0e	1	100.0	248.1	7	254
2010	Feb	19	23	43	10.40	- 2	36	31.6	20.987730	3.3	5.9	25.0e	1	100.0	248.2	7	254
2010	Feb	20	23	43	22.11	- 2	35	14.6	20.995045	3.3	5.9	24.0e	1	100.0	248.2	7	254
2010	Feb	21	23	43	33.90	- 2	33	57.2	21.002101	3.3	5.9	23.1e	1	100.0	248.3	7	254
2010	Feb	22	23	43	45.75	- 2	32	39.4	21.008895	3.3	5.9	22.1e	1	100.0	248.4	7	254
2010	Feb	23	23	43	57.66	- 2	31	21.3	21.015426	3.3	5.9	21.2e	1	100.0	248.5	7	254
2010	Feb	24	23	44	9.64	- 2	30	2.7	21.021693	3.3	5.9	20.2e	1	100.0	248.6	8	254
2010	Feb	25	23	44	21.67	- 2	28	43.9	21.027695	3.3	5.9	19.3e	1	100.0	248.7	8	254
2010	Feb	26	23	44	33.75	- 2	27	24.7	21.033431	3.3	5.9	18.3e	1	100.0	248.8	8	254

Uranus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Feb	27	23	44	45.87	- 2	26	5.3	21.038899	3.3	5.9	17.4e	1	100.0	248.9	8	254
2010	Feb	28	23	44	58.04	- 2	24	45.6	21.044100	3.3	5.9	16.4e	1	100.0	249.1	8	254
2010	Mar	1	23	45	10.25	- 2	23	25.7	21.049032	3.3	5.9	15.5e	1	100.0	249.2	8	254
2010	Mar	2	23	45	22.51	- 2	22	5.5	21.053695	3.3	5.9	14.5e	1	100.0	249.4	8	254
2010	Mar	3	23	45	34.80	- 2	20	45.1	21.058087	3.3	5.9	13.6e	1	100.0	249.6	8	254
2010	Mar	4	23	45	47.14	- 2	19	24.5	21.062207	3.3	5.9	12.7e	1	100.0	249.8	8	254
2010	Mar	5	23	45	59.51	- 2	18	3.6	21.066055	3.3	5.9	11.7e	1	100.0	250.1	8	254
2010	Mar	6	23	46	11.92	- 2	16	42.5	21.069628	3.3	5.9	10.8e	1	100.0	250.4	8	254
2010	Mar	7	23	46	24.36	- 2	15	21.3	21.072927	3.3	5.9	9.8e	0	100.0	250.8	8	254
2010	Mar	8	23	46	36.83	- 2	13	59.9	21.075950	3.3	5.9	8.9e	0	100.0	251.2	8	254
2010	Mar	9	23	46	49.33	- 2	12	38.3	21.078696	3.3	5.9	7.9e	0	100.0	251.8	8	254
2010	Mar	10	23	47	1.85	- 2	11	16.6	21.081165	3.3	5.9	7.0e	0	100.0	252.5	8	254
2010	Mar	11	23	47	14.39	- 2	9	54.9	21.083355	3.3	5.9	6.1e	0	100.0	253.4	8	254
2010	Mar	12	23	47	26.95	- 2	8	33.1	21.085266	3.3	5.9	5.1e	0	100.0	254.6	8	254
2010	Mar	13	23	47	39.51	- 2	7	11.2	21.086898	3.3	5.9	4.2e	0	100.0	256.4	8	254
2010	Mar	14	23	47	52.09	- 2	5	49.3	21.088251	3.3	5.9	3.3e	0	100.0	259.2	9	254
2010	Mar	15	23	48	4.68	- 2	4	27.3	21.089323	3.3	5.9	2.4e	0	100.0	264.2	9	254
2010	Mar	16	23	48	17.27	- 2	3	5.4	21.090115	3.3	5.9	1.5e	0	100.0	275.1	9	254
2010	Mar	17	23	48	29.86	- 2	1	43.5	21.090626	3.3	5.9	0.8e	0	100.0	308.6	9	254
2010	Mar	18	23	48	42.46	- 2	0	21.6	21.090858	3.3	5.9	0.9w	0	100.0	14.3	9	254
2010	Mar	19	23	48	55.06	- 1	58	59.7	21.090809	3.3	5.9	1.7w	0	100.0	40.9	9	254
2010	Mar	20	23	49	7.66	- 1	57	37.8	21.090481	3.3	5.9	2.5w	0	100.0	50.1	9	254
2010	Mar	21	23	49	20.25	- 1	56	16.1	21.089874	3.3	5.9	3.4w	0	100.0	54.6	9	254
2010	Mar	22	23	49	32.83	- 1	54	54.3	21.088989	3.3	5.9	4.4w	0	100.0	57.1	9	254
2010	Mar	23	23	49	45.41	- 1	53	32.7	21.087826	3.3	5.9	5.3w	0	100.0	58.8	9	254
2010	Mar	24	23	49	57.97	- 1	52	11.3	21.086386	3.3	5.9	6.2w	0	100.0	60.0	9	254
2010	Mar	25	23	50	10.51	- 1	50	50.0	21.084671	3.3	5.9	7.1w	0	100.0	60.8	9	254
2010	Mar	26	23	50	23.03	- 1	49	28.8	21.082681	3.3	5.9	8.1w	0	100.0	61.5	9	254

Uranus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Mar	27	23	50	35.52	- 1	48	7.9	21.080418	3.3	5.9	9.0w	0	100.0	62.0	9	254
2010	Mar	28	23	50	47.99	- 1	46	47.2	21.077883	3.3	5.9	9.9w	0	100.0	62.5	9	254
2010	Mar	29	23	51	0.42	- 1	45	26.7	21.075076	3.3	5.9	10.9w	1	100.0	62.8	9	254
2010	Mar	30	23	51	12.82	- 1	44	6.4	21.071999	3.3	5.9	11.8w	1	100.0	63.1	9	254
2010	Mar	31	23	51	25.20	- 1	42	46.4	21.068653	3.3	5.9	12.7w	1	100.0	63.4	9	254
2010	Apr	1	23	51	37.54	- 1	41	26.5	21.065038	3.3	5.9	13.7w	1	100.0	63.6	10	254
2010	Apr	2	23	51	49.85	- 1	40	7.0	21.061156	3.3	5.9	14.6w	1	100.0	63.8	10	254
2010	Apr	3	23	52	2.13	- 1	38	47.7	21.057008	3.3	5.9	15.5w	1	100.0	64.0	10	254
2010	Apr	4	23	52	14.36	- 1	37	28.6	21.052594	3.3	5.9	16.4w	1	100.0	64.1	10	254
2010	Apr	5	23	52	26.55	- 1	36	9.9	21.047915	3.3	5.9	17.4w	1	100.0	64.3	10	254
2010	Apr	6	23	52	38.70	- 1	34	51.5	21.042973	3.3	5.9	18.3w	1	100.0	64.4	10	254
2010	Apr	7	23	52	50.80	- 1	33	33.5	21.037768	3.3	5.9	19.2w	1	100.0	64.5	10	254
2010	Apr	8	23	53	2.84	- 1	32	15.9	21.032303	3.3	5.9	20.2w	1	100.0	64.6	10	254
2010	Apr	9	23	53	14.83	- 1	30	58.6	21.026577	3.3	5.9	21.1w	1	100.0	64.7	10	254
2010	Apr	10	23	53	26.76	- 1	29	41.8	21.020593	3.3	5.9	22.0w	1	100.0	64.8	10	254
2010	Apr	11	23	53	38.63	- 1	28	25.4	21.014352	3.3	5.9	22.9w	1	100.0	64.9	10	254
2010	Apr	12	23	53	50.43	- 1	27	9.4	21.007857	3.3	5.9	23.9w	1	100.0	64.9	10	254
2010	Apr	13	23	54	2.18	- 1	25	53.8	21.001107	3.3	5.9	24.8w	1	100.0	65.0	10	254
2010	Apr	14	23	54	13.86	- 1	24	38.7	20.994106	3.3	5.9	25.7w	1	100.0	65.1	10	254
2010	Apr	15	23	54	25.47	- 1	23	24.1	20.986856	3.3	5.9	26.7w	1	100.0	65.1	10	254
2010	Apr	16	23	54	37.01	- 1	22	10.0	20.979358	3.3	5.9	27.6w	1	100.0	65.2	10	254
2010	Apr	17	23	54	48.49	- 1	20	56.3	20.971615	3.3	5.9	28.5w	1	100.0	65.2	10	254
2010	Apr	18	23	54	59.89	- 1	19	43.2	20.963630	3.3	5.9	29.4w	1	100.0	65.3	10	254
2010	Apr	19	23	55	11.22	- 1	18	30.5	20.955404	3.3	5.9	30.4w	1	100.0	65.3	10	254
2010	Apr	20	23	55	22.46	- 1	17	18.5	20.946941	3.3	5.9	31.3w	1	100.0	65.4	11	254
2010	Apr	21	23	55	33.62	- 1	16	7.0	20.938243	3.3	5.9	32.2w	2	100.0	65.4	11	254
2010	Apr	22	23	55	44.70	- 1	14	56.1	20.929313	3.3	5.9	33.1w	2	100.0	65.5	11	254
2010	Apr	23	23	55	55.68	- 1	13	45.8	20.920154	3.3	5.9	34.1w	2	100.0	65.5	11	254
2010	Apr	24	23	56	6.57	- 1	12	36.1	20.910769	3.3	5.9	35.0w	2	100.0	65.5	11	254

Uranus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Apr	25	23	56	17.37	- 1	11	27.1	20.901160	3.3	5.9	35.9	w	2	100.0	65.6	11	254
2010	Apr	26	23	56	28.07	- 1	10	18.8	20.891330	3.3	5.9	36.8	w	2	100.0	65.6	11	254
2010	Apr	27	23	56	38.68	- 1	9	11.0	20.881282	3.3	5.9	37.8	w	2	100.0	65.6	11	254
2010	Apr	28	23	56	49.19	- 1	8	4.0	20.871018	3.3	5.9	38.7	w	2	100.0	65.7	11	254
2010	Apr	29	23	56	59.61	- 1	6	57.5	20.860542	3.3	5.9	39.6	w	2	100.0	65.7	11	254
2010	Apr	30	23	57	9.93	- 1	5	51.7	20.849855	3.3	5.9	40.5	w	2	100.0	65.7	11	254
2010	May	1	23	57	20.15	- 1	4	46.6	20.838960	3.3	5.9	41.5	w	2	100.0	65.7	11	254
2010	May	2	23	57	30.27	- 1	3	42.2	20.827859	3.3	5.9	42.4	w	2	100.0	65.8	11	254
2010	May	3	23	57	40.28	- 1	2	38.6	20.816556	3.3	5.9	43.3	w	2	100.0	65.8	11	254
2010	May	4	23	57	50.18	- 1	1	35.6	20.805053	3.3	5.9	44.2	w	2	100.0	65.8	11	254
2010	May	5	23	57	59.97	- 1	0	33.5	20.793353	3.3	5.9	45.2	w	2	100.0	65.8	11	254
2010	May	6	23	58	9.64	- 0	59	32.1	20.781458	3.3	5.9	46.1	w	2	100.0	65.9	11	254
2010	May	7	23	58	19.19	- 0	58	31.5	20.769372	3.3	5.9	47.0	w	2	100.0	65.9	11	254
2010	May	8	23	58	28.63	- 0	57	31.7	20.757096	3.3	5.9	47.9	w	2	100.0	65.9	11	254
2010	May	9	23	58	37.95	- 0	56	32.7	20.744636	3.3	5.9	48.9	w	2	100.0	65.9	11	254
2010	May	10	23	58	47.14	- 0	55	34.5	20.731993	3.3	5.9	49.8	w	2	100.0	65.9	11	254
2010	May	11	23	58	56.21	- 0	54	37.2	20.719171	3.3	5.9	50.7	w	2	100.0	66.0	11	254
2010	May	12	23	59	5.16	- 0	53	40.6	20.706174	3.3	5.9	51.6	w	2	100.0	66.0	12	254
2010	May	13	23	59	13.99	- 0	52	45.0	20.693005	3.3	5.9	52.6	w	2	100.0	66.0	12	254
2010	May	14	23	59	22.68	- 0	51	50.1	20.679667	3.3	5.9	53.5	w	2	100.0	66.0	12	254
2010	May	15	23	59	31.25	- 0	50	56.1	20.666165	3.3	5.9	54.4	w	2	100.0	66.0	12	254
2010	May	16	23	59	39.69	- 0	50	3.0	20.652502	3.3	5.9	55.3	w	2	100.0	66.1	12	254
2010	May	17	23	59	48.00	- 0	49	10.8	20.638682	3.3	5.9	56.3	w	2	100.0	66.1	12	254
2010	May	18	23	59	56.17	- 0	48	19.5	20.624709	3.3	5.9	57.2	w	2	100.0	66.1	12	254
2010	May	19	0	0	4.20	- 0	47	29.2	20.610588	3.3	5.9	58.1	w	2	100.0	66.1	12	254
2010	May	20	0	0	12.08	- 0	46	39.8	20.596322	3.3	5.9	59.1	w	2	100.0	66.1	12	254
2010	May	21	0	0	19.82	- 0	45	51.3	20.581916	3.3	5.9	60.0	w	2	100.0	66.1	12	254
2010	May	22	0	0	27.41	- 0	45	3.8	20.567373	3.3	5.9	60.9	w	3	100.0	66.2	12	254

Uranus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	May	23	0	0	34.86	- 0	44	17.3	20.552698	3.3	5.9	61.8w	3	100.0	66.2	12	254
2010	May	24	0	0	42.17	- 0	43	31.8	20.537895	3.3	5.9	62.8w	3	99.9	66.2	12	254
2010	May	25	0	0	49.33	- 0	42	47.2	20.522968	3.3	5.9	63.7w	3	99.9	66.2	12	254
2010	May	26	0	0	56.34	- 0	42	3.6	20.507919	3.3	5.9	64.6w	3	99.9	66.2	12	254
2010	May	27	0	1	3.21	- 0	41	20.9	20.492754	3.3	5.9	65.5w	3	99.9	66.2	12	254
2010	May	28	0	1	9.93	- 0	40	39.2	20.477475	3.3	5.9	66.5w	3	99.9	66.2	12	254
2010	May	29	0	1	16.50	- 0	39	58.5	20.462087	3.4	5.9	67.4w	3	99.9	66.3	12	254
2010	May	30	0	1	22.92	- 0	39	18.9	20.446593	3.4	5.9	68.3w	3	99.9	66.3	12	254
2010	May	31	0	1	29.18	- 0	38	40.2	20.430997	3.4	5.9	69.3w	3	99.9	66.3	12	254
2010	Jun	1	0	1	35.29	- 0	38	2.6	20.415303	3.4	5.9	70.2w	3	99.9	66.3	12	254
2010	Jun	2	0	1	41.23	- 0	37	26.0	20.399514	3.4	5.9	71.1w	3	99.9	66.3	12	254
2010	Jun	3	0	1	47.02	- 0	36	50.5	20.383635	3.4	5.9	72.1w	3	99.9	66.3	12	254
2010	Jun	4	0	1	52.64	- 0	36	16.1	20.367670	3.4	5.9	73.0w	3	99.9	66.3	12	254
2010	Jun	5	0	1	58.10	- 0	35	42.7	20.351622	3.4	5.9	73.9w	3	99.9	66.3	12	254
2010	Jun	6	0	2	3.40	- 0	35	10.5	20.335496	3.4	5.9	74.9w	3	99.9	66.4	12	254
2010	Jun	7	0	2	8.54	- 0	34	39.3	20.319296	3.4	5.9	75.8w	3	99.9	66.4	12	254
2010	Jun	8	0	2	13.51	- 0	34	9.1	20.303027	3.4	5.9	76.7w	3	99.9	66.4	12	254
2010	Jun	9	0	2	18.31	- 0	33	40.1	20.286692	3.4	5.9	77.7w	3	99.9	66.4	12	254
2010	Jun	10	0	2	22.96	- 0	33	12.1	20.270297	3.4	5.9	78.6w	3	99.9	66.4	12	254
2010	Jun	11	0	2	27.44	- 0	32	45.2	20.253845	3.4	5.9	79.5w	3	99.9	66.4	12	254
2010	Jun	12	0	2	31.75	- 0	32	19.5	20.237343	3.4	5.9	80.5w	3	99.9	66.4	12	254
2010	Jun	13	0	2	35.89	- 0	31	54.8	20.220793	3.4	5.9	81.4w	3	99.9	66.4	12	254
2010	Jun	14	0	2	39.86	- 0	31	31.2	20.204202	3.4	5.9	82.4w	3	99.9	66.5	12	254
2010	Jun	15	0	2	43.66	- 0	31	8.8	20.187575	3.4	5.9	83.3w	3	99.9	66.5	13	254
2010	Jun	16	0	2	47.28	- 0	30	47.6	20.170915	3.4	5.9	84.2w	3	99.9	66.5	13	254
2010	Jun	17	0	2	50.73	- 0	30	27.5	20.154229	3.4	5.9	85.2w	3	99.9	66.5	13	254
2010	Jun	18	0	2	53.99	- 0	30	8.5	20.137520	3.4	5.9	86.1w	3	99.9	66.5	13	254
2010	Jun	19	0	2	57.09	- 0	29	50.8	20.120794	3.4	5.9	87.1w	3	99.9	66.5	13	254

Uranus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Jun	20	0	3	0.00	- 0	29	34.1	20.104056	3.4	5.8	88.0	w	3	99.9	66.5	13	254
2010	Jun	21	0	3	2.74	- 0	29	18.6	20.087310	3.4	5.8	88.9	w	3	99.9	66.5	13	254
2010	Jun	22	0	3	5.31	- 0	29	4.2	20.070559	3.4	5.8	89.9	w	3	99.9	66.6	13	254
2010	Jun	23	0	3	7.71	- 0	28	50.9	20.053810	3.4	5.8	90.8	w	3	99.9	66.6	13	254
2010	Jun	24	0	3	9.94	- 0	28	38.8	20.037066	3.4	5.8	91.8	w	3	99.9	66.6	13	254
2010	Jun	25	0	3	11.99	- 0	28	27.8	20.020331	3.4	5.8	92.7	w	3	99.9	66.6	13	254
2010	Jun	26	0	3	13.86	- 0	28	17.9	20.003610	3.4	5.8	93.7	w	3	99.9	66.6	13	254
2010	Jun	27	0	3	15.56	- 0	28	9.2	19.986907	3.4	5.8	94.6	w	3	99.9	66.6	13	254
2010	Jun	28	0	3	17.08	- 0	28	1.6	19.970226	3.4	5.8	95.5	w	3	99.9	66.6	13	254
2010	Jun	29	0	3	18.42	- 0	27	55.3	19.953571	3.4	5.8	96.5	w	3	99.9	66.6	13	254
2010	Jun	30	0	3	19.58	- 0	27	50.0	19.936948	3.4	5.8	97.4	w	3	99.9	66.7	13	254
2010	Jul	1	0	3	20.56	- 0	27	46.0	19.920360	3.4	5.8	98.4	w	3	99.9	66.7	13	254
2010	Jul	2	0	3	21.37	- 0	27	43.1	19.903812	3.4	5.8	99.3	w	3	99.9	66.7	13	254
2010	Jul	3	0	3	21.99	- 0	27	41.4	19.887309	3.4	5.8	100.3	w	3	99.9	66.7	13	254
2010	Jul	4	0	3	22.43	- 0	27	40.8	19.870854	3.5	5.8	101.2	w	3	99.9	66.7	13	254
2010	Jul	5	0	3	22.70	- 0	27	41.4	19.854453	3.5	5.8	102.2	w	3	99.9	66.7	13	254
2010	Jul	6	0	3	22.79	- 0	27	43.1	19.838110	3.5	5.8	103.1	w	3	99.9	66.7	13	254
2010	Jul	7	0	3	22.71	- 0	27	46.0	19.821831	3.5	5.8	104.1	w	3	99.9	66.8	13	254
2010	Jul	8	0	3	22.45	- 0	27	50.0	19.805619	3.5	5.8	105.1	w	3	99.9	66.8	13	254
2010	Jul	9	0	3	22.02	- 0	27	55.1	19.789480	3.5	5.8	106.0	w	3	99.9	66.8	13	254
2010	Jul	10	0	3	21.41	- 0	28	1.3	19.773418	3.5	5.8	107.0	w	3	99.9	66.8	13	254
2010	Jul	11	0	3	20.63	- 0	28	8.7	19.757439	3.5	5.8	107.9	w	3	99.9	66.8	13	254
2010	Jul	12	0	3	19.66	- 0	28	17.2	19.741548	3.5	5.8	108.9	w	3	99.9	66.8	13	254
2010	Jul	13	0	3	18.52	- 0	28	26.9	19.725750	3.5	5.8	109.8	w	3	99.9	66.8	13	254
2010	Jul	14	0	3	17.20	- 0	28	37.8	19.710049	3.5	5.8	110.8	w	3	99.9	66.9	13	254
2010	Jul	15	0	3	15.70	- 0	28	49.8	19.694451	3.5	5.8	111.8	w	3	99.9	66.9	13	254
2010	Jul	16	0	3	14.02	- 0	29	2.9	19.678961	3.5	5.8	112.7	w	3	99.9	66.9	13	254
2010	Jul	17	0	3	12.17	- 0	29	17.2	19.663582	3.5	5.8	113.7	w	3	99.9	66.9	13	254
2010	Jul	18	0	3	10.15	- 0	29	32.5	19.648321	3.5	5.8	114.7	w	3	99.9	66.9	13	254

Uranus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Jul	19	0	3	7.96	- 0	29	48.9	19.633180	3.5	5.8	115.6	w	3	99.9	66.9	13	254
2010	Jul	20	0	3	5.60	- 0	30	6.4	19.618165	3.5	5.8	116.6	w	3	99.9	66.9	13	254
2010	Jul	21	0	3	3.08	- 0	30	24.9	19.603279	3.5	5.8	117.6	w	3	99.9	67.0	13	254
2010	Jul	22	0	3	0.40	- 0	30	44.5	19.588527	3.5	5.8	118.5	w	3	100.0	67.0	13	254
2010	Jul	23	0	2	57.55	- 0	31	5.2	19.573912	3.5	5.8	119.5	w	3	100.0	67.0	13	254
2010	Jul	24	0	2	54.53	- 0	31	26.9	19.559439	3.5	5.8	120.5	w	2	100.0	67.0	13	254
2010	Jul	25	0	2	51.35	- 0	31	49.6	19.545112	3.5	5.8	121.4	w	2	100.0	67.0	13	254
2010	Jul	26	0	2	48.00	- 0	32	13.4	19.530935	3.5	5.8	122.4	w	2	100.0	67.1	13	254
2010	Jul	27	0	2	44.49	- 0	32	38.3	19.516911	3.5	5.8	123.4	w	2	100.0	67.1	12	254
2010	Jul	28	0	2	40.82	- 0	33	4.2	19.503045	3.5	5.8	124.3	w	2	100.0	67.1	12	254
2010	Jul	29	0	2	36.98	- 0	33	31.1	19.489341	3.5	5.8	125.3	w	2	100.0	67.1	12	254
2010	Jul	30	0	2	32.99	- 0	33	59.0	19.475802	3.5	5.8	126.3	w	2	100.0	67.1	12	254
2010	Jul	31	0	2	28.84	- 0	34	27.9	19.462433	3.5	5.8	127.3	w	2	100.0	67.1	12	254
2010	Aug	1	0	2	24.54	- 0	34	57.8	19.449239	3.5	5.8	128.2	w	2	100.0	67.2	12	254
2010	Aug	2	0	2	20.09	- 0	35	28.7	19.436222	3.5	5.8	129.2	w	2	100.0	67.2	12	254
2010	Aug	3	0	2	15.48	- 0	36	0.5	19.423387	3.5	5.8	130.2	w	2	100.0	67.2	12	254
2010	Aug	4	0	2	10.73	- 0	36	33.2	19.410739	3.5	5.8	131.2	w	2	100.0	67.2	12	254
2010	Aug	5	0	2	5.84	- 0	37	6.9	19.398281	3.5	5.8	132.2	w	2	100.0	67.3	12	254
2010	Aug	6	0	2	0.80	- 0	37	41.4	19.386017	3.5	5.8	133.1	w	2	100.0	67.3	12	254
2010	Aug	7	0	1	55.61	- 0	38	16.9	19.373952	3.5	5.8	134.1	w	2	100.0	67.3	12	254
2010	Aug	8	0	1	50.29	- 0	38	53.3	19.362090	3.5	5.8	135.1	w	2	100.0	67.3	12	254
2010	Aug	9	0	1	44.82	- 0	39	30.5	19.350436	3.5	5.8	136.1	w	2	100.0	67.4	12	254
2010	Aug	10	0	1	39.20	- 0	40	8.7	19.338992	3.5	5.8	137.1	w	2	100.0	67.4	12	254
2010	Aug	11	0	1	33.45	- 0	40	47.7	19.327764	3.5	5.8	138.1	w	2	100.0	67.4	12	254
2010	Aug	12	0	1	27.56	- 0	41	27.6	19.316756	3.5	5.8	139.0	w	2	100.0	67.5	12	254
2010	Aug	13	0	1	21.54	- 0	42	8.4	19.305970	3.6	5.8	140.0	w	2	100.0	67.5	12	254
2010	Aug	14	0	1	15.39	- 0	42	49.9	19.295411	3.6	5.8	141.0	w	2	100.0	67.5	12	254
2010	Aug	15	0	1	9.11	- 0	43	32.2	19.285082	3.6	5.8	142.0	w	2	100.0	67.6	12	254

Uranus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Aug	16	0	1	2.72	- 0	44	15.2	19.274985	3.6	5.8	143.0	w	2	100.0	67.6	12	254
2010	Aug	17	0	0	56.21	- 0	44	59.0	19.265125	3.6	5.8	144.0	w	2	100.0	67.6	12	254
2010	Aug	18	0	0	49.58	- 0	45	43.5	19.255504	3.6	5.8	145.0	w	2	100.0	67.7	12	254
2010	Aug	19	0	0	42.84	- 0	46	28.7	19.246125	3.6	5.8	146.0	w	2	100.0	67.7	12	254
2010	Aug	20	0	0	35.98	- 0	47	14.5	19.236990	3.6	5.8	147.0	w	2	100.0	67.8	12	254
2010	Aug	21	0	0	29.01	- 0	48	1.1	19.228103	3.6	5.7	148.0	w	2	100.0	67.8	12	254
2010	Aug	22	0	0	21.94	- 0	48	48.3	19.219465	3.6	5.7	148.9	w	1	100.0	67.9	12	254
2010	Aug	23	0	0	14.76	- 0	49	36.2	19.211080	3.6	5.7	149.9	w	1	100.0	67.9	12	254
2010	Aug	24	0	0	7.47	- 0	50	24.8	19.202950	3.6	5.7	150.9	w	1	100.0	68.0	12	254
2010	Aug	25	24	0	0.08	- 0	51	13.9	19.195078	3.6	5.7	151.9	w	1	100.0	68.0	12	254
2010	Aug	26	23	59	52.60	- 0	52	3.6	19.187466	3.6	5.7	152.9	w	1	100.0	68.1	12	254
2010	Aug	27	23	59	45.02	- 0	52	54.0	19.180117	3.6	5.7	153.9	w	1	100.0	68.2	12	254
2010	Aug	28	23	59	37.35	- 0	53	44.8	19.173033	3.6	5.7	154.9	w	1	100.0	68.2	12	254
2010	Aug	29	23	59	29.60	- 0	54	36.2	19.166217	3.6	5.7	155.9	w	1	100.0	68.3	12	254
2010	Aug	30	23	59	21.76	- 0	55	28.1	19.159670	3.6	5.7	156.9	w	1	100.0	68.4	12	254
2010	Aug	31	23	59	13.84	- 0	56	20.4	19.153396	3.6	5.7	157.9	w	1	100.0	68.5	12	254
2010	Sep	1	23	59	5.85	- 0	57	13.2	19.147398	3.6	5.7	158.9	w	1	100.0	68.6	12	254
2010	Sep	2	23	58	57.78	- 0	58	6.4	19.141676	3.6	5.7	159.9	w	1	100.0	68.7	11	254
2010	Sep	3	23	58	49.64	- 0	59	0.1	19.136234	3.6	5.7	160.9	w	1	100.0	68.8	11	254
2010	Sep	4	23	58	41.44	- 0	59	54.1	19.131075	3.6	5.7	162.0	w	1	100.0	69.0	11	254
2010	Sep	5	23	58	33.16	- 1	0	48.6	19.126199	3.6	5.7	163.0	w	1	100.0	69.1	11	254
2010	Sep	6	23	58	24.83	- 1	1	43.4	19.121610	3.6	5.7	164.0	w	1	100.0	69.3	11	254
2010	Sep	7	23	58	16.43	- 1	2	38.6	19.117310	3.6	5.7	165.0	w	1	100.0	69.5	11	254
2010	Sep	8	23	58	7.96	- 1	3	34.1	19.113301	3.6	5.7	166.0	w	1	100.0	69.7	11	254
2010	Sep	9	23	57	59.45	- 1	4	29.9	19.109584	3.6	5.7	167.0	w	1	100.0	70.0	11	254
2010	Sep	10	23	57	50.89	- 1	5	26.0	19.106161	3.6	5.7	168.0	w	1	100.0	70.3	11	254
2010	Sep	11	23	57	42.28	- 1	6	22.3	19.103033	3.6	5.7	169.0	w	1	100.0	70.6	11	254
2010	Sep	12	23	57	33.64	- 1	7	18.8	19.100202	3.6	5.7	170.0	w	0	100.0	71.0	11	254

Uranus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Sep	13	23	57	24.96	- 1	8	15.4	19.097668	3.6	5.7	171.0	w	0	100.0	71.5	11	254
2010	Sep	14	23	57	16.26	- 1	9	12.2	19.095432	3.6	5.7	172.0	w	0	100.0	72.2	11	254
2010	Sep	15	23	57	7.53	- 1	10	9.2	19.093494	3.6	5.7	173.0	w	0	100.0	73.0	11	254
2010	Sep	16	23	56	58.77	- 1	11	6.2	19.091856	3.6	5.7	174.0	w	0	100.0	74.1	11	254
2010	Sep	17	23	56	49.99	- 1	12	3.4	19.090517	3.6	5.7	175.1	w	0	100.0	75.7	11	254
2010	Sep	18	23	56	41.19	- 1	13	0.6	19.089478	3.6	5.7	176.1	w	0	100.0	78.0	11	254
2010	Sep	19	23	56	32.37	- 1	13	57.9	19.088740	3.6	5.7	177.0	w	0	100.0	82.0	11	254
2010	Sep	20	23	56	23.55	- 1	14	55.2	19.088302	3.6	5.7	178.0	w	0	100.0	89.7	11	254
2010	Sep	21	23	56	14.71	- 1	15	52.5	19.088164	3.6	5.7	178.9	w	0	100.0	110.3	11	254
2010	Sep	22	23	56	5.86	- 1	16	49.8	19.088327	3.6	5.7	179.2	w	0	100.0	170.6	11	254
2010	Sep	23	23	55	57.02	- 1	17	47.1	19.088791	3.6	5.7	178.6	e	0	100.0	213.6	11	254
2010	Sep	24	23	55	48.18	- 1	18	44.3	19.089556	3.6	5.7	177.6	e	0	100.0	227.2	11	254
2010	Sep	25	23	55	39.34	- 1	19	41.4	19.090622	3.6	5.7	176.7	e	0	100.0	233.0	11	254
2010	Sep	26	23	55	30.52	- 1	20	38.3	19.091988	3.6	5.7	175.7	e	0	100.0	236.2	11	254
2010	Sep	27	23	55	21.72	- 1	21	35.1	19.093655	3.6	5.7	174.7	e	0	100.0	238.1	10	254
2010	Sep	28	23	55	12.94	- 1	22	31.8	19.095623	3.6	5.7	173.6	e	0	100.0	239.5	10	254
2010	Sep	29	23	55	4.18	- 1	23	28.2	19.097891	3.6	5.7	172.6	e	0	100.0	240.5	10	254
2010	Sep	30	23	54	55.44	- 1	24	24.4	19.100460	3.6	5.7	171.6	e	0	100.0	241.2	10	254
2010	Oct	1	23	54	46.74	- 1	25	20.4	19.103328	3.6	5.7	170.6	e	0	100.0	241.8	10	254
2010	Oct	2	23	54	38.07	- 1	26	16.1	19.106496	3.6	5.7	169.6	e	1	100.0	242.3	10	254
2010	Oct	3	23	54	29.43	- 1	27	11.5	19.109963	3.6	5.7	168.6	e	1	100.0	242.7	10	254
2010	Oct	4	23	54	20.83	- 1	28	6.6	19.113729	3.6	5.7	167.5	e	1	100.0	243.0	10	254
2010	Oct	5	23	54	12.27	- 1	29	1.5	19.117793	3.6	5.7	166.5	e	1	100.0	243.3	10	254
2010	Oct	6	23	54	3.75	- 1	29	56.0	19.122154	3.6	5.7	165.5	e	1	100.0	243.5	10	254
2010	Oct	7	23	53	55.28	- 1	30	50.1	19.126811	3.6	5.7	164.5	e	1	100.0	243.7	10	254
2010	Oct	8	23	53	46.87	- 1	31	43.8	19.131763	3.6	5.7	163.4	e	1	100.0	243.9	10	254
2010	Oct	9	23	53	38.52	- 1	32	37.1	19.137008	3.6	5.7	162.4	e	1	100.0	244.1	10	254
2010	Oct	10	23	53	30.24	- 1	33	29.8	19.142546	3.6	5.7	161.4	e	1	100.0	244.2	10	254
2010	Oct	11	23	53	22.03	- 1	34	22.1	19.148372	3.6	5.7	160.4	e	1	100.0	244.4	10	254

Uranus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Oct	12	23	53	13.89	- 1	35	13.8	19.154487	3.6	5.7	159.3e		1	100.0	244.5	10	254
2010	Oct	13	23	53	5.83	- 1	36	5.0	19.160886	3.6	5.7	158.3e		1	100.0	244.6	10	254
2010	Oct	14	23	52	57.84	- 1	36	55.7	19.167569	3.6	5.7	157.3e		1	100.0	244.7	10	254
2010	Oct	15	23	52	49.93	- 1	37	45.8	19.174533	3.6	5.7	156.3e		1	100.0	244.8	10	254
2010	Oct	16	23	52	42.11	- 1	38	35.3	19.181775	3.6	5.7	155.2e		1	100.0	244.9	10	254
2010	Oct	17	23	52	34.37	- 1	39	24.3	19.189293	3.6	5.7	154.2e		1	100.0	245.0	10	254
2010	Oct	18	23	52	26.71	- 1	40	12.6	19.197084	3.6	5.7	153.2e		1	100.0	245.0	10	254
2010	Oct	19	23	52	19.15	- 1	41	0.2	19.205146	3.6	5.7	152.2e		1	100.0	245.1	10	254
2010	Oct	20	23	52	11.69	- 1	41	47.2	19.213476	3.6	5.7	151.1e		1	100.0	245.2	10	254
2010	Oct	21	23	52	4.33	- 1	42	33.6	19.222072	3.6	5.7	150.1e		1	100.0	245.2	10	254
2010	Oct	22	23	51	57.07	- 1	43	19.1	19.230931	3.6	5.7	149.1e		1	100.0	245.3	10	254
2010	Oct	23	23	51	49.91	- 1	44	4.0	19.240050	3.6	5.8	148.1e		2	100.0	245.3	10	254
2010	Oct	24	23	51	42.87	- 1	44	48.1	19.249426	3.6	5.8	147.0e		2	100.0	245.4	10	254
2010	Oct	25	23	51	35.95	- 1	45	31.4	19.259057	3.6	5.8	146.0e		2	100.0	245.4	9	254
2010	Oct	26	23	51	29.14	- 1	46	13.9	19.268940	3.6	5.8	145.0e		2	100.0	245.5	9	254
2010	Oct	27	23	51	22.45	- 1	46	55.6	19.279073	3.6	5.8	143.9e		2	100.0	245.5	9	254
2010	Oct	28	23	51	15.88	- 1	47	36.4	19.289452	3.6	5.8	142.9e		2	100.0	245.5	9	254
2010	Oct	29	23	51	9.44	- 1	48	16.5	19.300074	3.6	5.8	141.9e		2	100.0	245.6	9	254
2010	Oct	30	23	51	3.12	- 1	48	55.7	19.310937	3.6	5.8	140.9e		2	100.0	245.6	9	254
2010	Oct	31	23	50	56.93	- 1	49	34.0	19.322037	3.5	5.8	139.8e		2	100.0	245.7	9	254
2010	Nov	1	23	50	50.86	- 1	50	11.4	19.333372	3.5	5.8	138.8e		2	100.0	245.7	9	254
2010	Nov	2	23	50	44.93	- 1	50	48.0	19.344937	3.5	5.8	137.8e		2	100.0	245.7	9	254
2010	Nov	3	23	50	39.13	- 1	51	23.6	19.356730	3.5	5.8	136.8e		2	100.0	245.8	9	254
2010	Nov	4	23	50	33.47	- 1	51	58.3	19.368747	3.5	5.8	135.7e		2	100.0	245.8	9	254
2010	Nov	5	23	50	27.96	- 1	52	32.1	19.380985	3.5	5.8	134.7e		2	100.0	245.8	9	254
2010	Nov	6	23	50	22.60	- 1	53	4.8	19.393438	3.5	5.8	133.7e		2	100.0	245.8	9	254
2010	Nov	7	23	50	17.39	- 1	53	36.5	19.406103	3.5	5.8	132.7e		2	100.0	245.9	9	254
2010	Nov	8	23	50	12.33	- 1	54	7.1	19.418975	3.5	5.8	131.6e		2	100.0	245.9	9	254

Uranus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Nov	9	23	50	7.43	- 1	54	36.7	19.432051	3.5	5.8	130.6e		2	100.0	245.9	9	254
2010	Nov	10	23	50	2.68	- 1	55	5.3	19.445324	3.5	5.8	129.6e		2	100.0	245.9	9	254
2010	Nov	11	23	49	58.09	- 1	55	32.9	19.458792	3.5	5.8	128.5e		2	100.0	246.0	9	254
2010	Nov	12	23	49	53.66	- 1	55	59.4	19.472449	3.5	5.8	127.5e		2	100.0	246.0	9	254
2010	Nov	13	23	49	49.38	- 1	56	24.8	19.486290	3.5	5.8	126.5e		2	100.0	246.0	9	254
2010	Nov	14	23	49	45.27	- 1	56	49.2	19.500311	3.5	5.8	125.5e		2	100.0	246.0	9	254
2010	Nov	15	23	49	41.32	- 1	57	12.5	19.514508	3.5	5.8	124.5e		2	100.0	246.1	9	254
2010	Nov	16	23	49	37.54	- 1	57	34.7	19.528875	3.5	5.8	123.4e		2	100.0	246.1	9	254
2010	Nov	17	23	49	33.92	- 1	57	55.8	19.543408	3.5	5.8	122.4e		2	100.0	246.1	9	254
2010	Nov	18	23	49	30.47	- 1	58	15.7	19.558103	3.5	5.8	121.4e		2	100.0	246.1	9	254
2010	Nov	19	23	49	27.20	- 1	58	34.5	19.572954	3.5	5.8	120.4e		2	100.0	246.1	9	254
2010	Nov	20	23	49	24.10	- 1	58	52.2	19.587957	3.5	5.8	119.3e		2	100.0	246.2	9	254
2010	Nov	21	23	49	21.18	- 1	59	8.7	19.603109	3.5	5.8	118.3e		2	100.0	246.2	9	254
2010	Nov	22	23	49	18.43	- 1	59	24.0	19.618403	3.5	5.8	117.3e		3	100.0	246.2	9	254
2010	Nov	23	23	49	15.86	- 1	59	38.2	19.633835	3.5	5.8	116.3e		3	100.0	246.2	9	254
2010	Nov	24	23	49	13.48	- 1	59	51.2	19.649401	3.5	5.8	115.3e		3	100.0	246.2	9	254
2010	Nov	25	23	49	11.27	- 2	0	3.0	19.665097	3.5	5.8	114.2e		3	99.9	246.2	9	254
2010	Nov	26	23	49	9.24	- 2	0	13.6	19.680918	3.5	5.8	113.2e		3	99.9	246.3	9	254
2010	Nov	27	23	49	7.38	- 2	0	23.1	19.696858	3.5	5.8	112.2e		3	99.9	246.3	9	254
2010	Nov	28	23	49	5.71	- 2	0	31.4	19.712915	3.5	5.8	111.2e		3	99.9	246.3	9	254
2010	Nov	29	23	49	4.21	- 2	0	38.5	19.729082	3.5	5.8	110.2e		3	99.9	246.3	9	254
2010	Nov	30	23	49	2.90	- 2	0	44.4	19.745354	3.5	5.8	109.1e		3	99.9	246.3	9	254
2010	Dec	1	23	49	1.77	- 2	0	49.1	19.761728	3.5	5.8	108.1e		3	99.9	246.3	9	254
2010	Dec	2	23	49	0.83	- 2	0	52.5	19.778198	3.5	5.8	107.1e		3	99.9	246.4	9	254
2010	Dec	3	23	49	0.08	- 2	0	54.8	19.794757	3.5	5.8	106.1e		3	99.9	246.4	9	254
2010	Dec	4	23	48	59.53	- 2	0	55.7	19.811402	3.5	5.8	105.1e		3	99.9	246.4	9	254
2010	Dec	5	23	48	59.16	- 2	0	55.4	19.828127	3.5	5.8	104.1e		3	99.9	246.4	9	254
2010	Dec	6	23	48	58.98	- 2	0	53.9	19.844925	3.5	5.8	103.0e		3	99.9	246.4	9	254

Uranus
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Dec	7	23	48	59.00	- 2	0	51.1	19.861792	3.5	5.8	102.0e		3	99.9	246.4	9	254
2010	Dec	8	23	48	59.20	- 2	0	47.1	19.878721	3.4	5.8	101.0e		3	99.9	246.4	9	254
2010	Dec	9	23	48	59.60	- 2	0	41.9	19.895707	3.4	5.8	100.0e		3	99.9	246.5	9	254
2010	Dec	10	23	49	0.18	- 2	0	35.4	19.912745	3.4	5.8	99.0e		3	99.9	246.5	9	254
2010	Dec	11	23	49	0.95	- 2	0	27.8	19.929829	3.4	5.8	98.0e		3	99.9	246.5	9	254
2010	Dec	12	23	49	1.90	- 2	0	18.9	19.946953	3.4	5.8	97.0e		3	99.9	246.5	9	254
2010	Dec	13	23	49	3.05	- 2	0	8.7	19.964112	3.4	5.8	95.9e		3	99.9	246.5	9	254
2010	Dec	14	23	49	4.38	- 1	59	57.4	19.981301	3.4	5.8	94.9e		3	99.9	246.5	9	254
2010	Dec	15	23	49	5.91	- 1	59	44.8	19.998514	3.4	5.8	93.9e		3	99.9	246.5	9	254
2010	Dec	16	23	49	7.62	- 1	59	31.0	20.015747	3.4	5.8	92.9e		3	99.9	246.6	9	254
2010	Dec	17	23	49	9.53	- 1	59	16.0	20.032993	3.4	5.8	91.9e		3	99.9	246.6	9	254
2010	Dec	18	23	49	11.62	- 1	58	59.7	20.050247	3.4	5.8	90.9e		3	99.9	246.6	9	254
2010	Dec	19	23	49	13.91	- 1	58	42.2	20.067506	3.4	5.8	89.9e		3	99.9	246.6	9	254
2010	Dec	20	23	49	16.39	- 1	58	23.4	20.084763	3.4	5.8	88.9e		3	99.9	246.6	9	254
2010	Dec	21	23	49	19.05	- 1	58	3.5	20.102013	3.4	5.8	87.9e		3	99.9	246.6	9	254
2010	Dec	22	23	49	21.91	- 1	57	42.3	20.119253	3.4	5.9	86.9e		3	99.9	246.6	9	254
2010	Dec	23	23	49	24.94	- 1	57	19.9	20.136477	3.4	5.9	85.9e		3	99.9	246.6	9	254
2010	Dec	24	23	49	28.16	- 1	56	56.4	20.153679	3.4	5.9	84.9e		3	99.9	246.7	9	254
2010	Dec	25	23	49	31.56	- 1	56	31.7	20.170857	3.4	5.9	83.9e		3	99.9	246.7	9	254
2010	Dec	26	23	49	35.14	- 1	56	5.8	20.188004	3.4	5.9	82.9e		3	99.9	246.7	9	254
2010	Dec	27	23	49	38.91	- 1	55	38.8	20.205115	3.4	5.9	81.9e		3	99.9	246.7	9	254
2010	Dec	28	23	49	42.85	- 1	55	10.6	20.222186	3.4	5.9	80.9e		3	99.9	246.7	9	254
2010	Dec	29	23	49	46.97	- 1	54	41.2	20.239212	3.4	5.9	79.9e		3	99.9	246.7	9	254
2010	Dec	30	23	49	51.28	- 1	54	10.7	20.256188	3.4	5.9	78.9e		3	99.9	246.7	9	254
2010	Dec	31	23	49	55.78	- 1	53	38.9	20.273107	3.4	5.9	77.9e		3	99.9	246.7	9	254

http://digilander.libero.it/occultazioni

Neptune
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Jan	1	21	48	4.99	-13	43	19.5	30.720287	2.4	8.0	44.3e	1	100.0	250.9	-28	337
2010	Jan	2	21	48	11.86	-13	42	44.2	30.732282	2.4	8.0	43.3e	1	100.0	250.9	-28	337
2010	Jan	3	21	48	18.81	-13	42	8.4	30.744065	2.4	8.0	42.3e	1	100.0	251.0	-28	337
2010	Jan	4	21	48	25.84	-13	41	32.2	30.755630	2.4	8.0	41.3e	1	100.0	251.0	-28	337
2010	Jan	5	21	48	32.95	-13	40	55.6	30.766977	2.4	8.0	40.4e	1	100.0	251.0	-28	337
2010	Jan	6	21	48	40.14	-13	40	18.5	30.778100	2.4	8.0	39.4e	1	100.0	251.0	-28	337
2010	Jan	7	21	48	47.40	-13	39	41.1	30.788997	2.4	8.0	38.4e	1	100.0	251.0	-28	337
2010	Jan	8	21	48	54.75	-13	39	3.2	30.799665	2.4	8.0	37.4e	1	100.0	251.0	-28	337
2010	Jan	9	21	49	2.17	-13	38	24.9	30.810099	2.4	8.0	36.4e	1	100.0	251.0	-28	337
2010	Jan	10	21	49	9.67	-13	37	46.2	30.820296	2.4	8.0	35.4e	1	100.0	251.0	-28	337
2010	Jan	11	21	49	17.24	-13	37	7.1	30.830255	2.4	8.0	34.4e	1	100.0	251.0	-28	337
2010	Jan	12	21	49	24.88	-13	36	27.6	30.839970	2.4	8.0	33.4e	1	100.0	251.1	-28	337
2010	Jan	13	21	49	32.60	-13	35	47.8	30.849439	2.4	8.0	32.5e	1	100.0	251.1	-28	337
2010	Jan	14	21	49	40.38	-13	35	7.7	30.858660	2.4	8.0	31.5e	1	100.0	251.1	-28	337
2010	Jan	15	21	49	48.22	-13	34	27.2	30.867629	2.4	8.0	30.5e	1	100.0	251.1	-28	337
2010	Jan	16	21	49	56.13	-13	33	46.4	30.876344	2.4	8.0	29.5e	1	100.0	251.1	-28	337
2010	Jan	17	21	50	4.09	-13	33	5.3	30.884801	2.4	8.0	28.5e	1	100.0	251.2	-28	337
2010	Jan	18	21	50	12.11	-13	32	23.9	30.893000	2.4	8.0	27.5e	1	100.0	251.2	-28	337
2010	Jan	19	21	50	20.18	-13	31	42.3	30.900937	2.4	8.0	26.5e	1	100.0	251.2	-28	337
2010	Jan	20	21	50	28.30	-13	31	0.3	30.908610	2.4	8.0	25.6e	1	100.0	251.2	-28	337
2010	Jan	21	21	50	36.48	-13	30	18.0	30.916017	2.4	8.0	24.6e	1	100.0	251.3	-28	337
2010	Jan	22	21	50	44.70	-13	29	35.5	30.923157	2.4	8.0	23.6e	1	100.0	251.3	-28	337
2010	Jan	23	21	50	52.98	-13	28	52.7	30.930027	2.4	8.0	22.6e	1	100.0	251.4	-28	337
2010	Jan	24	21	51	1.30	-13	28	9.6	30.936626	2.4	8.0	21.6e	1	100.0	251.4	-28	337
2010	Jan	25	21	51	9.67	-13	27	26.3	30.942952	2.4	8.0	20.7e	1	100.0	251.4	-28	337
2010	Jan	26	21	51	18.09	-13	26	42.8	30.949005	2.4	8.0	19.7e	1	100.0	251.5	-28	337
2010	Jan	27	21	51	26.55	-13	25	59.0	30.954782	2.4	8.0	18.7e	1	100.0	251.6	-28	337
2010	Jan	28	21	51	35.05	-13	25	15.0	30.960283	2.4	8.0	17.7e	1	100.0	251.6	-28	337

Neptune
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Jan	29	21	51	43.58	-13	24	30.9	30.965507	2.4	8.0	16.7e	1	100.0	251.7	-28	337
2010	Jan	30	21	51	52.15	-13	23	46.6	30.970453	2.4	8.0	15.8e	1	100.0	251.8	-28	337
2010	Jan	31	21	52	0.74	-13	23	2.1	30.975120	2.4	8.0	14.8e	0	100.0	251.9	-28	337
2010	Feb	1	21	52	9.36	-13	22	17.5	30.979506	2.4	8.0	13.8e	0	100.0	252.0	-28	337
2010	Feb	2	21	52	18.00	-13	21	32.8	30.983610	2.4	8.0	12.8e	0	100.0	252.1	-28	337
2010	Feb	3	21	52	26.67	-13	20	47.9	30.987432	2.4	8.0	11.9e	0	100.0	252.3	-28	337
2010	Feb	4	21	52	35.36	-13	20	2.8	30.990970	2.4	8.0	10.9e	0	100.0	252.4	-28	337
2010	Feb	5	21	52	44.08	-13	19	17.6	30.994224	2.4	8.0	9.9e	0	100.0	252.7	-28	337
2010	Feb	6	21	52	52.82	-13	18	32.2	30.997190	2.4	8.0	8.9e	0	100.0	252.9	-28	337
2010	Feb	7	21	53	1.58	-13	17	46.7	30.999870	2.4	8.0	8.0e	0	100.0	253.2	-28	337
2010	Feb	8	21	53	10.37	-13	17	1.2	31.002261	2.4	8.0	7.0e	0	100.0	253.7	-28	336
2010	Feb	9	21	53	19.17	-13	16	15.5	31.004363	2.4	8.0	6.0e	0	100.0	254.2	-28	336
2010	Feb	10	21	53	27.98	-13	15	29.8	31.006175	2.4	8.0	5.0e	0	100.0	255.0	-28	336
2010	Feb	11	21	53	36.80	-13	14	44.0	31.007697	2.4	8.0	4.1e	0	100.0	256.1	-28	336
2010	Feb	12	21	53	45.62	-13	13	58.2	31.008928	2.4	8.0	3.1e	0	100.0	258.0	-28	336
2010	Feb	13	21	53	54.45	-13	13	12.4	31.009867	2.4	8.0	2.1e	0	100.0	261.6	-28	336
2010	Feb	14	21	54	3.29	-13	12	26.6	31.010516	2.4	8.0	1.2e	0	100.0	270.8	-28	336
2010	Feb	15	21	54	12.12	-13	11	40.7	31.010872	2.4	8.0	0.4e	0	100.0	320.9	-28	336
2010	Feb	16	21	54	20.95	-13	10	54.9	31.010937	2.4	8.0	0.9w	0	100.0	43.0	-28	336
2010	Feb	17	21	54	29.77	-13	10	9.0	31.010711	2.4	8.0	1.8w	0	100.0	56.9	-28	336
2010	Feb	18	21	54	38.59	-13	9	23.2	31.010194	2.4	8.0	2.8w	0	100.0	61.5	-28	336
2010	Feb	19	21	54	47.40	-13	8	37.4	31.009386	2.4	8.0	3.8w	0	100.0	63.7	-28	336
2010	Feb	20	21	54	56.21	-13	7	51.6	31.008289	2.4	8.0	4.7w	0	100.0	65.0	-28	336
2010	Feb	21	21	55	5.01	-13	7	5.8	31.006902	2.4	8.0	5.7w	0	100.0	65.9	-28	336
2010	Feb	22	21	55	13.80	-13	6	20.1	31.005227	2.4	8.0	6.7w	0	100.0	66.5	-28	336
2010	Feb	23	21	55	22.58	-13	5	34.4	31.003266	2.4	8.0	7.6w	0	100.0	66.9	-28	336
2010	Feb	24	21	55	31.34	-13	4	48.9	31.001018	2.4	8.0	8.6w	0	100.0	67.3	-28	336
2010	Feb	25	21	55	40.09	-13	4	3.4	30.998485	2.4	8.0	9.6w	0	100.0	67.6	-28	336

Neptune
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Feb	26	21	55	48.81	-13	3	18.1	30.995669	2.4	8.0	10.5w	0	100.0	67.8	-28	336
2010	Feb	27	21	55	57.50	-13	2	32.9	30.992570	2.4	8.0	11.5w	0	100.0	68.0	-28	336
2010	Feb	28	21	56	6.17	-13	1	47.8	30.989190	2.4	8.0	12.5w	0	100.0	68.1	-28	336
2010	Mar	1	21	56	14.80	-13	1	2.9	30.985530	2.4	8.0	13.4w	0	100.0	68.3	-28	336
2010	Mar	2	21	56	23.40	-13	0	18.1	30.981592	2.4	8.0	14.4w	0	100.0	68.4	-28	336
2010	Mar	3	21	56	31.98	-12	59	33.5	30.977376	2.4	8.0	15.4w	1	100.0	68.5	-28	336
2010	Mar	4	21	56	40.52	-12	58	49.0	30.972883	2.4	8.0	16.3w	1	100.0	68.6	-28	336
2010	Mar	5	21	56	49.04	-12	58	4.6	30.968114	2.4	8.0	17.3w	1	100.0	68.7	-28	336
2010	Mar	6	21	56	57.52	-12	57	20.5	30.963071	2.4	8.0	18.3w	1	100.0	68.7	-28	336
2010	Mar	7	21	57	5.97	-12	56	36.5	30.957755	2.4	8.0	19.2w	1	100.0	68.8	-28	336
2010	Mar	8	21	57	14.38	-12	55	52.7	30.952167	2.4	8.0	20.2w	1	100.0	68.8	-28	336
2010	Mar	9	21	57	22.74	-12	55	9.1	30.946308	2.4	8.0	21.2w	1	100.0	68.9	-28	336
2010	Mar	10	21	57	31.07	-12	54	25.8	30.940179	2.4	8.0	22.1w	1	100.0	68.9	-28	336
2010	Mar	11	21	57	39.35	-12	53	42.7	30.933784	2.4	8.0	23.1w	1	100.0	69.0	-28	336
2010	Mar	12	21	57	47.57	-12	52	59.9	30.927123	2.4	8.0	24.0w	1	100.0	69.0	-28	336
2010	Mar	13	21	57	55.75	-12	52	17.3	30.920198	2.4	8.0	25.0w	1	100.0	69.0	-28	336
2010	Mar	14	21	58	3.87	-12	51	35.0	30.913011	2.4	8.0	26.0w	1	100.0	69.1	-28	336
2010	Mar	15	21	58	11.94	-12	50	53.0	30.905565	2.4	8.0	26.9w	1	100.0	69.1	-28	336
2010	Mar	16	21	58	19.95	-12	50	11.3	30.897861	2.4	8.0	27.9w	1	100.0	69.1	-28	335
2010	Mar	17	21	58	27.91	-12	49	29.9	30.889903	2.4	8.0	28.9w	1	100.0	69.2	-28	335
2010	Mar	18	21	58	35.81	-12	48	48.8	30.881692	2.4	8.0	29.8w	1	100.0	69.2	-28	335
2010	Mar	19	21	58	43.65	-12	48	8.0	30.873231	2.4	8.0	30.8w	1	100.0	69.2	-28	335
2010	Mar	20	21	58	51.43	-12	47	27.4	30.864523	2.4	8.0	31.7w	1	100.0	69.2	-28	335
2010	Mar	21	21	58	59.15	-12	46	47.3	30.855572	2.4	8.0	32.7w	1	100.0	69.2	-28	335
2010	Mar	22	21	59	6.81	-12	46	7.4	30.846379	2.4	8.0	33.7w	1	100.0	69.2	-28	335
2010	Mar	23	21	59	14.40	-12	45	27.9	30.836948	2.4	8.0	34.6w	1	100.0	69.3	-28	335
2010	Mar	24	21	59	21.92	-12	44	48.8	30.827283	2.4	8.0	35.6w	1	100.0	69.3	-28	335
2010	Mar	25	21	59	29.37	-12	44	10.1	30.817385	2.4	8.0	36.5w	1	100.0	69.3	-28	335
2010	Mar	26	21	59	36.75	-12	43	31.8	30.807259	2.4	8.0	37.5w	1	100.0	69.3	-28	335

Neptune
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Mar	27	21	59	44.05	-12	42	53.8	30.796908	2.4	8.0	38.5	w	1	100.0	69.3	-28	335
2010	Mar	28	21	59	51.27	-12	42	16.4	30.786335	2.4	8.0	39.4	w	1	100.0	69.3	-28	335
2010	Mar	29	21	59	58.41	-12	41	39.3	30.775542	2.4	8.0	40.4	w	1	100.0	69.3	-28	335
2010	Mar	30	22	0	5.48	-12	41	2.6	30.764534	2.4	8.0	41.3	w	1	100.0	69.4	-28	335
2010	Mar	31	22	0	12.46	-12	40	26.3	30.753312	2.4	8.0	42.3	w	1	100.0	69.4	-28	335
2010	Apr	1	22	0	19.37	-12	39	50.4	30.741880	2.4	8.0	43.2	w	1	100.0	69.4	-28	335
2010	Apr	2	22	0	26.20	-12	39	15.0	30.730241	2.4	8.0	44.2	w	1	100.0	69.4	-28	335
2010	Apr	3	22	0	32.95	-12	38	40.0	30.718397	2.4	8.0	45.2	w	1	100.0	69.4	-28	335
2010	Apr	4	22	0	39.62	-12	38	5.4	30.706351	2.4	8.0	46.1	w	1	100.0	69.4	-28	335
2010	Apr	5	22	0	46.20	-12	37	31.3	30.694107	2.4	8.0	47.1	w	1	100.0	69.4	-28	335
2010	Apr	6	22	0	52.69	-12	36	57.7	30.681668	2.4	8.0	48.0	w	1	100.0	69.4	-28	335
2010	Apr	7	22	0	59.09	-12	36	24.6	30.669038	2.4	8.0	49.0	w	1	100.0	69.4	-28	335
2010	Apr	8	22	1	5.40	-12	35	52.0	30.656218	2.4	7.9	49.9	w	1	100.0	69.4	-28	335
2010	Apr	9	22	1	11.62	-12	35	19.9	30.643214	2.4	7.9	50.9	w	1	100.0	69.4	-28	335
2010	Apr	10	22	1	17.73	-12	34	48.3	30.630028	2.4	7.9	51.9	w	2	100.0	69.4	-28	335
2010	Apr	11	22	1	23.76	-12	34	17.2	30.616665	2.4	7.9	52.8	w	2	100.0	69.4	-28	335
2010	Apr	12	22	1	29.68	-12	33	46.7	30.603128	2.4	7.9	53.8	w	2	100.0	69.4	-28	335
2010	Apr	13	22	1	35.50	-12	33	16.6	30.589421	2.4	7.9	54.7	w	2	100.0	69.5	-28	335
2010	Apr	14	22	1	41.23	-12	32	47.1	30.575549	2.4	7.9	55.7	w	2	100.0	69.5	-28	335
2010	Apr	15	22	1	46.86	-12	32	18.2	30.561514	2.4	7.9	56.6	w	2	100.0	69.5	-28	335
2010	Apr	16	22	1	52.39	-12	31	49.7	30.547322	2.4	7.9	57.6	w	2	100.0	69.5	-28	335
2010	Apr	17	22	1	57.82	-12	31	21.8	30.532977	2.4	7.9	58.5	w	2	100.0	69.5	-28	335
2010	Apr	18	22	2	3.15	-12	30	54.5	30.518483	2.4	7.9	59.5	w	2	100.0	69.5	-28	335
2010	Apr	19	22	2	8.37	-12	30	27.7	30.503845	2.4	7.9	60.5	w	2	100.0	69.5	-28	335
2010	Apr	20	22	2	13.49	-12	30	1.5	30.489067	2.4	7.9	61.4	w	2	100.0	69.5	-28	335
2010	Apr	21	22	2	18.51	-12	29	35.9	30.474154	2.4	7.9	62.4	w	2	100.0	69.5	-28	335
2010	Apr	22	22	2	23.41	-12	29	10.9	30.459110	2.4	7.9	63.3	w	2	100.0	69.5	-28	335
2010	Apr	23	22	2	28.20	-12	28	46.5	30.443940	2.4	7.9	64.3	w	2	100.0	69.5	-28	335
2010	Apr	24	22	2	32.87	-12	28	22.8	30.428647	2.4	7.9	65.2	w	2	100.0	69.5	-28	335

Neptune
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Apr	25	22	2	37.43	-12	27	59.6	30.413238	2.4	7.9	66.2	w	2	100.0	69.5	-28	335
2010	Apr	26	22	2	41.88	-12	27	37.0	30.397715	2.4	7.9	67.1	w	2	100.0	69.5	-28	335
2010	Apr	27	22	2	46.22	-12	27	15.1	30.382083	2.4	7.9	68.1	w	2	100.0	69.5	-28	335
2010	Apr	28	22	2	50.45	-12	26	53.7	30.366346	2.4	7.9	69.1	w	2	100.0	69.5	-28	335
2010	Apr	29	22	2	54.56	-12	26	32.9	30.350508	2.4	7.9	70.0	w	2	100.0	69.5	-28	335
2010	Apr	30	22	2	58.57	-12	26	12.7	30.334574	2.4	7.9	71.0	w	2	100.0	69.5	-28	335
2010	May	1	22	3	2.46	-12	25	53.2	30.318546	2.4	7.9	71.9	w	2	100.0	69.5	-28	335
2010	May	2	22	3	6.24	-12	25	34.3	30.302430	2.4	7.9	72.9	w	2	100.0	69.5	-28	335
2010	May	3	22	3	9.90	-12	25	16.0	30.286229	2.4	7.9	73.8	w	2	100.0	69.6	-28	335
2010	May	4	22	3	13.44	-12	24	58.4	30.269949	2.4	7.9	74.8	w	2	100.0	69.6	-28	335
2010	May	5	22	3	16.86	-12	24	41.4	30.253592	2.4	7.9	75.7	w	2	100.0	69.6	-28	335
2010	May	6	22	3	20.16	-12	24	25.1	30.237163	2.4	7.9	76.7	w	2	100.0	69.6	-28	335
2010	May	7	22	3	23.34	-12	24	9.5	30.220668	2.4	7.9	77.6	w	2	100.0	69.6	-28	335
2010	May	8	22	3	26.40	-12	23	54.6	30.204110	2.4	7.9	78.6	w	2	100.0	69.6	-28	335
2010	May	9	22	3	29.33	-12	23	40.3	30.187495	2.4	7.9	79.6	w	2	100.0	69.6	-28	335
2010	May	10	22	3	32.14	-12	23	26.6	30.170826	2.4	7.9	80.5	w	2	100.0	69.6	-28	334
2010	May	11	22	3	34.82	-12	23	13.7	30.154110	2.4	7.9	81.5	w	2	100.0	69.6	-28	334
2010	May	12	22	3	37.39	-12	23	1.3	30.137350	2.4	7.9	82.4	w	2	100.0	69.6	-28	334
2010	May	13	22	3	39.83	-12	22	49.7	30.120551	2.4	7.9	83.4	w	2	100.0	69.6	-28	334
2010	May	14	22	3	42.16	-12	22	38.7	30.103719	2.4	7.9	84.3	w	2	100.0	69.6	-28	334
2010	May	15	22	3	44.36	-12	22	28.3	30.086859	2.4	7.9	85.3	w	2	100.0	69.6	-28	334
2010	May	16	22	3	46.44	-12	22	18.6	30.069975	2.4	7.9	86.2	w	2	100.0	69.6	-28	334
2010	May	17	22	3	48.40	-12	22	9.7	30.053073	2.4	7.9	87.2	w	2	100.0	69.6	-28	334
2010	May	18	22	3	50.23	-12	22	1.4	30.036159	2.4	7.9	88.2	w	2	100.0	69.6	-28	334
2010	May	19	22	3	51.93	-12	21	53.8	30.019236	2.4	7.9	89.1	w	2	100.0	69.6	-28	334
2010	May	20	22	3	53.51	-12	21	46.9	30.002311	2.4	7.9	90.1	w	2	100.0	69.6	-28	334
2010	May	21	22	3	54.95	-12	21	40.8	29.985387	2.4	7.9	91.0	w	2	100.0	69.7	-28	334
2010	May	22	22	3	56.26	-12	21	35.3	29.968471	2.4	7.9	92.0	w	2	100.0	69.7	-28	334

Neptune
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	May	23	22	3	57.45	-12	21	30.5	29.951566	2.4	7.9	92.9	w	2	100.0	69.7	-28	334
2010	May	24	22	3	58.51	-12	21	26.4	29.934678	2.4	7.9	93.9	w	2	100.0	69.7	-28	334
2010	May	25	22	3	59.45	-12	21	22.9	29.917810	2.4	7.9	94.9	w	2	100.0	69.7	-28	334
2010	May	26	22	4	0.27	-12	21	20.1	29.900968	2.4	7.9	95.8	w	2	100.0	69.7	-28	334
2010	May	27	22	4	0.97	-12	21	18.0	29.884155	2.4	7.9	96.8	w	2	100.0	69.7	-28	334
2010	May	28	22	4	1.54	-12	21	16.5	29.867376	2.4	7.9	97.7	w	2	100.0	69.7	-28	334
2010	May	29	22	4	1.99	-12	21	15.7	29.850635	2.4	7.9	98.7	w	2	100.0	69.7	-28	334
2010	May	30	22	4	2.31	-12	21	15.6	29.833937	2.5	7.9	99.6	w	2	100.0	69.7	-28	334
2010	May	31	22	4	2.51	-12	21	16.2	29.817286	2.5	7.9	100.6	w	2	100.0	69.7	-28	334
2010	Jun	1	22	4	2.59	-12	21	17.4	29.800686	2.5	7.9	101.6	w	2	100.0	69.7	-28	334
2010	Jun	2	22	4	2.53	-12	21	19.4	29.784143	2.5	7.9	102.5	w	2	100.0	69.7	-28	334
2010	Jun	3	22	4	2.35	-12	21	22.1	29.767660	2.5	7.9	103.5	w	2	100.0	69.7	-28	334
2010	Jun	4	22	4	2.05	-12	21	25.4	29.751242	2.5	7.9	104.4	w	2	100.0	69.8	-28	334
2010	Jun	5	22	4	1.61	-12	21	29.4	29.734895	2.5	7.9	105.4	w	2	100.0	69.8	-28	334
2010	Jun	6	22	4	1.05	-12	21	34.1	29.718622	2.5	7.9	106.4	w	2	100.0	69.8	-28	334
2010	Jun	7	22	4	0.37	-12	21	39.5	29.702428	2.5	7.9	107.3	w	2	100.0	69.8	-28	334
2010	Jun	8	22	3	59.57	-12	21	45.5	29.686318	2.5	7.9	108.3	w	2	100.0	69.8	-28	334
2010	Jun	9	22	3	58.64	-12	21	52.1	29.670297	2.5	7.9	109.2	w	2	100.0	69.8	-28	334
2010	Jun	10	22	3	57.60	-12	21	59.4	29.654371	2.5	7.9	110.2	w	2	100.0	69.8	-28	334
2010	Jun	11	22	3	56.44	-12	22	7.3	29.638542	2.5	7.9	111.2	w	2	100.0	69.8	-28	334
2010	Jun	12	22	3	55.16	-12	22	15.9	29.622818	2.5	7.9	112.1	w	2	100.0	69.8	-28	334
2010	Jun	13	22	3	53.76	-12	22	25.1	29.607201	2.5	7.9	113.1	w	2	100.0	69.8	-28	334
2010	Jun	14	22	3	52.24	-12	22	35.0	29.591699	2.5	7.9	114.0	w	2	100.0	69.9	-28	334
2010	Jun	15	22	3	50.60	-12	22	45.6	29.576314	2.5	7.9	115.0	w	2	100.0	69.9	-28	334
2010	Jun	16	22	3	48.84	-12	22	56.8	29.561052	2.5	7.9	116.0	w	2	100.0	69.9	-28	334
2010	Jun	17	22	3	46.95	-12	23	8.7	29.545918	2.5	7.9	116.9	w	2	100.0	69.9	-28	334
2010	Jun	18	22	3	44.95	-12	23	21.2	29.530916	2.5	7.9	117.9	w	2	100.0	69.9	-28	334
2010	Jun	19	22	3	42.83	-12	23	34.3	29.516051	2.5	7.9	118.9	w	2	100.0	69.9	-28	334

Neptune
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Jun	20	22	3	40.59	-12	23	48.0	29.501326	2.5	7.9	119.8	w	2	100.0	69.9	-28	334
2010	Jun	21	22	3	38.24	-12	24	2.4	29.486745	2.5	7.9	120.8	w	2	100.0	69.9	-28	334
2010	Jun	22	22	3	35.78	-12	24	17.3	29.472313	2.5	7.9	121.8	w	2	100.0	70.0	-28	334
2010	Jun	23	22	3	33.22	-12	24	32.7	29.458033	2.5	7.9	122.7	w	2	100.0	70.0	-28	334
2010	Jun	24	22	3	30.54	-12	24	48.8	29.443910	2.5	7.9	123.7	w	2	100.0	70.0	-28	335
2010	Jun	25	22	3	27.76	-12	25	5.4	29.429946	2.5	7.9	124.7	w	2	100.0	70.0	-28	335
2010	Jun	26	22	3	24.88	-12	25	22.6	29.416145	2.5	7.9	125.6	w	2	100.0	70.0	-28	335
2010	Jun	27	22	3	21.88	-12	25	40.4	29.402512	2.5	7.9	126.6	w	2	100.0	70.0	-28	335
2010	Jun	28	22	3	18.78	-12	25	58.7	29.389050	2.5	7.9	127.6	w	2	100.0	70.0	-28	335
2010	Jun	29	22	3	15.57	-12	26	17.7	29.375763	2.5	7.9	128.5	w	2	100.0	70.1	-28	335
2010	Jun	30	22	3	12.26	-12	26	37.2	29.362654	2.5	7.9	129.5	w	1	100.0	70.1	-28	335
2010	Jul	1	22	3	8.84	-12	26	57.3	29.349728	2.5	7.9	130.5	w	1	100.0	70.1	-28	335
2010	Jul	2	22	3	5.31	-12	27	17.9	29.336987	2.5	7.9	131.4	w	1	100.0	70.1	-28	335
2010	Jul	3	22	3	1.69	-12	27	39.0	29.324437	2.5	7.9	132.4	w	1	100.0	70.1	-28	335
2010	Jul	4	22	2	57.96	-12	28	0.6	29.312080	2.5	7.9	133.4	w	1	100.0	70.1	-28	335
2010	Jul	5	22	2	54.14	-12	28	22.8	29.299921	2.5	7.9	134.3	w	1	100.0	70.2	-28	335
2010	Jul	6	22	2	50.22	-12	28	45.4	29.287962	2.5	7.9	135.3	w	1	100.0	70.2	-28	335
2010	Jul	7	22	2	46.21	-12	29	8.6	29.276209	2.5	7.8	136.3	w	1	100.0	70.2	-28	335
2010	Jul	8	22	2	42.11	-12	29	32.2	29.264665	2.5	7.8	137.2	w	1	100.0	70.2	-28	335
2010	Jul	9	22	2	37.92	-12	29	56.2	29.253334	2.5	7.8	138.2	w	1	100.0	70.2	-28	335
2010	Jul	10	22	2	33.65	-12	30	20.8	29.242219	2.5	7.8	139.2	w	1	100.0	70.3	-28	335
2010	Jul	11	22	2	29.28	-12	30	45.8	29.231325	2.5	7.8	140.2	w	1	100.0	70.3	-28	335
2010	Jul	12	22	2	24.83	-12	31	11.3	29.220654	2.5	7.8	141.1	w	1	100.0	70.3	-28	335
2010	Jul	13	22	2	20.29	-12	31	37.2	29.210211	2.5	7.8	142.1	w	1	100.0	70.3	-28	335
2010	Jul	14	22	2	15.66	-12	32	3.7	29.199999	2.5	7.8	143.1	w	1	100.0	70.4	-28	335
2010	Jul	15	22	2	10.94	-12	32	30.5	29.190021	2.5	7.8	144.1	w	1	100.0	70.4	-28	335
2010	Jul	16	22	2	6.14	-12	32	57.8	29.180280	2.5	7.8	145.0	w	1	100.0	70.4	-28	335
2010	Jul	17	22	2	1.27	-12	33	25.4	29.170779	2.5	7.8	146.0	w	1	100.0	70.5	-28	335
2010	Jul	18	22	1	56.32	-12	33	53.5	29.161522	2.5	7.8	147.0	w	1	100.0	70.5	-28	335

Neptune
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Jul	19	22	1	51.29	-12	34	21.8	29.152509	2.5	7.8	148.0w	1	100.0	70.5	-28	335
2010	Jul	20	22	1	46.20	-12	34	50.6	29.143744	2.5	7.8	148.9w	1	100.0	70.6	-28	335
2010	Jul	21	22	1	41.04	-12	35	19.6	29.135229	2.5	7.8	149.9w	1	100.0	70.6	-28	335
2010	Jul	22	22	1	35.81	-12	35	49.1	29.126967	2.5	7.8	150.9w	1	100.0	70.6	-28	335
2010	Jul	23	22	1	30.52	-12	36	18.8	29.118958	2.5	7.8	151.9w	1	100.0	70.7	-28	335
2010	Jul	24	22	1	25.17	-12	36	48.9	29.111207	2.5	7.8	152.8w	1	100.0	70.7	-28	335
2010	Jul	25	22	1	19.75	-12	37	19.3	29.103714	2.5	7.8	153.8w	1	100.0	70.8	-28	335
2010	Jul	26	22	1	14.27	-12	37	50.0	29.096483	2.5	7.8	154.8w	1	100.0	70.8	-28	335
2010	Jul	27	22	1	8.73	-12	38	21.1	29.089514	2.5	7.8	155.8w	1	100.0	70.9	-28	335
2010	Jul	28	22	1	3.12	-12	38	52.4	29.082810	2.5	7.8	156.8w	1	100.0	70.9	-28	335
2010	Jul	29	22	0	57.46	-12	39	24.0	29.076374	2.5	7.8	157.7w	1	100.0	71.0	-28	335
2010	Jul	30	22	0	51.75	-12	39	55.9	29.070207	2.5	7.8	158.7w	1	100.0	71.0	-28	335
2010	Jul	31	22	0	45.99	-12	40	28.0	29.064311	2.5	7.8	159.7w	1	100.0	71.1	-28	335
2010	Aug	1	22	0	40.17	-12	41	0.4	29.058689	2.5	7.8	160.7w	1	100.0	71.2	-28	335
2010	Aug	2	22	0	34.31	-12	41	32.9	29.053342	2.5	7.8	161.7w	1	100.0	71.3	-28	335
2010	Aug	3	22	0	28.41	-12	42	5.7	29.048273	2.5	7.8	162.7w	1	100.0	71.4	-28	335
2010	Aug	4	22	0	22.47	-12	42	38.6	29.043482	2.5	7.8	163.6w	1	100.0	71.5	-28	335
2010	Aug	5	22	0	16.49	-12	43	11.7	29.038973	2.5	7.8	164.6w	1	100.0	71.6	-28	335
2010	Aug	6	22	0	10.48	-12	43	45.0	29.034747	2.5	7.8	165.6w	0	100.0	71.7	-28	335
2010	Aug	7	22	0	4.44	-12	44	18.4	29.030806	2.5	7.8	166.6w	0	100.0	71.9	-28	335
2010	Aug	8	21	59	58.35	-12	44	52.0	29.027151	2.5	7.8	167.6w	0	100.0	72.0	-28	335
2010	Aug	9	21	59	52.24	-12	45	25.8	29.023784	2.5	7.8	168.6w	0	100.0	72.2	-28	335
2010	Aug	10	21	59	46.10	-12	45	59.7	29.020708	2.5	7.8	169.5w	0	100.0	72.5	-28	335
2010	Aug	11	21	59	39.92	-12	46	33.8	29.017922	2.5	7.8	170.5w	0	100.0	72.8	-28	335
2010	Aug	12	21	59	33.72	-12	47	7.9	29.015428	2.5	7.8	171.5w	0	100.0	73.1	-28	335
2010	Aug	13	21	59	27.49	-12	47	42.2	29.013227	2.5	7.8	172.5w	0	100.0	73.6	-28	335
2010	Aug	14	21	59	21.24	-12	48	16.5	29.011320	2.5	7.8	173.5w	0	100.0	74.1	-28	335
2010	Aug	15	21	59	14.98	-12	48	50.8	29.009706	2.5	7.8	174.5w	0	100.0	74.9	-28	335

Neptune
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Aug	16	21	59	8.71	-12	49	25.1	29.008387	2.5	7.8	175.4	w	0	100.0	76.0	-28	335
2010	Aug	17	21	59	2.44	-12	49	59.5	29.007361	2.5	7.8	176.4	w	0	100.0	77.7	-28	335
2010	Aug	18	21	58	56.15	-12	50	33.8	29.006631	2.5	7.8	177.4	w	0	100.0	80.7	-28	335
2010	Aug	19	21	58	49.87	-12	51	8.2	29.006194	2.5	7.8	178.4	w	0	100.0	87.2	-28	335
2010	Aug	20	21	58	43.57	-12	51	42.6	29.006053	2.5	7.8	179.2	w	0	100.0	110.2	-28	335
2010	Aug	21	21	58	37.28	-12	52	16.9	29.006205	2.5	7.8	179.4	e	0	100.0	200.6	-28	335
2010	Aug	22	21	58	30.98	-12	52	51.3	29.006651	2.5	7.8	178.5	e	0	100.0	230.9	-28	335
2010	Aug	23	21	58	24.69	-12	53	25.6	29.007392	2.5	7.8	177.6	e	0	100.0	238.5	-28	335
2010	Aug	24	21	58	18.39	-12	53	59.8	29.008427	2.5	7.8	176.6	e	0	100.0	241.8	-28	336
2010	Aug	25	21	58	12.10	-12	54	34.1	29.009755	2.5	7.8	175.6	e	0	100.0	243.6	-28	336
2010	Aug	26	21	58	5.82	-12	55	8.2	29.011376	2.5	7.8	174.6	e	0	100.0	244.8	-28	336
2010	Aug	27	21	57	59.55	-12	55	42.2	29.013291	2.5	7.8	173.6	e	0	100.0	245.6	-28	336
2010	Aug	28	21	57	53.30	-12	56	16.1	29.015499	2.5	7.8	172.6	e	0	100.0	246.2	-28	336
2010	Aug	29	21	57	47.06	-12	56	49.9	29.017999	2.5	7.8	171.6	e	0	100.0	246.7	-28	336
2010	Aug	30	21	57	40.85	-12	57	23.6	29.020792	2.5	7.8	170.6	e	0	100.0	247.0	-28	336
2010	Aug	31	21	57	34.65	-12	57	57.0	29.023876	2.5	7.8	169.7	e	0	100.0	247.3	-28	336
2010	Sep	1	21	57	28.49	-12	58	30.3	29.027251	2.5	7.8	168.7	e	0	100.0	247.6	-28	336
2010	Sep	2	21	57	22.35	-12	59	3.5	29.030918	2.5	7.8	167.7	e	0	100.0	247.8	-28	336
2010	Sep	3	21	57	16.24	-12	59	36.4	29.034874	2.5	7.8	166.7	e	0	100.0	247.9	-28	336
2010	Sep	4	21	57	10.17	-13	0	9.2	29.039120	2.5	7.8	165.7	e	0	100.0	248.1	-28	336
2010	Sep	5	21	57	4.13	-13	0	41.8	29.043654	2.5	7.8	164.7	e	1	100.0	248.2	-28	336
2010	Sep	6	21	56	58.12	-13	1	14.2	29.048477	2.5	7.8	163.7	e	1	100.0	248.3	-28	336
2010	Sep	7	21	56	52.14	-13	1	46.3	29.053586	2.5	7.8	162.7	e	1	100.0	248.4	-28	336
2010	Sep	8	21	56	46.20	-13	2	18.3	29.058980	2.5	7.8	161.7	e	1	100.0	248.5	-28	336
2010	Sep	9	21	56	40.30	-13	2	49.9	29.064659	2.5	7.8	160.7	e	1	100.0	248.6	-28	336
2010	Sep	10	21	56	34.45	-13	3	21.3	29.070620	2.5	7.8	159.7	e	1	100.0	248.7	-28	336
2010	Sep	11	21	56	28.65	-13	3	52.4	29.076861	2.5	7.8	158.7	e	1	100.0	248.8	-28	336
2010	Sep	12	21	56	22.90	-13	4	23.2	29.083380	2.5	7.8	157.7	e	1	100.0	248.9	-28	336

Neptune
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Sep	13	21	56	17.21	-13	4	53.6	29.090176	2.5	7.8	156.7e		1	100.0	248.9	-28	336
2010	Sep	14	21	56	11.57	-13	5	23.7	29.097244	2.5	7.8	155.7e		1	100.0	249.0	-28	336
2010	Sep	15	21	56	6.00	-13	5	53.5	29.104584	2.5	7.8	154.7e		1	100.0	249.0	-28	336
2010	Sep	16	21	56	0.48	-13	6	22.9	29.112193	2.5	7.8	153.7e		1	100.0	249.1	-28	336
2010	Sep	17	21	55	55.03	-13	6	52.0	29.120067	2.5	7.8	152.7e		1	100.0	249.1	-28	336
2010	Sep	18	21	55	49.64	-13	7	20.8	29.128205	2.5	7.8	151.7e		1	100.0	249.2	-28	336
2010	Sep	19	21	55	44.31	-13	7	49.2	29.136605	2.5	7.8	150.7e		1	100.0	249.2	-28	336
2010	Sep	20	21	55	39.04	-13	8	17.2	29.145263	2.5	7.8	149.7e		1	100.0	249.2	-28	336
2010	Sep	21	21	55	33.85	-13	8	44.8	29.154177	2.5	7.8	148.7e		1	100.0	249.3	-28	336
2010	Sep	22	21	55	28.72	-13	9	12.1	29.163344	2.5	7.8	147.7e		1	100.0	249.3	-28	336
2010	Sep	23	21	55	23.67	-13	9	38.9	29.172762	2.5	7.8	146.7e		1	100.0	249.4	-28	336
2010	Sep	24	21	55	18.69	-13	10	5.3	29.182429	2.5	7.8	145.7e		1	100.0	249.4	-28	336
2010	Sep	25	21	55	13.79	-13	10	31.2	29.192340	2.5	7.8	144.7e		1	100.0	249.4	-28	336
2010	Sep	26	21	55	8.97	-13	10	56.7	29.202495	2.5	7.8	143.7e		1	100.0	249.4	-28	336
2010	Sep	27	21	55	4.24	-13	11	21.7	29.212889	2.5	7.8	142.7e		1	100.0	249.5	-28	336
2010	Sep	28	21	54	59.59	-13	11	46.2	29.223521	2.5	7.8	141.7e		1	100.0	249.5	-28	336
2010	Sep	29	21	54	55.03	-13	12	10.3	29.234387	2.5	7.8	140.7e		1	100.0	249.5	-28	336
2010	Sep	30	21	54	50.56	-13	12	33.9	29.245484	2.5	7.8	139.7e		1	100.0	249.6	-28	336
2010	Oct	1	21	54	46.18	-13	12	57.0	29.256811	2.5	7.8	138.7e		1	100.0	249.6	-28	336
2010	Oct	2	21	54	41.89	-13	13	19.6	29.268362	2.5	7.8	137.7e		1	100.0	249.6	-28	336
2010	Oct	3	21	54	37.69	-13	13	41.7	29.280136	2.5	7.8	136.7e		1	100.0	249.6	-28	336
2010	Oct	4	21	54	33.58	-13	14	3.3	29.292130	2.5	7.9	135.7e		1	100.0	249.6	-28	336
2010	Oct	5	21	54	29.56	-13	14	24.5	29.304339	2.5	7.9	134.7e		1	100.0	249.7	-28	336
2010	Oct	6	21	54	25.64	-13	14	45.1	29.316760	2.5	7.9	133.7e		1	100.0	249.7	-28	336
2010	Oct	7	21	54	21.82	-13	15	5.1	29.329390	2.5	7.9	132.7e		1	100.0	249.7	-28	336
2010	Oct	8	21	54	18.10	-13	15	24.5	29.342224	2.5	7.9	131.7e		1	100.0	249.7	-28	336
2010	Oct	9	21	54	14.48	-13	15	43.4	29.355258	2.5	7.9	130.7e		1	100.0	249.7	-28	336
2010	Oct	10	21	54	10.98	-13	16	1.7	29.368488	2.5	7.9	129.7e		1	100.0	249.8	-28	336
2010	Oct	11	21	54	7.58	-13	16	19.4	29.381909	2.5	7.9	128.7e		1	100.0	249.8	-28	336

Neptune
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb		De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o		o	o
2010	Oct	12	21	54	4.30	-13	16	36.4	29.395518	2.5	7.9	127.7	e	2	100.0	249.8		-28	336
2010	Oct	13	21	54	1.12	-13	16	52.9	29.409309	2.5	7.9	126.7	e	2	100.0	249.8		-28	336
2010	Oct	14	21	53	58.06	-13	17	8.9	29.423278	2.5	7.9	125.7	e	2	100.0	249.8		-28	336
2010	Oct	15	21	53	55.11	-13	17	24.2	29.437420	2.5	7.9	124.7	e	2	100.0	249.8		-28	336
2010	Oct	16	21	53	52.27	-13	17	39.0	29.451732	2.5	7.9	123.7	e	2	100.0	249.9		-28	336
2010	Oct	17	21	53	49.53	-13	17	53.1	29.466208	2.5	7.9	122.7	e	2	100.0	249.9		-28	336
2010	Oct	18	21	53	46.92	-13	18	6.6	29.480845	2.5	7.9	121.7	e	2	100.0	249.9		-28	336
2010	Oct	19	21	53	44.42	-13	18	19.5	29.495637	2.5	7.9	120.7	e	2	100.0	249.9		-28	336
2010	Oct	20	21	53	42.03	-13	18	31.8	29.510580	2.5	7.9	119.7	e	2	100.0	249.9		-28	336
2010	Oct	21	21	53	39.76	-13	18	43.5	29.525670	2.5	7.9	118.7	e	2	100.0	249.9		-28	336
2010	Oct	22	21	53	37.61	-13	18	54.5	29.540903	2.5	7.9	117.7	e	2	100.0	249.9		-28	336
2010	Oct	23	21	53	35.59	-13	19	4.8	29.556274	2.5	7.9	116.7	e	2	100.0	250.0		-28	336
2010	Oct	24	21	53	33.68	-13	19	14.5	29.571778	2.5	7.9	115.7	e	2	100.0	250.0		-28	336
2010	Oct	25	21	53	31.91	-13	19	23.5	29.587411	2.5	7.9	114.7	e	2	100.0	250.0		-28	336
2010	Oct	26	21	53	30.26	-13	19	31.8	29.603170	2.5	7.9	113.7	e	2	100.0	250.0		-28	336
2010	Oct	27	21	53	28.73	-13	19	39.5	29.619049	2.5	7.9	112.7	e	2	100.0	250.0		-28	336
2010	Oct	28	21	53	27.34	-13	19	46.5	29.635043	2.5	7.9	111.6	e	2	100.0	250.0		-28	336
2010	Oct	29	21	53	26.06	-13	19	52.9	29.651149	2.5	7.9	110.6	e	2	100.0	250.0		-28	336
2010	Oct	30	21	53	24.91	-13	19	58.6	29.667362	2.5	7.9	109.6	e	2	100.0	250.0		-28	336
2010	Oct	31	21	53	23.89	-13	20	3.6	29.683677	2.5	7.9	108.6	e	2	100.0	250.0		-28	336
2010	Nov	1	21	53	22.99	-13	20	8.0	29.700090	2.5	7.9	107.6	e	2	100.0	250.1		-28	336
2010	Nov	2	21	53	22.22	-13	20	11.7	29.716595	2.5	7.9	106.6	e	2	100.0	250.1		-28	336
2010	Nov	3	21	53	21.57	-13	20	14.8	29.733187	2.5	7.9	105.6	e	2	100.0	250.1		-28	336
2010	Nov	4	21	53	21.06	-13	20	17.1	29.749862	2.5	7.9	104.6	e	2	100.0	250.1		-28	336
2010	Nov	5	21	53	20.68	-13	20	18.7	29.766614	2.5	7.9	103.6	e	2	100.0	250.1		-28	336
2010	Nov	6	21	53	20.43	-13	20	19.6	29.783437	2.5	7.9	102.6	e	2	100.0	250.1		-28	336
2010	Nov	7	21	53	20.32	-13	20	19.7	29.800326	2.5	7.9	101.6	e	2	100.0	250.1		-28	336
2010	Nov	8	21	53	20.34	-13	20	19.2	29.817275	2.5	7.9	100.6	e	2	100.0	250.1		-28	336

Neptune
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Nov	9	21	53	20.50	-13	20	18.0	29.834280	2.5	7.9	99.6e	2	100.0	250.1	-28	336
2010	Nov	10	21	53	20.79	-13	20	16.0	29.851333	2.4	7.9	98.6e	2	100.0	250.1	-28	336
2010	Nov	11	21	53	21.22	-13	20	13.4	29.868430	2.4	7.9	97.6e	2	100.0	250.1	-28	336
2010	Nov	12	21	53	21.77	-13	20	10.1	29.885566	2.4	7.9	96.6e	2	100.0	250.2	-28	336
2010	Nov	13	21	53	22.45	-13	20	6.1	29.902735	2.4	7.9	95.6e	2	100.0	250.2	-28	336
2010	Nov	14	21	53	23.27	-13	20	1.5	29.919931	2.4	7.9	94.6e	2	100.0	250.2	-28	336
2010	Nov	15	21	53	24.21	-13	19	56.1	29.937150	2.4	7.9	93.6e	2	100.0	250.2	-28	336
2010	Nov	16	21	53	25.29	-13	19	50.1	29.954386	2.4	7.9	92.6e	2	100.0	250.2	-28	336
2010	Nov	17	21	53	26.50	-13	19	43.3	29.971635	2.4	7.9	91.6e	2	100.0	250.2	-28	336
2010	Nov	18	21	53	27.84	-13	19	35.9	29.988890	2.4	7.9	90.6e	2	100.0	250.2	-28	336
2010	Nov	19	21	53	29.31	-13	19	27.7	30.006147	2.4	7.9	89.6e	2	100.0	250.2	-28	336
2010	Nov	20	21	53	30.92	-13	19	18.8	30.023402	2.4	7.9	88.6e	2	100.0	250.2	-28	336
2010	Nov	21	21	53	32.67	-13	19	9.2	30.040648	2.4	7.9	87.6e	2	100.0	250.2	-28	336
2010	Nov	22	21	53	34.54	-13	18	58.9	30.057882	2.4	7.9	86.6e	2	100.0	250.2	-28	336
2010	Nov	23	21	53	36.56	-13	18	47.9	30.075098	2.4	7.9	85.6e	2	100.0	250.2	-28	336
2010	Nov	24	21	53	38.70	-13	18	36.3	30.092291	2.4	7.9	84.6e	2	100.0	250.2	-28	336
2010	Nov	25	21	53	40.97	-13	18	23.9	30.109457	2.4	7.9	83.6e	2	100.0	250.2	-28	336
2010	Nov	26	21	53	43.38	-13	18	10.9	30.126591	2.4	7.9	82.6e	2	100.0	250.3	-28	336
2010	Nov	27	21	53	45.91	-13	17	57.3	30.143688	2.4	7.9	81.6e	2	100.0	250.3	-28	336
2010	Nov	28	21	53	48.56	-13	17	43.0	30.160743	2.4	7.9	80.6e	2	100.0	250.3	-28	336
2010	Nov	29	21	53	51.34	-13	17	28.0	30.177751	2.4	7.9	79.6e	2	100.0	250.3	-28	336
2010	Nov	30	21	53	54.25	-13	17	12.3	30.194706	2.4	7.9	78.6e	2	100.0	250.3	-28	336
2010	Dec	1	21	53	57.29	-13	16	56.0	30.211604	2.4	7.9	77.6e	2	100.0	250.3	-28	336
2010	Dec	2	21	54	0.45	-13	16	38.9	30.228440	2.4	7.9	76.6e	2	100.0	250.3	-28	336
2010	Dec	3	21	54	3.74	-13	16	21.2	30.245207	2.4	7.9	75.6e	2	100.0	250.3	-28	336
2010	Dec	4	21	54	7.17	-13	16	2.7	30.261900	2.4	7.9	74.6e	2	100.0	250.3	-28	336
2010	Dec	5	21	54	10.72	-13	15	43.7	30.278515	2.4	7.9	73.6e	2	100.0	250.3	-28	336
2010	Dec	6	21	54	14.40	-13	15	23.9	30.295045	2.4	7.9	72.6e	2	100.0	250.3	-28	336

Neptune
Apparent position

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Dec	7	21	54	18.21	-13	15	3.5	30.311486	2.4	7.9	71.6e	2	100.0	250.3	-28	336
2010	Dec	8	21	54	22.14	-13	14	42.5	30.327831	2.4	7.9	70.6e	2	100.0	250.3	-28	336
2010	Dec	9	21	54	26.19	-13	14	20.8	30.344077	2.4	7.9	69.6e	2	100.0	250.3	-28	336
2010	Dec	10	21	54	30.35	-13	13	58.5	30.360217	2.4	7.9	68.6e	2	100.0	250.3	-28	336
2010	Dec	11	21	54	34.64	-13	13	35.7	30.376248	2.4	7.9	67.6e	2	100.0	250.3	-28	336
2010	Dec	12	21	54	39.04	-13	13	12.2	30.392163	2.4	7.9	66.6e	2	100.0	250.3	-28	336
2010	Dec	13	21	54	43.55	-13	12	48.1	30.407959	2.4	7.9	65.6e	2	100.0	250.4	-28	336
2010	Dec	14	21	54	48.19	-13	12	23.3	30.423630	2.4	7.9	64.6e	2	100.0	250.4	-28	336
2010	Dec	15	21	54	52.93	-13	11	58.0	30.439173	2.4	7.9	63.6e	2	100.0	250.4	-28	336
2010	Dec	16	21	54	57.79	-13	11	32.0	30.454582	2.4	7.9	62.6e	2	100.0	250.4	-28	336
2010	Dec	17	21	55	2.77	-13	11	5.5	30.469854	2.4	7.9	61.6e	2	100.0	250.4	-28	336
2010	Dec	18	21	55	7.86	-13	10	38.3	30.484983	2.4	7.9	60.6e	2	100.0	250.4	-28	336
2010	Dec	19	21	55	13.06	-13	10	10.5	30.499967	2.4	7.9	59.6e	2	100.0	250.4	-28	336
2010	Dec	20	21	55	18.38	-13	9	42.2	30.514801	2.4	7.9	58.6e	2	100.0	250.4	-28	336
2010	Dec	21	21	55	23.81	-13	9	13.3	30.529480	2.4	7.9	57.6e	2	100.0	250.4	-28	336
2010	Dec	22	21	55	29.34	-13	8	43.8	30.544001	2.4	7.9	56.6e	2	100.0	250.4	-28	336
2010	Dec	23	21	55	34.97	-13	8	13.8	30.558361	2.4	7.9	55.6e	2	100.0	250.4	-28	336
2010	Dec	24	21	55	40.71	-13	7	43.3	30.572554	2.4	7.9	54.6e	2	100.0	250.4	-28	336
2010	Dec	25	21	55	46.55	-13	7	12.2	30.586578	2.4	7.9	53.7e	2	100.0	250.4	-28	336
2010	Dec	26	21	55	52.48	-13	6	40.7	30.600427	2.4	7.9	52.7e	1	100.0	250.4	-28	336
2010	Dec	27	21	55	58.51	-13	6	8.6	30.614099	2.4	7.9	51.7e	1	100.0	250.4	-28	336
2010	Dec	28	21	56	4.64	-13	5	35.9	30.627589	2.4	7.9	50.7e	1	100.0	250.5	-28	336
2010	Dec	29	21	56	10.87	-13	5	2.8	30.640893	2.4	7.9	49.7e	1	100.0	250.5	-28	336
2010	Dec	30	21	56	17.19	-13	4	29.1	30.654007	2.4	7.9	48.7e	1	100.0	250.5	-28	336
2010	Dec	31	21	56	23.62	-13	3	54.8	30.666926	2.4	7.9	47.7e	1	100.0	250.5	-28	336

http://digilander.libero.it/occultazioni

Pluto
Equinox of J2000

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Jan	1	18	13	18.29	-18	18	8.1	32.734332	0.2	14.1	8.8w	0	100.0	124.0	-42	58
2010	Jan	2	18	13	27.37	-18	18	9.6	32.732544	0.2	14.1	9.6w	0	100.0	120.6	-42	58
2010	Jan	3	18	13	36.42	-18	18	10.9	32.730468	0.2	14.1	10.4w	0	100.0	117.6	-42	58
2010	Jan	4	18	13	45.46	-18	18	12.1	32.728105	0.2	14.1	11.3w	0	100.0	115.2	-42	58
2010	Jan	5	18	13	54.47	-18	18	13.1	32.725456	0.2	14.1	12.2w	0	100.0	113.0	-42	58
2010	Jan	6	18	14	3.46	-18	18	13.8	32.722520	0.2	14.1	13.1w	0	100.0	111.2	-42	58
2010	Jan	7	18	14	12.42	-18	18	14.4	32.719298	0.2	14.1	14.0w	0	100.0	109.6	-42	58
2010	Jan	8	18	14	21.35	-18	18	14.8	32.715792	0.2	14.1	14.9w	0	100.0	108.1	-42	58
2010	Jan	9	18	14	30.26	-18	18	15.1	32.712002	0.2	14.1	15.8w	0	100.0	106.9	-42	58
2010	Jan	10	18	14	39.13	-18	18	15.1	32.707928	0.2	14.1	16.8w	1	100.0	105.7	-42	58
2010	Jan	11	18	14	47.97	-18	18	15.0	32.703572	0.2	14.1	17.7w	1	100.0	104.7	-43	58
2010	Jan	12	18	14	56.77	-18	18	14.7	32.698935	0.2	14.1	18.6w	1	100.0	103.8	-43	58
2010	Jan	13	18	15	5.53	-18	18	14.2	32.694019	0.2	14.1	19.6w	1	100.0	103.0	-43	58
2010	Jan	14	18	15	14.25	-18	18	13.6	32.688824	0.2	14.1	20.5w	1	100.0	102.2	-43	58
2010	Jan	15	18	15	22.92	-18	18	12.8	32.683353	0.2	14.1	21.5w	1	100.0	101.5	-43	58
2010	Jan	16	18	15	31.55	-18	18	11.8	32.677608	0.2	14.1	22.5w	1	100.0	100.9	-43	58
2010	Jan	17	18	15	40.13	-18	18	10.6	32.671589	0.2	14.1	23.4w	1	100.0	100.3	-43	58
2010	Jan	18	18	15	48.66	-18	18	9.3	32.665301	0.2	14.1	24.4w	1	100.0	99.7	-43	58
2010	Jan	19	18	15	57.14	-18	18	7.8	32.658744	0.2	14.1	25.3w	1	100.0	99.2	-43	58
2010	Jan	20	18	16	5.56	-18	18	6.2	32.651921	0.2	14.1	26.3w	1	100.0	98.8	-43	58
2010	Jan	21	18	16	13.93	-18	18	4.4	32.644834	0.2	14.1	27.3w	1	100.0	98.3	-43	58
2010	Jan	22	18	16	22.24	-18	18	2.5	32.637486	0.2	14.1	28.2w	1	100.0	97.9	-43	58
2010	Jan	23	18	16	30.49	-18	18	0.4	32.629879	0.2	14.1	29.2w	1	100.0	97.5	-43	58
2010	Jan	24	18	16	38.68	-18	17	58.2	32.622017	0.2	14.1	30.2w	1	100.0	97.1	-43	58
2010	Jan	25	18	16	46.80	-18	17	55.9	32.613902	0.2	14.1	31.1w	1	100.0	96.8	-43	58
2010	Jan	26	18	16	54.85	-18	17	53.4	32.605536	0.2	14.1	32.1w	1	100.0	96.5	-43	58
2010	Jan	27	18	17	2.84	-18	17	50.7	32.596924	0.2	14.1	33.1w	1	100.0	96.1	-43	58
2010	Jan	28	18	17	10.76	-18	17	48.0	32.588066	0.2	14.1	34.0w	1	100.0	95.8	-43	58
2010	Jan	29	18	17	18.61	-18	17	45.1	32.578968	0.2	14.1	35.0w	1	100.0	95.6	-43	58

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Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Jan	30	18	17	26.38	-18	17	42.0	32.569630	0.2	14.1	36.0	w	1	100.0	95.3	-43	58
2010	Jan	31	18	17	34.08	-18	17	38.9	32.560056	0.2	14.1	37.0	w	1	100.0	95.0	-43	58
2010	Feb	1	18	17	41.71	-18	17	35.6	32.550249	0.2	14.1	37.9	w	1	100.0	94.8	-43	58
2010	Feb	2	18	17	49.25	-18	17	32.2	32.540211	0.2	14.1	38.9	w	1	100.0	94.5	-43	57
2010	Feb	3	18	17	56.72	-18	17	28.7	32.529944	0.2	14.1	39.9	w	1	100.0	94.3	-43	57
2010	Feb	4	18	18	4.11	-18	17	25.1	32.519453	0.2	14.1	40.9	w	1	100.0	94.1	-43	57
2010	Feb	5	18	18	11.41	-18	17	21.3	32.508738	0.2	14.1	41.8	w	1	100.0	93.9	-43	57
2010	Feb	6	18	18	18.62	-18	17	17.5	32.497804	0.2	14.1	42.8	w	1	100.0	93.7	-43	57
2010	Feb	7	18	18	25.76	-18	17	13.5	32.486653	0.2	14.1	43.8	w	1	100.0	93.5	-43	57
2010	Feb	8	18	18	32.80	-18	17	9.5	32.475289	0.2	14.1	44.8	w	1	100.0	93.3	-43	57
2010	Feb	9	18	18	39.75	-18	17	5.3	32.463714	0.2	14.1	45.8	w	1	100.0	93.1	-43	57
2010	Feb	10	18	18	46.61	-18	17	1.1	32.451934	0.2	14.1	46.7	w	1	100.0	92.9	-43	57
2010	Feb	11	18	18	53.38	-18	16	56.7	32.439950	0.2	14.1	47.7	w	1	100.0	92.8	-43	57
2010	Feb	12	18	19	0.05	-18	16	52.3	32.427767	0.2	14.1	48.7	w	1	100.0	92.6	-43	57
2010	Feb	13	18	19	6.62	-18	16	47.8	32.415389	0.2	14.1	49.7	w	1	100.0	92.4	-43	57
2010	Feb	14	18	19	13.09	-18	16	43.2	32.402820	0.2	14.1	50.6	w	1	100.0	92.3	-43	57
2010	Feb	15	18	19	19.47	-18	16	38.5	32.390063	0.2	14.1	51.6	w	1	100.0	92.1	-43	57
2010	Feb	16	18	19	25.74	-18	16	33.8	32.377123	0.2	14.1	52.6	w	1	100.0	92.0	-43	57
2010	Feb	17	18	19	31.91	-18	16	29.0	32.364004	0.2	14.1	53.6	w	1	100.0	91.8	-43	57
2010	Feb	18	18	19	37.98	-18	16	24.1	32.350711	0.2	14.1	54.6	w	1	100.0	91.7	-43	57
2010	Feb	19	18	19	43.93	-18	16	19.2	32.337247	0.2	14.1	55.5	w	1	100.0	91.5	-44	57
2010	Feb	20	18	19	49.78	-18	16	14.2	32.323618	0.2	14.1	56.5	w	1	100.0	91.4	-44	57
2010	Feb	21	18	19	55.53	-18	16	9.1	32.309827	0.2	14.1	57.5	w	2	100.0	91.3	-44	57
2010	Feb	22	18	20	1.16	-18	16	4.0	32.295880	0.2	14.1	58.5	w	2	100.0	91.1	-44	57
2010	Feb	23	18	20	6.68	-18	15	58.9	32.281780	0.2	14.1	59.5	w	2	100.0	91.0	-44	57
2010	Feb	24	18	20	12.09	-18	15	53.7	32.267533	0.2	14.1	60.4	w	2	100.0	90.9	-44	57
2010	Feb	25	18	20	17.38	-18	15	48.5	32.253142	0.2	14.1	61.4	w	2	100.0	90.8	-44	57
2010	Feb	26	18	20	22.56	-18	15	43.3	32.238613	0.2	14.1	62.4	w	2	100.0	90.6	-44	57

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Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Feb	27	18	20	27.63	-18	15	38.0	32.223950	0.2	14.1	63.4w	2	100.0	90.5	-44	57
2010	Feb	28	18	20	32.58	-18	15	32.7	32.209156	0.2	14.1	64.4w	2	100.0	90.4	-44	57
2010	Mar	1	18	20	37.41	-18	15	27.3	32.194236	0.2	14.1	65.3w	2	100.0	90.3	-44	57
2010	Mar	2	18	20	42.12	-18	15	22.0	32.179194	0.2	14.1	66.3w	2	100.0	90.2	-44	57
2010	Mar	3	18	20	46.72	-18	15	16.6	32.164035	0.2	14.1	67.3w	2	100.0	90.1	-44	57
2010	Mar	4	18	20	51.19	-18	15	11.2	32.148761	0.2	14.1	68.3w	2	100.0	90.0	-44	57
2010	Mar	5	18	20	55.54	-18	15	5.8	32.133379	0.2	14.1	69.3w	2	100.0	89.8	-44	57
2010	Mar	6	18	20	59.78	-18	15	0.4	32.117891	0.2	14.1	70.2w	2	100.0	89.7	-44	57
2010	Mar	7	18	21	3.88	-18	14	54.9	32.102303	0.2	14.1	71.2w	2	100.0	89.6	-44	57
2010	Mar	8	18	21	7.87	-18	14	49.5	32.086619	0.2	14.1	72.2w	2	100.0	89.5	-44	57
2010	Mar	9	18	21	11.73	-18	14	44.1	32.070844	0.2	14.1	73.2w	2	100.0	89.4	-44	57
2010	Mar	10	18	21	15.46	-18	14	38.7	32.054982	0.2	14.1	74.2w	2	100.0	89.3	-44	57
2010	Mar	11	18	21	19.07	-18	14	33.3	32.039039	0.2	14.1	75.1w	2	100.0	89.2	-44	57
2010	Mar	12	18	21	22.54	-18	14	27.9	32.023019	0.2	14.1	76.1w	2	100.0	89.1	-44	57
2010	Mar	13	18	21	25.89	-18	14	22.6	32.006927	0.2	14.1	77.1w	2	100.0	89.0	-44	57
2010	Mar	14	18	21	29.11	-18	14	17.2	31.990769	0.2	14.1	78.1w	2	100.0	88.9	-44	57
2010	Mar	15	18	21	32.20	-18	14	11.9	31.974549	0.2	14.1	79.1w	2	100.0	88.8	-44	57
2010	Mar	16	18	21	35.16	-18	14	6.6	31.958274	0.2	14.1	80.0w	2	100.0	88.7	-44	57
2010	Mar	17	18	21	37.99	-18	14	1.4	31.941947	0.2	14.1	81.0w	2	100.0	88.7	-44	57
2010	Mar	18	18	21	40.69	-18	13	56.2	31.925575	0.2	14.1	82.0w	2	100.0	88.6	-44	57
2010	Mar	19	18	21	43.25	-18	13	51.0	31.909162	0.2	14.1	83.0w	2	100.0	88.5	-44	57
2010	Mar	20	18	21	45.69	-18	13	45.9	31.892714	0.2	14.1	84.0w	2	100.0	88.4	-44	57
2010	Mar	21	18	21	47.99	-18	13	40.8	31.876237	0.2	14.1	84.9w	2	100.0	88.3	-44	57
2010	Mar	22	18	21	50.15	-18	13	35.8	31.859735	0.2	14.1	85.9w	2	100.0	88.2	-44	57
2010	Mar	23	18	21	52.19	-18	13	30.8	31.843214	0.2	14.1	86.9w	2	100.0	88.1	-44	57
2010	Mar	24	18	21	54.09	-18	13	25.9	31.826679	0.2	14.1	87.9w	2	100.0	88.0	-44	57
2010	Mar	25	18	21	55.85	-18	13	21.1	31.810134	0.2	14.1	88.9w	2	100.0	87.9	-44	57
2010	Mar	26	18	21	57.49	-18	13	16.3	31.793586	0.2	14.1	89.9w	2	100.0	87.8	-44	57

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Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Mar	27	18	21	58.99	-18	13	11.6	31.777039	0.2	14.1	90.8	w	2	100.0	87.7	-44	57
2010	Mar	28	18	22	0.35	-18	13	6.9	31.760497	0.2	14.1	91.8	w	2	100.0	87.6	-44	57
2010	Mar	29	18	22	1.59	-18	13	2.4	31.743966	0.2	14.1	92.8	w	2	100.0	87.6	-44	57
2010	Mar	30	18	22	2.69	-18	12	57.9	31.727449	0.2	14.1	93.8	w	2	100.0	87.5	-44	57
2010	Mar	31	18	22	3.65	-18	12	53.5	31.710952	0.2	14.1	94.8	w	2	100.0	87.4	-44	57
2010	Apr	1	18	22	4.49	-18	12	49.1	31.694478	0.2	14.1	95.7	w	2	100.0	87.3	-44	57
2010	Apr	2	18	22	5.19	-18	12	44.9	31.678033	0.2	14.1	96.7	w	2	100.0	87.2	-44	57
2010	Apr	3	18	22	5.76	-18	12	40.7	31.661622	0.2	14.1	97.7	w	2	100.0	87.1	-44	57
2010	Apr	4	18	22	6.19	-18	12	36.7	31.645248	0.2	14.1	98.7	w	2	100.0	87.0	-44	57
2010	Apr	5	18	22	6.49	-18	12	32.7	31.628917	0.2	14.1	99.7	w	2	100.0	86.9	-44	57
2010	Apr	6	18	22	6.66	-18	12	28.8	31.612634	0.2	14.1	100.6	w	2	100.0	86.8	-44	57
2010	Apr	7	18	22	6.70	-18	12	25.0	31.596403	0.2	14.1	101.6	w	2	100.0	86.7	-44	57
2010	Apr	8	18	22	6.60	-18	12	21.4	31.580231	0.2	14.1	102.6	w	2	100.0	86.6	-44	57
2010	Apr	9	18	22	6.37	-18	12	17.8	31.564121	0.2	14.1	103.6	w	2	100.0	86.6	-44	57
2010	Apr	10	18	22	6.01	-18	12	14.3	31.548079	0.2	14.1	104.5	w	2	100.0	86.5	-44	57
2010	Apr	11	18	22	5.52	-18	12	11.0	31.532110	0.2	14.1	105.5	w	2	100.0	86.4	-44	57
2010	Apr	12	18	22	4.90	-18	12	7.8	31.516219	0.2	14.1	106.5	w	2	100.0	86.3	-44	57
2010	Apr	13	18	22	4.14	-18	12	4.6	31.500411	0.2	14.1	107.5	w	2	100.0	86.2	-44	57
2010	Apr	14	18	22	3.26	-18	12	1.6	31.484691	0.2	14.1	108.5	w	2	100.0	86.1	-44	57
2010	Apr	15	18	22	2.24	-18	11	58.8	31.469065	0.2	14.1	109.4	w	2	100.0	86.0	-44	57
2010	Apr	16	18	22	1.10	-18	11	56.0	31.453537	0.2	14.1	110.4	w	2	100.0	85.9	-44	57
2010	Apr	17	18	21	59.83	-18	11	53.4	31.438113	0.2	14.1	111.4	w	2	100.0	85.8	-44	57
2010	Apr	18	18	21	58.43	-18	11	50.9	31.422797	0.2	14.1	112.4	w	2	100.0	85.7	-44	57
2010	Apr	19	18	21	56.91	-18	11	48.6	31.407594	0.2	14.1	113.4	w	2	100.0	85.6	-44	57
2010	Apr	20	18	21	55.25	-18	11	46.3	31.392510	0.2	14.1	114.3	w	2	100.0	85.5	-44	57
2010	Apr	21	18	21	53.48	-18	11	44.3	31.377548	0.2	14.1	115.3	w	2	100.0	85.4	-44	57
2010	Apr	22	18	21	51.58	-18	11	42.3	31.362714	0.2	14.1	116.3	w	2	100.0	85.3	-44	57
2010	Apr	23	18	21	49.56	-18	11	40.5	31.348011	0.2	14.1	117.3	w	2	100.0	85.2	-44	57
2010	Apr	24	18	21	47.42	-18	11	38.9	31.333444	0.2	14.0	118.3	w	2	100.0	85.1	-44	57

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Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Apr	25	18	21	45.16	-18	11	37.3	31.319017	0.2	14.0	119.2	w	2	100.0	84.9	-44	57
2010	Apr	26	18	21	42.78	-18	11	36.0	31.304733	0.2	14.0	120.2	w	2	100.0	84.8	-44	57
2010	Apr	27	18	21	40.28	-18	11	34.7	31.290598	0.2	14.0	121.2	w	2	100.0	84.7	-44	57
2010	Apr	28	18	21	37.66	-18	11	33.6	31.276614	0.2	14.0	122.2	w	2	100.0	84.6	-44	57
2010	Apr	29	18	21	34.93	-18	11	32.7	31.262786	0.2	14.0	123.1	w	2	100.0	84.5	-44	57
2010	Apr	30	18	21	32.09	-18	11	31.9	31.249117	0.2	14.0	124.1	w	2	100.0	84.4	-44	57
2010	May	1	18	21	29.13	-18	11	31.3	31.235611	0.2	14.0	125.1	w	1	100.0	84.2	-44	57
2010	May	2	18	21	26.06	-18	11	30.8	31.222273	0.2	14.0	126.1	w	1	100.0	84.1	-44	57
2010	May	3	18	21	22.88	-18	11	30.5	31.209106	0.2	14.0	127.0	w	1	100.0	84.0	-44	57
2010	May	4	18	21	19.59	-18	11	30.3	31.196113	0.2	14.0	128.0	w	1	100.0	83.8	-44	57
2010	May	5	18	21	16.19	-18	11	30.3	31.183301	0.2	14.0	129.0	w	1	100.0	83.7	-44	57
2010	May	6	18	21	12.68	-18	11	30.4	31.170671	0.2	14.0	130.0	w	1	100.0	83.5	-44	57
2010	May	7	18	21	9.07	-18	11	30.8	31.158229	0.2	14.0	131.0	w	1	100.0	83.4	-44	57
2010	May	8	18	21	5.35	-18	11	31.2	31.145978	0.2	14.0	131.9	w	1	100.0	83.3	-44	57
2010	May	9	18	21	1.53	-18	11	31.9	31.133922	0.2	14.0	132.9	w	1	100.0	83.1	-44	57
2010	May	10	18	20	57.60	-18	11	32.7	31.122065	0.2	14.0	133.9	w	1	100.0	82.9	-44	57
2010	May	11	18	20	53.58	-18	11	33.6	31.110412	0.2	14.0	134.9	w	1	100.0	82.8	-44	57
2010	May	12	18	20	49.45	-18	11	34.8	31.098966	0.2	14.0	135.8	w	1	100.0	82.6	-44	57
2010	May	13	18	20	45.24	-18	11	36.1	31.087730	0.2	14.0	136.8	w	1	100.0	82.4	-44	57
2010	May	14	18	20	40.92	-18	11	37.6	31.076709	0.2	14.0	137.8	w	1	100.0	82.2	-44	57
2010	May	15	18	20	36.51	-18	11	39.2	31.065906	0.2	14.0	138.8	w	1	100.0	82.0	-44	57
2010	May	16	18	20	32.01	-18	11	41.1	31.055326	0.2	14.0	139.7	w	1	100.0	81.8	-44	57
2010	May	17	18	20	27.42	-18	11	43.1	31.044970	0.2	14.0	140.7	w	1	100.0	81.6	-44	57
2010	May	18	18	20	22.74	-18	11	45.2	31.034843	0.2	14.0	141.7	w	1	100.0	81.4	-44	57
2010	May	19	18	20	17.98	-18	11	47.6	31.024948	0.2	14.0	142.6	w	1	100.0	81.2	-44	57
2010	May	20	18	20	13.14	-18	11	50.1	31.015287	0.2	14.0	143.6	w	1	100.0	81.0	-44	57
2010	May	21	18	20	8.21	-18	11	52.8	31.005864	0.2	14.0	144.6	w	1	100.0	80.7	-44	57
2010	May	22	18	20	3.20	-18	11	55.6	30.996680	0.2	14.0	145.6	w	1	100.0	80.4	-44	57

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Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	May	23	18	19	58.11	-18	11	58.7	30.987739	0.2	14.0	146.5	w	1	100.0	80.2	-44	57
2010	May	24	18	19	52.95	-18	12	1.9	30.979042	0.2	14.0	147.5	w	1	100.0	79.9	-44	57
2010	May	25	18	19	47.72	-18	12	5.3	30.970592	0.2	14.0	148.5	w	1	100.0	79.6	-44	57
2010	May	26	18	19	42.41	-18	12	8.8	30.962391	0.2	14.0	149.4	w	1	100.0	79.3	-44	57
2010	May	27	18	19	37.04	-18	12	12.6	30.954442	0.2	14.0	150.4	w	1	100.0	78.9	-44	57
2010	May	28	18	19	31.60	-18	12	16.5	30.946746	0.2	14.0	151.4	w	1	100.0	78.5	-44	57
2010	May	29	18	19	26.09	-18	12	20.5	30.939305	0.2	14.0	152.3	w	1	100.0	78.2	-43	57
2010	May	30	18	19	20.52	-18	12	24.8	30.932123	0.2	14.0	153.3	w	1	100.0	77.7	-43	57
2010	May	31	18	19	14.88	-18	12	29.2	30.925200	0.2	14.0	154.2	w	1	100.0	77.3	-43	57
2010	Jun	1	18	19	9.19	-18	12	33.8	30.918540	0.2	14.0	155.2	w	1	100.0	76.8	-43	57
2010	Jun	2	18	19	3.44	-18	12	38.6	30.912144	0.2	14.0	156.2	w	1	100.0	76.3	-43	57
2010	Jun	3	18	18	57.63	-18	12	43.5	30.906015	0.2	14.0	157.1	w	1	100.0	75.8	-43	57
2010	Jun	4	18	18	51.77	-18	12	48.6	30.900154	0.2	14.0	158.1	w	1	100.0	75.2	-43	57
2010	Jun	5	18	18	45.85	-18	12	53.9	30.894565	0.2	14.0	159.0	w	1	100.0	74.5	-43	57
2010	Jun	6	18	18	39.89	-18	12	59.4	30.889248	0.2	14.0	160.0	w	1	100.0	73.8	-43	57
2010	Jun	7	18	18	33.88	-18	13	5.0	30.884205	0.2	14.0	160.9	w	1	100.0	73.1	-43	57
2010	Jun	8	18	18	27.83	-18	13	10.9	30.879440	0.2	14.0	161.9	w	1	100.0	72.2	-43	57
2010	Jun	9	18	18	21.73	-18	13	16.9	30.874953	0.2	14.0	162.8	w	1	100.0	71.3	-43	57
2010	Jun	10	18	18	15.60	-18	13	23.0	30.870747	0.2	14.0	163.7	w	1	100.0	70.2	-43	57
2010	Jun	11	18	18	9.42	-18	13	29.4	30.866822	0.2	14.0	164.6	w	0	100.0	69.0	-43	57
2010	Jun	12	18	18	3.21	-18	13	35.9	30.863181	0.2	14.0	165.6	w	0	100.0	67.7	-43	57
2010	Jun	13	18	17	56.97	-18	13	42.5	30.859826	0.2	14.0	166.5	w	0	100.0	66.2	-43	58
2010	Jun	14	18	17	50.69	-18	13	49.4	30.856756	0.2	14.0	167.4	w	0	100.0	64.5	-43	58
2010	Jun	15	18	17	44.39	-18	13	56.4	30.853973	0.2	14.0	168.3	w	0	100.0	62.6	-43	58
2010	Jun	16	18	17	38.07	-18	14	3.6	30.851479	0.2	14.0	169.1	w	0	100.0	60.3	-43	58
2010	Jun	17	18	17	31.72	-18	14	11.0	30.849274	0.2	14.0	170.0	w	0	100.0	57.6	-43	58
2010	Jun	18	18	17	25.35	-18	14	18.5	30.847357	0.2	14.0	170.8	w	0	100.0	54.5	-43	58
2010	Jun	19	18	17	18.96	-18	14	26.2	30.845730	0.2	14.0	171.6	w	0	100.0	50.7	-43	58

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Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Jun	20	18	17	12.56	-18	14	34.0	30.844393	0.2	14.0	172.4	w	0	100.0	46.2	-43	58
2010	Jun	21	18	17	6.15	-18	14	42.1	30.843345	0.2	14.0	173.1	w	0	100.0	40.7	-43	58
2010	Jun	22	18	16	59.72	-18	14	50.2	30.842587	0.2	14.0	173.7	w	0	100.0	34.2	-43	58
2010	Jun	23	18	16	53.29	-18	14	58.6	30.842119	0.2	14.0	174.2	w	0	100.0	26.3	-43	58
2010	Jun	24	18	16	46.85	-18	15	7.1	30.841940	0.2	14.0	174.6	w	0	100.0	17.1	-43	58
2010	Jun	25	18	16	40.41	-18	15	15.7	30.842052	0.2	14.0	174.8	w	0	100.0	6.8	-43	58
2010	Jun	26	18	16	33.96	-18	15	24.5	30.842452	0.2	14.0	174.9	e	0	100.0	355.9	-43	58
2010	Jun	27	18	16	27.52	-18	15	33.5	30.843143	0.2	14.0	174.7	e	0	100.0	345.2	-43	58
2010	Jun	28	18	16	21.08	-18	15	42.6	30.844122	0.2	14.0	174.4	e	0	100.0	335.3	-43	58
2010	Jun	29	18	16	14.65	-18	15	51.9	30.845392	0.2	14.0	174.0	e	0	100.0	326.7	-43	58
2010	Jun	30	18	16	8.22	-18	16	1.3	30.846950	0.2	14.0	173.4	e	0	100.0	319.4	-43	58
2010	Jul	1	18	16	1.81	-18	16	10.9	30.848798	0.2	14.0	172.8	e	0	100.0	313.3	-43	58
2010	Jul	2	18	15	55.40	-18	16	20.6	30.850935	0.2	14.0	172.1	e	0	100.0	308.3	-43	58
2010	Jul	3	18	15	49.01	-18	16	30.5	30.853360	0.2	14.0	171.3	e	0	100.0	304.1	-43	58
2010	Jul	4	18	15	42.64	-18	16	40.5	30.856074	0.2	14.0	170.5	e	0	100.0	300.6	-43	58
2010	Jul	5	18	15	36.29	-18	16	50.7	30.859076	0.2	14.0	169.6	e	0	100.0	297.7	-43	58
2010	Jul	6	18	15	29.96	-18	17	1.0	30.862366	0.2	14.0	168.8	e	0	100.0	295.2	-43	58
2010	Jul	7	18	15	23.65	-18	17	11.5	30.865943	0.2	14.0	167.9	e	0	100.0	293.1	-43	58
2010	Jul	8	18	15	17.37	-18	17	22.1	30.869806	0.2	14.0	167.0	e	0	100.0	291.2	-43	58
2010	Jul	9	18	15	11.12	-18	17	32.8	30.873956	0.2	14.0	166.1	e	0	100.0	289.6	-43	58
2010	Jul	10	18	15	4.90	-18	17	43.7	30.878390	0.2	14.0	165.2	e	0	100.0	288.2	-43	58
2010	Jul	11	18	14	58.72	-18	17	54.8	30.883108	0.2	14.0	164.3	e	0	100.0	287.0	-43	58
2010	Jul	12	18	14	52.57	-18	18	5.9	30.888109	0.2	14.0	163.3	e	1	100.0	285.8	-43	58
2010	Jul	13	18	14	46.46	-18	18	17.2	30.893391	0.2	14.0	162.4	e	1	100.0	284.8	-42	58
2010	Jul	14	18	14	40.39	-18	18	28.7	30.898953	0.2	14.0	161.5	e	1	100.0	283.9	-42	58
2010	Jul	15	18	14	34.36	-18	18	40.2	30.904793	0.2	14.0	160.5	e	1	100.0	283.1	-42	58
2010	Jul	16	18	14	28.39	-18	18	51.9	30.910909	0.2	14.0	159.6	e	1	100.0	282.4	-42	58
2010	Jul	17	18	14	22.46	-18	19	3.7	30.917299	0.2	14.0	158.6	e	1	100.0	281.7	-42	58
2010	Jul	18	18	14	16.58	-18	19	15.7	30.923960	0.2	14.0	157.7	e	1	100.0	281.1	-42	58

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Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Jul	19	18	14	10.76	-18	19	27.7	30.930891	0.2	14.0	156.7	e	1	100.0	280.5	-42	58
2010	Jul	20	18	14	4.99	-18	19	39.9	30.938089	0.2	14.0	155.8	e	1	100.0	280.0	-42	58
2010	Jul	21	18	13	59.27	-18	19	52.2	30.945553	0.2	14.0	154.8	e	1	100.0	279.5	-42	58
2010	Jul	22	18	13	53.62	-18	20	4.6	30.953278	0.2	14.0	153.9	e	1	100.0	279.0	-42	58
2010	Jul	23	18	13	48.03	-18	20	17.1	30.961264	0.2	14.0	152.9	e	1	100.0	278.6	-42	58
2010	Jul	24	18	13	42.50	-18	20	29.8	30.969509	0.2	14.0	152.0	e	1	100.0	278.2	-42	58
2010	Jul	25	18	13	37.03	-18	20	42.5	30.978009	0.2	14.0	151.0	e	1	100.0	277.8	-42	58
2010	Jul	26	18	13	31.64	-18	20	55.4	30.986762	0.2	14.0	150.0	e	1	100.0	277.5	-42	58
2010	Jul	27	18	13	26.31	-18	21	8.4	30.995767	0.2	14.0	149.1	e	1	100.0	277.1	-42	58
2010	Jul	28	18	13	21.05	-18	21	21.4	31.005022	0.2	14.0	148.1	e	1	100.0	276.8	-42	58
2010	Jul	29	18	13	15.87	-18	21	34.6	31.014522	0.2	14.0	147.2	e	1	100.0	276.5	-42	58
2010	Jul	30	18	13	10.76	-18	21	47.9	31.024267	0.2	14.0	146.2	e	1	100.0	276.3	-42	58
2010	Jul	31	18	13	5.72	-18	22	1.2	31.034254	0.2	14.0	145.2	e	1	100.0	276.0	-42	58
2010	Aug	1	18	13	0.77	-18	22	14.7	31.044480	0.2	14.0	144.3	e	1	100.0	275.7	-42	58
2010	Aug	2	18	12	55.89	-18	22	28.3	31.054943	0.2	14.0	143.3	e	1	100.0	275.5	-42	58
2010	Aug	3	18	12	51.10	-18	22	41.9	31.065641	0.2	14.0	142.3	e	1	100.0	275.3	-42	58
2010	Aug	4	18	12	46.39	-18	22	55.7	31.076570	0.2	14.0	141.4	e	1	100.0	275.0	-42	58
2010	Aug	5	18	12	41.77	-18	23	9.5	31.087727	0.2	14.0	140.4	e	1	100.0	274.8	-42	58
2010	Aug	6	18	12	37.24	-18	23	23.5	31.099111	0.2	14.0	139.4	e	1	100.0	274.6	-42	58
2010	Aug	7	18	12	32.79	-18	23	37.5	31.110718	0.2	14.0	138.5	e	1	100.0	274.4	-42	58
2010	Aug	8	18	12	28.44	-18	23	51.6	31.122544	0.2	14.0	137.5	e	1	100.0	274.2	-42	58
2010	Aug	9	18	12	24.18	-18	24	5.8	31.134587	0.2	14.0	136.5	e	1	100.0	274.1	-42	58
2010	Aug	10	18	12	20.01	-18	24	20.0	31.146843	0.2	14.0	135.6	e	1	100.0	273.9	-42	58
2010	Aug	11	18	12	15.94	-18	24	34.3	31.159309	0.2	14.0	134.6	e	1	100.0	273.7	-42	58
2010	Aug	12	18	12	11.98	-18	24	48.7	31.171980	0.2	14.0	133.6	e	1	100.0	273.6	-42	58
2010	Aug	13	18	12	8.11	-18	25	3.2	31.184853	0.2	14.0	132.7	e	1	100.0	273.4	-42	58
2010	Aug	14	18	12	4.34	-18	25	17.7	31.197923	0.2	14.0	131.7	e	1	100.0	273.3	-42	59
2010	Aug	15	18	12	0.68	-18	25	32.3	31.211186	0.2	14.0	130.7	e	1	100.0	273.1	-42	59

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Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Aug	16	18	11	57.12	-18	25	47.0	31.224639	0.2	14.0	129.8	e	1	100.0	273.0	-42	59
2010	Aug	17	18	11	53.67	-18	26	1.7	31.238277	0.2	14.0	128.8	e	1	100.0	272.8	-42	59
2010	Aug	18	18	11	50.33	-18	26	16.4	31.252096	0.2	14.0	127.8	e	1	100.0	272.7	-42	59
2010	Aug	19	18	11	47.09	-18	26	31.3	31.266092	0.2	14.0	126.9	e	1	100.0	272.6	-42	59
2010	Aug	20	18	11	43.97	-18	26	46.1	31.280261	0.2	14.0	125.9	e	1	100.0	272.4	-42	59
2010	Aug	21	18	11	40.96	-18	27	1.0	31.294600	0.2	14.0	124.9	e	1	100.0	272.3	-42	59
2010	Aug	22	18	11	38.05	-18	27	16.0	31.309103	0.2	14.0	124.0	e	2	100.0	272.2	-42	59
2010	Aug	23	18	11	35.27	-18	27	31.0	31.323768	0.2	14.0	123.0	e	2	100.0	272.1	-42	59
2010	Aug	24	18	11	32.59	-18	27	46.1	31.338591	0.2	14.1	122.0	e	2	100.0	272.0	-42	59
2010	Aug	25	18	11	30.03	-18	28	1.1	31.353566	0.2	14.1	121.0	e	2	100.0	271.8	-42	59
2010	Aug	26	18	11	27.59	-18	28	16.3	31.368691	0.2	14.1	120.1	e	2	100.0	271.7	-42	59
2010	Aug	27	18	11	25.27	-18	28	31.4	31.383962	0.2	14.1	119.1	e	2	100.0	271.6	-42	59
2010	Aug	28	18	11	23.06	-18	28	46.6	31.399374	0.2	14.1	118.1	e	2	100.0	271.5	-42	59
2010	Aug	29	18	11	20.97	-18	29	1.8	31.414924	0.2	14.1	117.2	e	2	100.0	271.4	-42	59
2010	Aug	30	18	11	19.00	-18	29	17.0	31.430607	0.2	14.1	116.2	e	2	100.0	271.3	-42	59
2010	Aug	31	18	11	17.16	-18	29	32.3	31.446419	0.2	14.1	115.2	e	2	100.0	271.2	-42	59
2010	Sep	1	18	11	15.43	-18	29	47.6	31.462357	0.2	14.1	114.3	e	2	100.0	271.1	-42	59
2010	Sep	2	18	11	13.83	-18	30	2.9	31.478415	0.2	14.1	113.3	e	2	100.0	271.0	-42	59
2010	Sep	3	18	11	12.36	-18	30	18.2	31.494591	0.2	14.1	112.3	e	2	100.0	270.9	-42	59
2010	Sep	4	18	11	11.01	-18	30	33.5	31.510878	0.2	14.1	111.4	e	2	100.0	270.8	-42	59
2010	Sep	5	18	11	9.78	-18	30	48.9	31.527274	0.2	14.1	110.4	e	2	100.0	270.7	-42	59
2010	Sep	6	18	11	8.68	-18	31	4.2	31.543773	0.2	14.1	109.4	e	2	100.0	270.6	-42	59
2010	Sep	7	18	11	7.71	-18	31	19.6	31.560369	0.2	14.1	108.4	e	2	100.0	270.5	-42	59
2010	Sep	8	18	11	6.87	-18	31	34.9	31.577060	0.2	14.1	107.5	e	2	100.0	270.4	-42	59
2010	Sep	9	18	11	6.16	-18	31	50.3	31.593838	0.2	14.1	106.5	e	2	100.0	270.3	-42	59
2010	Sep	10	18	11	5.58	-18	32	5.6	31.610700	0.2	14.1	105.5	e	2	100.0	270.3	-42	59
2010	Sep	11	18	11	5.12	-18	32	20.9	31.627639	0.2	14.1	104.6	e	2	100.0	270.2	-42	59
2010	Sep	12	18	11	4.80	-18	32	36.3	31.644652	0.2	14.1	103.6	e	2	100.0	270.1	-42	59

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Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Sep	13	18	11	4.61	-18	32	51.6	31.661731	0.2	14.1	102.6e	2	100.0	270.0	-42	59
2010	Sep	14	18	11	4.55	-18	33	6.8	31.678873	0.2	14.1	101.7e	2	100.0	269.9	-42	59
2010	Sep	15	18	11	4.62	-18	33	22.1	31.696073	0.2	14.1	100.7e	2	100.0	269.8	-42	59
2010	Sep	16	18	11	4.83	-18	33	37.3	31.713325	0.2	14.1	99.7e	2	100.0	269.7	-42	59
2010	Sep	17	18	11	5.16	-18	33	52.6	31.730625	0.2	14.1	98.7e	2	100.0	269.6	-42	59
2010	Sep	18	18	11	5.63	-18	34	7.7	31.747967	0.2	14.1	97.8e	2	100.0	269.6	-42	59
2010	Sep	19	18	11	6.23	-18	34	22.9	31.765348	0.2	14.1	96.8e	2	100.0	269.5	-42	59
2010	Sep	20	18	11	6.96	-18	34	38.0	31.782762	0.2	14.1	95.8e	2	100.0	269.4	-42	59
2010	Sep	21	18	11	7.82	-18	34	53.1	31.800205	0.2	14.1	94.9e	2	100.0	269.3	-42	59
2010	Sep	22	18	11	8.82	-18	35	8.1	31.817672	0.2	14.1	93.9e	2	100.0	269.2	-42	59
2010	Sep	23	18	11	9.94	-18	35	23.1	31.835159	0.2	14.1	92.9e	2	100.0	269.1	-42	59
2010	Sep	24	18	11	11.20	-18	35	38.1	31.852661	0.2	14.1	92.0e	2	100.0	269.0	-42	59
2010	Sep	25	18	11	12.59	-18	35	53.0	31.870172	0.2	14.1	91.0e	2	100.0	269.0	-42	59
2010	Sep	26	18	11	14.11	-18	36	7.8	31.887690	0.2	14.1	90.0e	2	100.0	268.9	-42	59
2010	Sep	27	18	11	15.76	-18	36	22.6	31.905208	0.2	14.1	89.0e	2	100.0	268.8	-42	59
2010	Sep	28	18	11	17.55	-18	36	37.4	31.922723	0.2	14.1	88.1e	2	100.0	268.7	-42	59
2010	Sep	29	18	11	19.46	-18	36	52.1	31.940230	0.2	14.1	87.1e	2	100.0	268.6	-42	58
2010	Sep	30	18	11	21.51	-18	37	6.7	31.957723	0.2	14.1	86.1e	2	100.0	268.5	-42	58
2010	Oct	1	18	11	23.69	-18	37	21.3	31.975199	0.2	14.1	85.2e	2	100.0	268.5	-42	58
2010	Oct	2	18	11	26.00	-18	37	35.7	31.992653	0.2	14.1	84.2e	2	100.0	268.4	-42	58
2010	Oct	3	18	11	28.44	-18	37	50.2	32.010078	0.2	14.1	83.2e	2	100.0	268.3	-42	58
2010	Oct	4	18	11	31.01	-18	38	4.5	32.027472	0.2	14.1	82.2e	2	100.0	268.2	-42	58
2010	Oct	5	18	11	33.71	-18	38	18.8	32.044827	0.2	14.1	81.3e	2	100.0	268.1	-42	58
2010	Oct	6	18	11	36.54	-18	38	33.0	32.062140	0.2	14.1	80.3e	2	100.0	268.0	-42	58
2010	Oct	7	18	11	39.51	-18	38	47.1	32.079404	0.2	14.1	79.3e	2	100.0	267.9	-42	58
2010	Oct	8	18	11	42.60	-18	39	1.1	32.096615	0.2	14.1	78.4e	2	100.0	267.8	-42	58
2010	Oct	9	18	11	45.82	-18	39	15.0	32.113767	0.2	14.1	77.4e	2	100.0	267.8	-42	58
2010	Oct	10	18	11	49.16	-18	39	28.9	32.130855	0.2	14.1	76.4e	2	100.0	267.7	-42	58
2010	Oct	11	18	11	52.64	-18	39	42.6	32.147874	0.2	14.1	75.4e	2	100.0	267.6	-42	58

Pluto
Equinox of J2000

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Oct	12	18	11	56.24	-18	39	56.3	32.164818	0.2	14.1	74.5e	2	100.0	267.5	-42	58
2010	Oct	13	18	11	59.97	-18	40	9.8	32.181683	0.2	14.1	73.5e	2	100.0	267.4	-42	58
2010	Oct	14	18	12	3.82	-18	40	23.2	32.198465	0.2	14.1	72.5e	2	100.0	267.3	-42	58
2010	Oct	15	18	12	7.79	-18	40	36.6	32.215157	0.2	14.1	71.6e	2	100.0	267.2	-42	58
2010	Oct	16	18	12	11.89	-18	40	49.8	32.231757	0.2	14.1	70.6e	2	100.0	267.1	-42	58
2010	Oct	17	18	12	16.11	-18	41	2.9	32.248258	0.2	14.1	69.6e	2	100.0	267.0	-42	58
2010	Oct	18	18	12	20.45	-18	41	15.9	32.264658	0.2	14.1	68.6e	2	100.0	266.9	-42	58
2010	Oct	19	18	12	24.91	-18	41	28.8	32.280951	0.2	14.1	67.7e	2	100.0	266.8	-42	58
2010	Oct	20	18	12	29.49	-18	41	41.6	32.297133	0.2	14.1	66.7e	2	100.0	266.7	-42	58
2010	Oct	21	18	12	34.19	-18	41	54.3	32.313200	0.2	14.1	65.7e	2	100.0	266.6	-42	58
2010	Oct	22	18	12	39.00	-18	42	6.8	32.329147	0.2	14.1	64.8e	2	100.0	266.5	-42	58
2010	Oct	23	18	12	43.93	-18	42	19.2	32.344971	0.2	14.1	63.8e	2	100.0	266.4	-42	58
2010	Oct	24	18	12	48.98	-18	42	31.5	32.360668	0.2	14.1	62.8e	2	100.0	266.3	-42	58
2010	Oct	25	18	12	54.14	-18	42	43.6	32.376232	0.2	14.1	61.8e	2	100.0	266.2	-42	58
2010	Oct	26	18	12	59.41	-18	42	55.7	32.391660	0.2	14.1	60.9e	2	100.0	266.1	-42	58
2010	Oct	27	18	13	4.79	-18	43	7.6	32.406949	0.2	14.1	59.9e	2	100.0	266.0	-42	58
2010	Oct	28	18	13	10.29	-18	43	19.3	32.422093	0.2	14.1	58.9e	2	100.0	265.9	-42	58
2010	Oct	29	18	13	15.89	-18	43	30.9	32.437089	0.2	14.1	58.0e	2	100.0	265.7	-42	58
2010	Oct	30	18	13	21.60	-18	43	42.4	32.451932	0.2	14.1	57.0e	1	100.0	265.6	-42	58
2010	Oct	31	18	13	27.42	-18	43	53.8	32.466618	0.2	14.1	56.0e	1	100.0	265.5	-42	58
2010	Nov	1	18	13	33.35	-18	44	4.9	32.481142	0.2	14.1	55.0e	1	100.0	265.4	-42	58
2010	Nov	2	18	13	39.38	-18	44	16.0	32.495502	0.2	14.1	54.1e	1	100.0	265.3	-42	58
2010	Nov	3	18	13	45.51	-18	44	26.9	32.509690	0.2	14.1	53.1e	1	100.0	265.1	-42	58
2010	Nov	4	18	13	51.75	-18	44	37.6	32.523705	0.2	14.1	52.1e	1	100.0	265.0	-42	58
2010	Nov	5	18	13	58.09	-18	44	48.2	32.537540	0.2	14.1	51.2e	1	100.0	264.9	-42	58
2010	Nov	6	18	14	4.53	-18	44	58.6	32.551192	0.2	14.1	50.2e	1	100.0	264.7	-42	58
2010	Nov	7	18	14	11.07	-18	45	8.9	32.564657	0.2	14.1	49.2e	1	100.0	264.6	-42	58
2010	Nov	8	18	14	17.70	-18	45	19.0	32.577930	0.2	14.1	48.2e	1	100.0	264.4	-42	58

Pluto
Equinox of J2000

Date			Right Asc.			Declination			Distance	dia	mag	Elong	I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o	o		o	o	o
2010	Nov	9	18	14	24.43	-18	45	28.9	32.591007	0.2	14.1	47.3e	1	100.0	264.3	-42	58
2010	Nov	10	18	14	31.25	-18	45	38.7	32.603885	0.2	14.1	46.3e	1	100.0	264.1	-42	58
2010	Nov	11	18	14	38.17	-18	45	48.3	32.616560	0.2	14.1	45.3e	1	100.0	263.9	-42	58
2010	Nov	12	18	14	45.17	-18	45	57.8	32.629029	0.2	14.1	44.4e	1	100.0	263.8	-42	58
2010	Nov	13	18	14	52.26	-18	46	7.1	32.641287	0.2	14.1	43.4e	1	100.0	263.6	-42	58
2010	Nov	14	18	14	59.44	-18	46	16.2	32.653333	0.2	14.1	42.4e	1	100.0	263.4	-42	58
2010	Nov	15	18	15	6.70	-18	46	25.1	32.665162	0.2	14.1	41.4e	1	100.0	263.2	-42	58
2010	Nov	16	18	15	14.04	-18	46	33.9	32.676772	0.2	14.1	40.5e	1	100.0	263.1	-42	58
2010	Nov	17	18	15	21.47	-18	46	42.5	32.688160	0.2	14.1	39.5e	1	100.0	262.9	-42	58
2010	Nov	18	18	15	28.97	-18	46	50.9	32.699323	0.2	14.1	38.5e	1	100.0	262.6	-42	58
2010	Nov	19	18	15	36.55	-18	46	59.1	32.710257	0.2	14.1	37.6e	1	100.0	262.4	-42	58
2010	Nov	20	18	15	44.21	-18	47	7.2	32.720961	0.2	14.1	36.6e	1	100.0	262.2	-42	58
2010	Nov	21	18	15	51.94	-18	47	15.1	32.731431	0.2	14.1	35.6e	1	100.0	262.0	-42	57
2010	Nov	22	18	15	59.75	-18	47	22.8	32.741665	0.2	14.1	34.6e	1	100.0	261.7	-42	57
2010	Nov	23	18	16	7.62	-18	47	30.3	32.751660	0.2	14.1	33.7e	1	100.0	261.5	-43	57
2010	Nov	24	18	16	15.57	-18	47	37.7	32.761413	0.2	14.1	32.7e	1	100.0	261.2	-43	57
2010	Nov	25	18	16	23.58	-18	47	44.8	32.770923	0.2	14.1	31.7e	1	100.0	260.9	-43	57
2010	Nov	26	18	16	31.66	-18	47	51.8	32.780185	0.2	14.1	30.8e	1	100.0	260.6	-43	57
2010	Nov	27	18	16	39.80	-18	47	58.6	32.789199	0.2	14.1	29.8e	1	100.0	260.3	-43	57
2010	Nov	28	18	16	48.00	-18	48	5.2	32.797960	0.2	14.1	28.8e	1	100.0	260.0	-43	57
2010	Nov	29	18	16	56.26	-18	48	11.6	32.806466	0.2	14.1	27.9e	1	100.0	259.6	-43	57
2010	Nov	30	18	17	4.59	-18	48	17.9	32.814715	0.2	14.1	26.9e	1	100.0	259.2	-43	57
2010	Dec	1	18	17	12.96	-18	48	23.9	32.822704	0.2	14.1	25.9e	1	100.0	258.8	-43	57
2010	Dec	2	18	17	21.40	-18	48	29.8	32.830429	0.2	14.1	25.0e	1	100.0	258.4	-43	57
2010	Dec	3	18	17	29.88	-18	48	35.4	32.837889	0.2	14.1	24.0e	1	100.0	257.9	-43	57
2010	Dec	4	18	17	38.42	-18	48	40.9	32.845081	0.2	14.1	23.1e	1	100.0	257.4	-43	57
2010	Dec	5	18	17	47.00	-18	48	46.2	32.852003	0.2	14.1	22.1e	1	100.0	256.9	-43	57
2010	Dec	6	18	17	55.64	-18	48	51.3	32.858652	0.2	14.1	21.1e	1	100.0	256.3	-43	57

Pluto
Equinox of J2000

Date			Right Asc.			Declination			Distance	dia	mag	Elong		I	%Ill	Limb	De	Pp
year	mth	d	h	m	s	o	'	"	AU	"		o		o		o	o	o
2010	Dec	7	18	18	4.31	-18	48	56.2	32.865027	0.2	14.1	20.2e		1	100.0	255.7	-43	57
2010	Dec	8	18	18	13.03	-18	49	0.9	32.871126	0.2	14.1	19.2e		1	100.0	255.0	-43	57
2010	Dec	9	18	18	21.79	-18	49	5.4	32.876946	0.2	14.1	18.3e		1	100.0	254.2	-43	57
2010	Dec	10	18	18	30.58	-18	49	9.7	32.882488	0.2	14.1	17.3e		1	100.0	253.4	-43	57
2010	Dec	11	18	18	39.41	-18	49	13.9	32.887749	0.2	14.1	16.4e		0	100.0	252.4	-43	57
2010	Dec	12	18	18	48.27	-18	49	17.8	32.892727	0.2	14.1	15.4e		0	100.0	251.4	-43	57
2010	Dec	13	18	18	57.17	-18	49	21.6	32.897423	0.2	14.1	14.5e		0	100.0	250.2	-43	57
2010	Dec	14	18	19	6.09	-18	49	25.1	32.901835	0.2	14.1	13.6e		0	100.0	248.9	-43	57
2010	Dec	15	18	19	15.04	-18	49	28.5	32.905962	0.2	14.1	12.7e		0	100.0	247.4	-43	57
2010	Dec	16	18	19	24.01	-18	49	31.7	32.909804	0.2	14.1	11.7e		0	100.0	245.6	-43	57
2010	Dec	17	18	19	33.01	-18	49	34.7	32.913359	0.2	14.1	10.8e		0	100.0	243.6	-43	57
2010	Dec	18	18	19	42.03	-18	49	37.5	32.916627	0.2	14.1	10.0e		0	100.0	241.2	-43	57
2010	Dec	19	18	19	51.06	-18	49	40.2	32.919607	0.2	14.1	9.1e		0	100.0	238.4	-43	57
2010	Dec	20	18	20	0.11	-18	49	42.6	32.922299	0.2	14.1	8.3e		0	100.0	235.0	-43	57
2010	Dec	21	18	20	9.18	-18	49	44.9	32.924703	0.2	14.1	7.5e		0	100.0	230.8	-43	57
2010	Dec	22	18	20	18.26	-18	49	47.0	32.926818	0.2	14.1	6.7e		0	100.0	225.7	-43	57
2010	Dec	23	18	20	27.35	-18	49	48.9	32.928644	0.2	14.1	6.0e		0	100.0	219.3	-43	57
2010	Dec	24	18	20	36.44	-18	49	50.6	32.930179	0.2	14.1	5.4e		0	100.0	211.5	-43	57
2010	Dec	25	18	20	45.55	-18	49	52.1	32.931425	0.2	14.1	4.9e		0	100.0	201.9	-43	56
2010	Dec	26	18	20	54.65	-18	49	53.5	32.932379	0.2	14.1	4.6e		0	100.0	190.7	-43	56
2010	Dec	27	18	21	3.76	-18	49	54.7	32.933042	0.2	14.1	4.5w		0	100.0	178.5	-43	56
2010	Dec	28	18	21	12.87	-18	49	55.6	32.933414	0.2	14.1	4.6w		0	100.0	166.1	-43	56
2010	Dec	29	18	21	21.98	-18	49	56.5	32.933493	0.2	14.1	4.9w		0	100.0	154.8	-44	56
2010	Dec	30	18	21	31.08	-18	49	57.1	32.933279	0.2	14.1	5.4w		0	100.0	145.0	-44	56
2010	Dec	31	18	21	40.18	-18	49	57.6	32.932773	0.2	14.1	6.0w		0	100.0	137.0	-44	56

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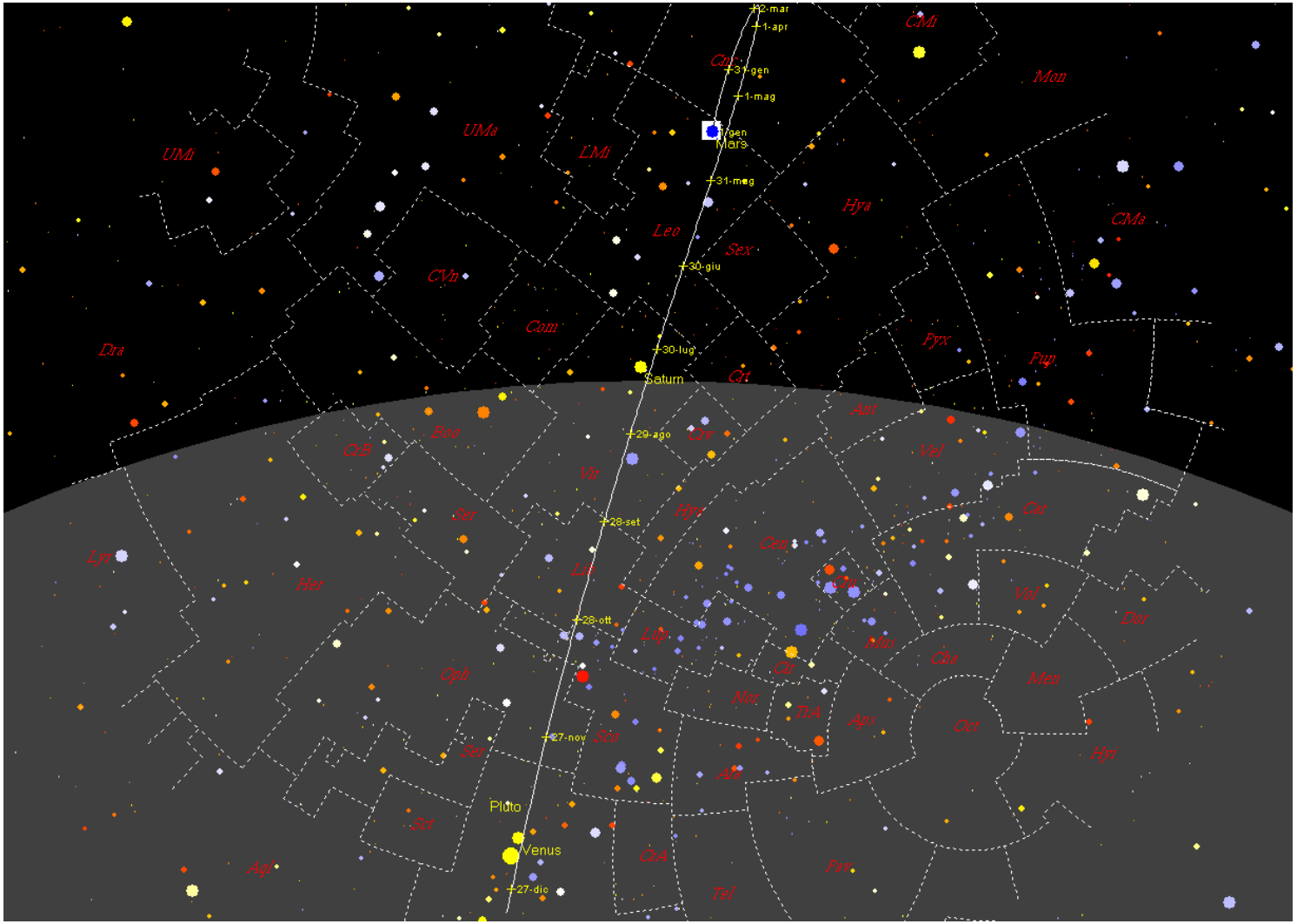
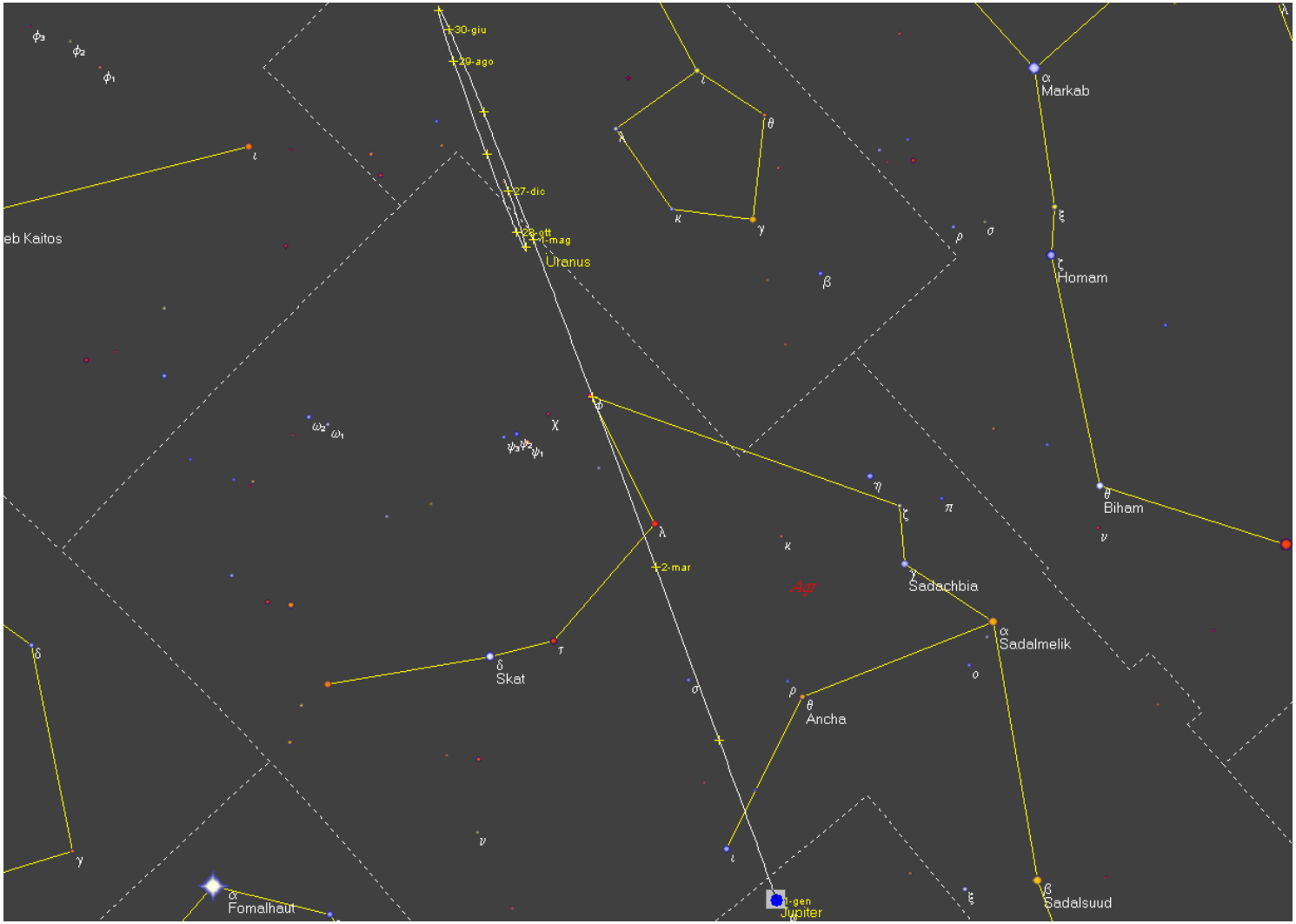


Traiettoria di Marte



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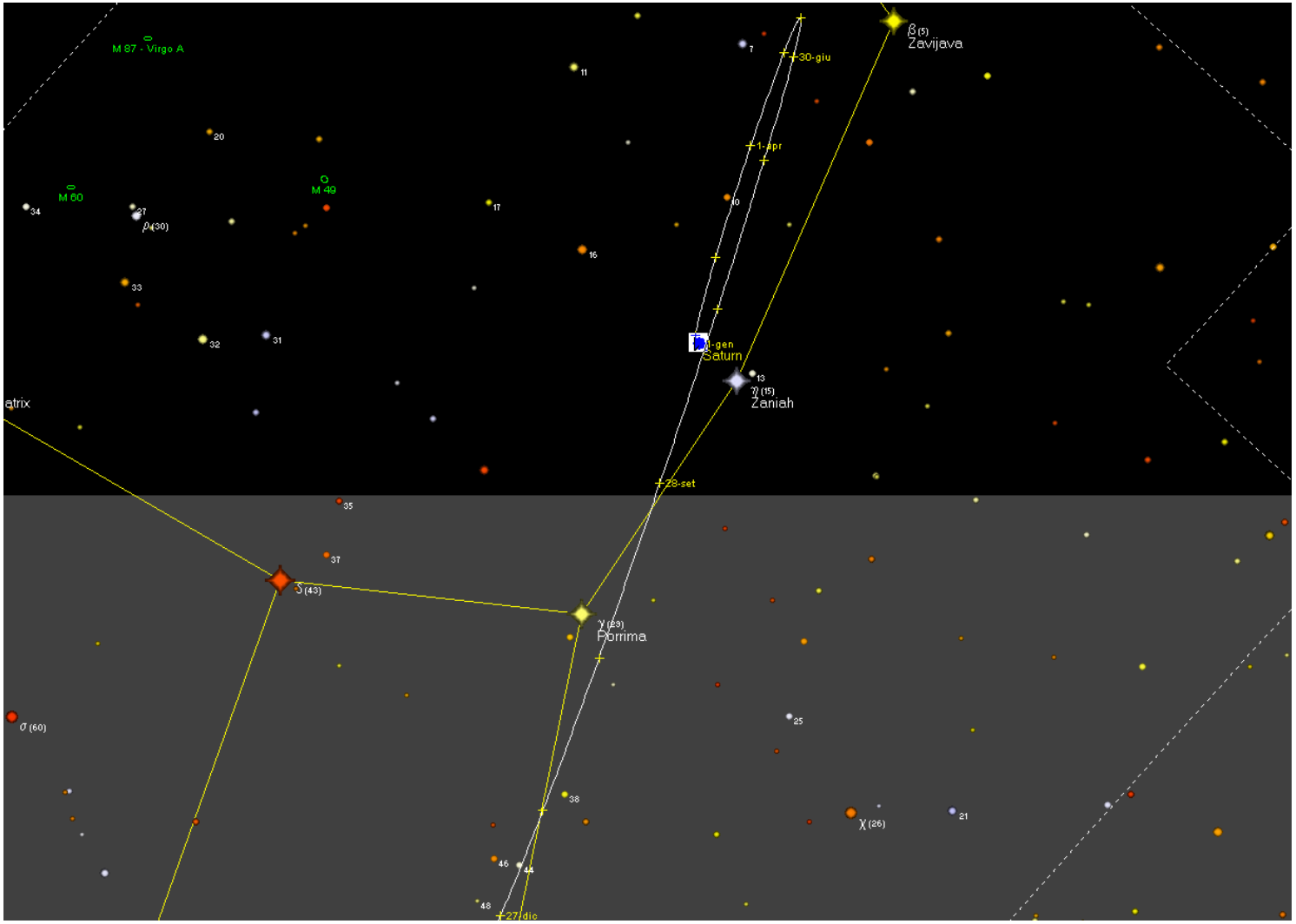

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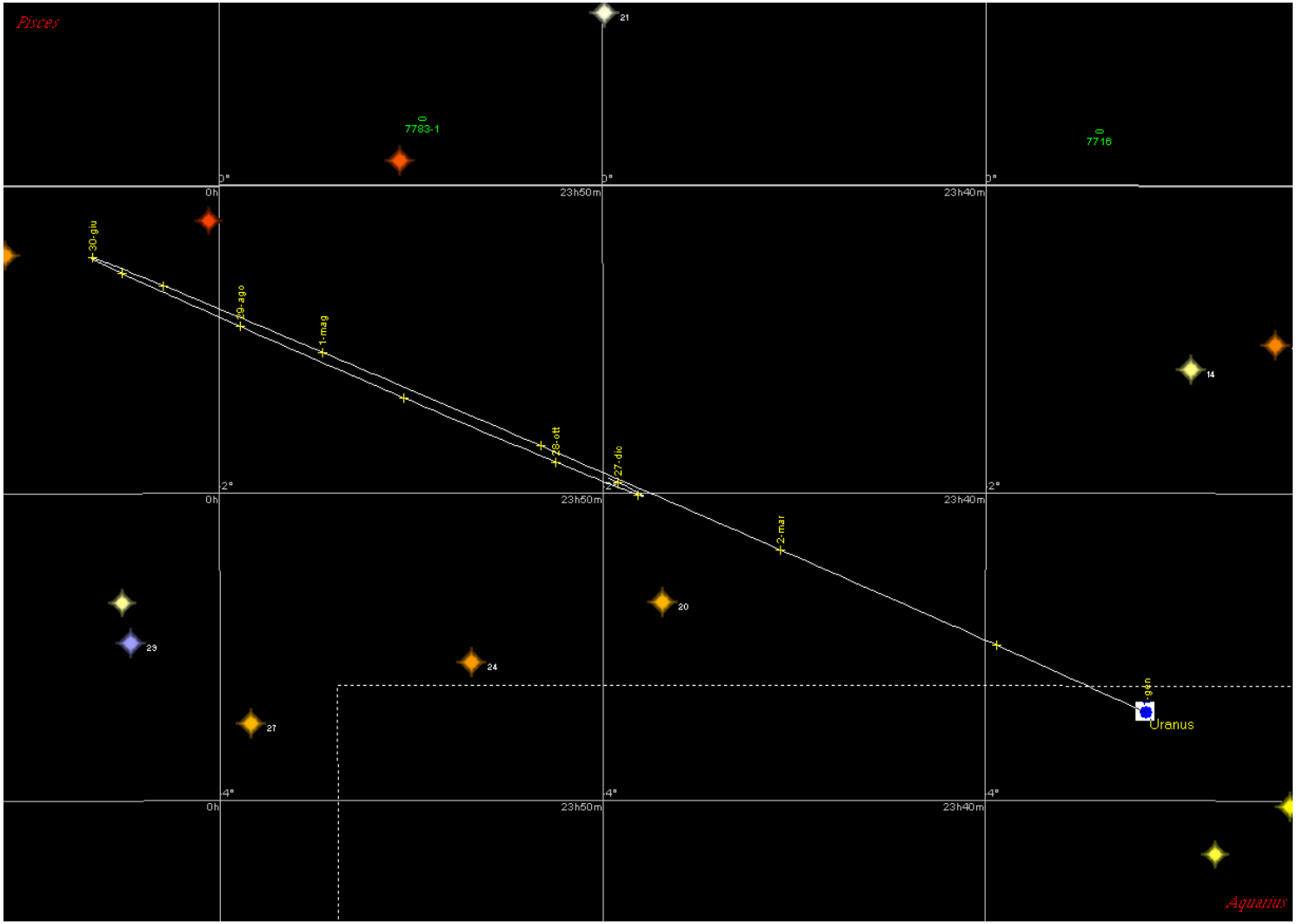

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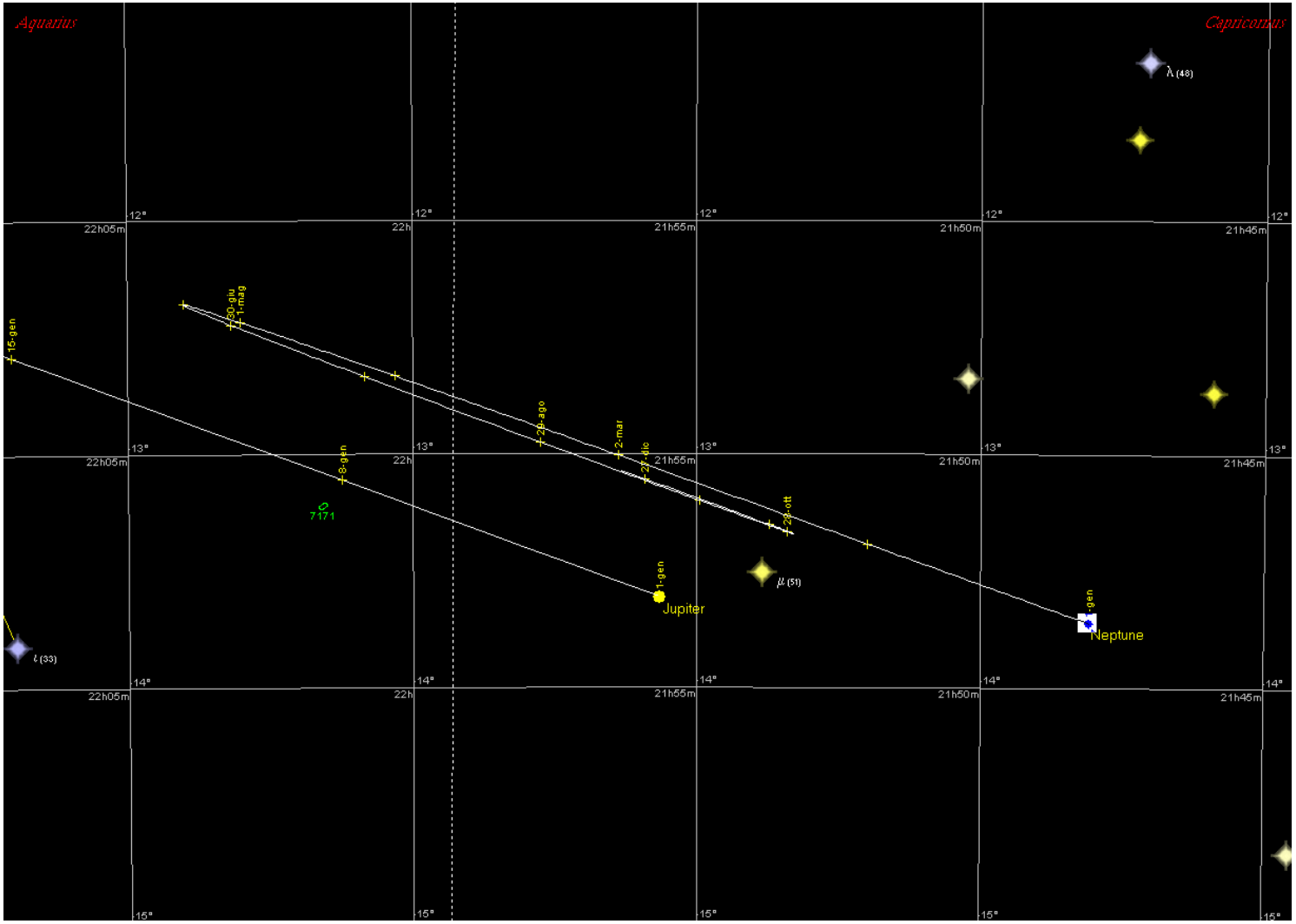

Traiettoria di Nettuno

Mutual conjunctions of the Planets
[Date and times are for minimum separation]

Yr	Mth	Dy	Hr	Sep	Elon	Planets	
2010	Feb	8	5.6	60.1	7e	Venus	Neptune
2010	Feb	17	2.2	32.1	9e	Venus	Jupiter
2010	Mar	4	4.3	36.7	12e	Venus	Uranus
2010	Mar	8	2.2	64.4	6w	Mercury	Jupiter
2010	Mar	15	22.2	39.6	2e	Mercury	Uranus
2010	Jun	8	8.3	26.2	77w	Jupiter	Uranus
2010	Sep	18	23.3	48.5	177w	Jupiter	Uranus
2010	Oct	8	11.3	31.8	7w	Mercury	Saturn
2010	Dec	14	0.3	61.1	13e	Mercury	Mars

(Max separation ≤ 90’)

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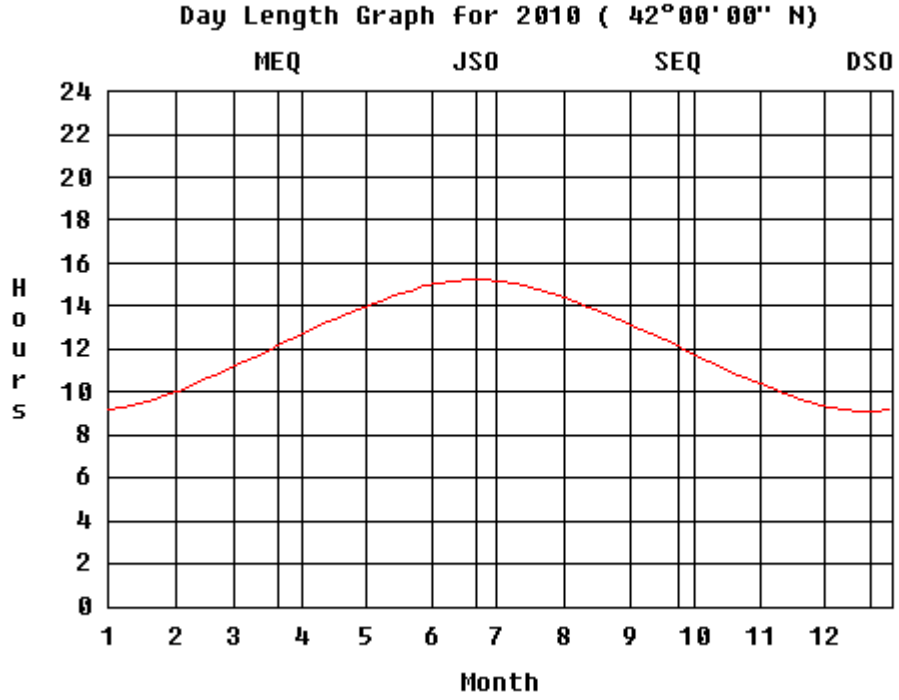
Grafici d’uso quotidiano



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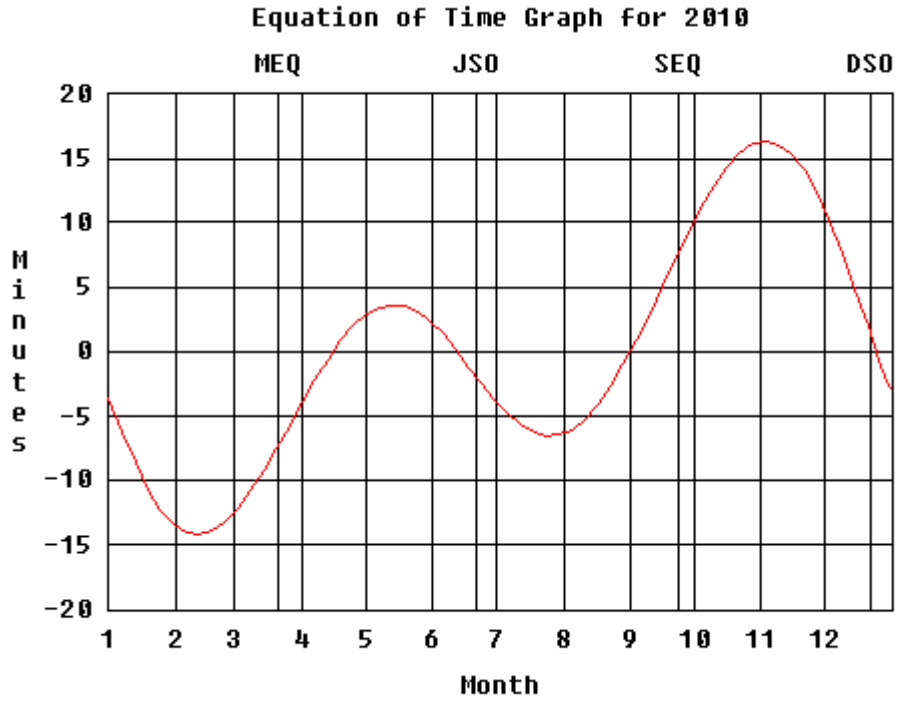

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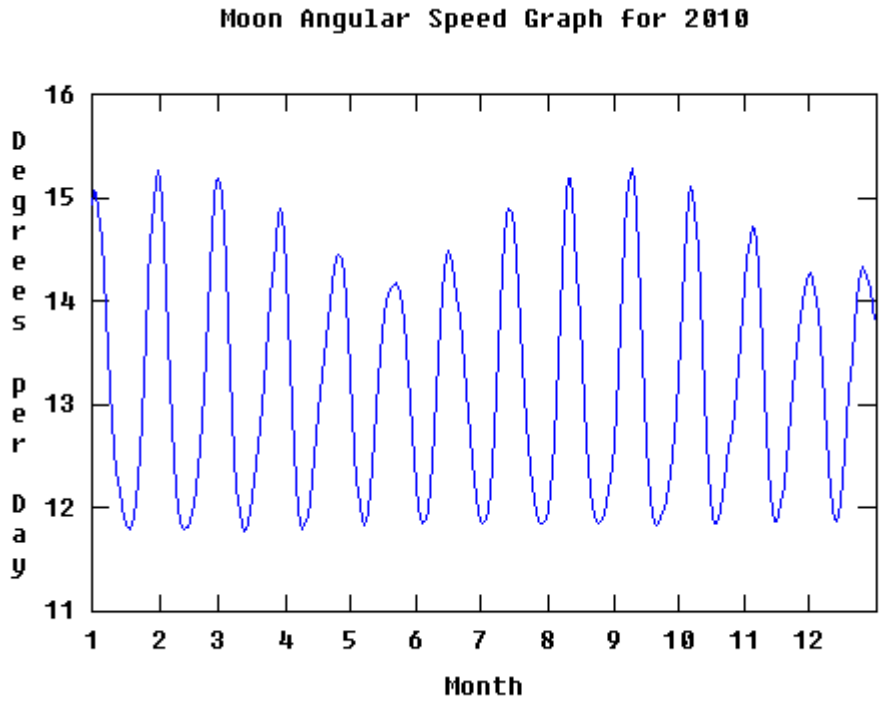

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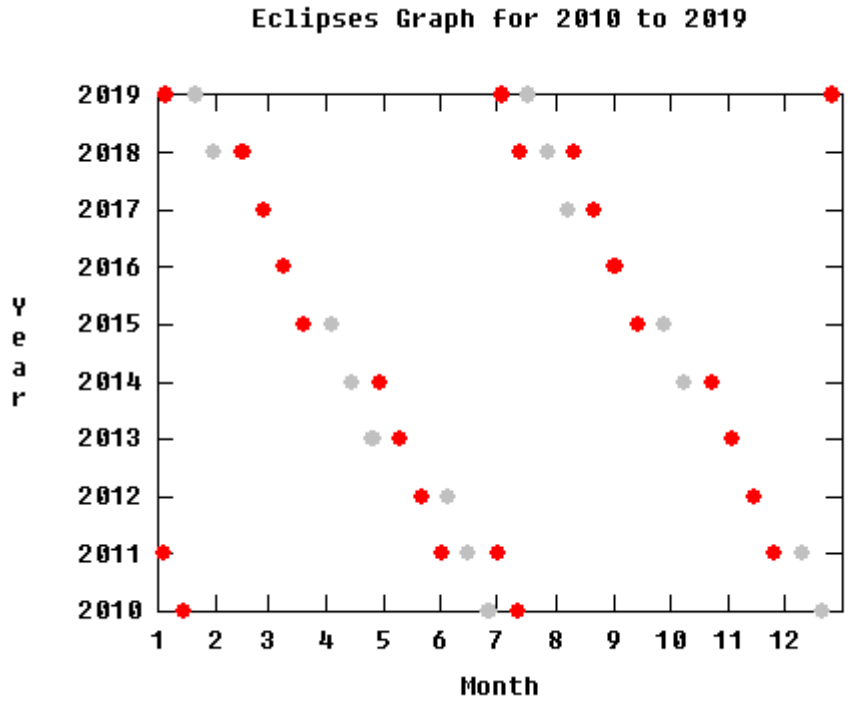

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