Пояснение для эфемерид больших планет. В эфемеридах планет приводятся: Date (год, месяц, день), Right Asc. – прямое восхождение, Declination – склонение, Distance - геоцентрическое расстояние от Земли до планеты в астрономических единицах, dia – видимый диаметр в секундах дуги, mag - звездная величина, Elong – видимое угловое удаление (элонгация) от Солнца в градусах, I - фазовый угол (угол при центре планеты между направлениями на Солнце и Землю), Фаза - величина освещенной части диска планеты (от 0 до 100%), Limb - позиционный угол средней точки светлого лимба в градусах (отсчитывается от точки севера против часовой стрелки от 0° до 360°), De - угол наклона оси планеты к картинной плоскости перпендикулярной лучу зрения в градусах, причем знак указывает наклон северного «+» или южного «-» полюса планеты к Земле (для Сатурна это также наклон колец), Pp – позиционный угол северного полюса планеты по отношению к полюсу мира в градусах (отсчитывается при центре планеты против часовой стрелки от 0° до 360°). *(Occult v4.0)*

Sun
Equinox of J2000

Date			Right Asc.			Declination			Distance	dia	Po	Bo	Lo	Carrington
year	mth	d	h	m	s	o	'	"	AU	"	o	o	o	Rotation #
2030	Jan	1	18	44	18.90	-23	2	41.1	0.983353	1951.8	2.04	-3.00	96.05	2359
2030	Jan	6	19	6	20.17	-22	33	35.8	0.983354	1951.7	359.62	-3.57	30.21	2359
2030	Jan	11	19	28	10.09	-21	53	22.8	0.983452	1951.6	357.22	-4.12	324.36	2360
2030	Jan	16	19	49	45.24	-21	2	32.2	0.983673	1951.1	354.87	-4.63	258.52	2360
2030	Jan	21	20	11	3.22	-20	1	39.7	0.984040	1950.4	352.58	-5.11	192.69	2360
2030	Jan	26	20	32	2.59	-18	51	24.9	0.984558	1949.4	350.37	-5.54	126.85	2360
2030	Jan	31	20	52	42.54	-17	32	32.0	0.985199	1948.1	348.25	-5.94	61.02	2360
2030	Feb	5	21	13	2.40	-16	5	50.7	0.985925	1946.7	346.25	-6.28	355.19	2361
2030	Feb	10	21	33	1.87	-14	32	14.4	0.986730	1945.1	344.37	-6.58	289.36	2361
2030	Feb	15	21	52	41.50	-12	52	35.9	0.987632	1943.3	342.63	-6.82	223.52	2361
2030	Feb	20	22	12	2.64	-11	7	46.2	0.988650	1941.3	341.02	-7.01	157.68	2361
2030	Feb	25	22	31	7.36	- 9	18	34.1	0.989783	1939.1	339.56	-7.15	91.83	2361
2030	Mar	2	22	49	57.85	- 7	25	49.3	0.990993	1936.7	338.26	-7.23	25.97	2361
2030	Mar	7	23	8	36.07	- 5	30	23.8	0.992241	1934.3	337.11	-7.25	320.10	2362
2030	Mar	12	23	27	3.99	- 3	33	9.0	0.993521	1931.8	336.12	-7.22	254.22	2362
2030	Mar	17	23	45	23.87	- 1	34	53.4	0.994845	1929.2	335.30	-7.13	188.32	2362
2030	Mar	22	0	3	38.39	0	23	38.0	0.996233	1926.5	334.65	-6.99	122.40	2362
2030	Mar	27	0	21	50.56	2	21	42.4	0.997676	1923.7	334.17	-6.80	56.47	2362
2030	Apr	1	0	40	3.13	4	18	35.7	0.999131	1920.9	333.87	-6.56	350.52	2363
2030	Apr	6	0	58	18.28	6	13	31.7	1.000562	1918.2	333.75	-6.27	284.55	2363
2030	Apr	11	1	16	37.99	8	5	45.2	1.001964	1915.5	333.81	-5.93	218.56	2363
2030	Apr	16	1	35	4.24	9	54	32.8	1.003349	1912.9	334.06	-5.56	152.55	2363
2030	Apr	21	1	53	39.20	11	39	14.1	1.004738	1910.2	334.48	-5.14	86.52	2363
2030	Apr	26	2	12	25.15	13	19	9.6	1.006117	1907.6	335.10	-4.69	20.47	2363
2030	May	1	2	31	23.69	14	53	38.0	1.007442	1905.1	335.89	-4.20	314.40	2364
2030	May	6	2	50	35.64	16	21	57.4	1.008684	1902.7	336.86	-3.69	248.31	2364
2030	May	11	3	10	1.34	17	43	27.6	1.009839	1900.6	338.01	-3.15	182.20	2364
2030	May	16	3	29	40.87	18	57	31.3	1.010925	1898.5	339.33	-2.59	116.08	2364
2030	May	21	3	49	34.29	20	3	34.3	1.011963	1896.6	340.81	-2.01	49.95	2364
2030	May	26	4	9	41.47	21	1	4.5	1.012937	1894.7	342.44	-1.42	343.80	2365
2030	May	31	4	30	1.28	21	49	31.9	1.013807	1893.1	344.21	-0.82	277.64	2365
2030	Jun	5	4	50	31.72	22	28	30.2	1.014549	1891.7	346.11	-0.22	211.47	2365
2030	Jun	10	5	11	10.26	22	57	38.4	1.015165	1890.6	348.12	0.39	145.29	2365
2030	Jun	15	5	31	54.23	23	16	41.4	1.015678	1889.6	350.21	0.99	79.11	2365
2030	Jun	20	5	52	41.25	23	25	29.3	1.016114	1888.8	352.38	1.58	12.93	2365
2030	Jun	25	6	13	28.91	23	23	57.4	1.016453	1888.2	354.60	2.16	306.74	2366
2030	Jun	30	6	34	14.28	23	12	7.3	1.016661	1887.8	356.86	2.73	240.56	2366
2030	Jul	5	6	54	54.16	22	50	7.7	1.016722	1887.7	359.12	3.28	174.38	2366
2030	Jul	10	7	15	25.52	22	18	13.6	1.016642	1887.8	1.38	3.80	108.21	2366
2030	Jul	15	7	35	45.95	21	36	44.8	1.016456	1888.2	3.61	4.30	42.04	2366
2030	Jul	20	7	55	54.01	20	46	3.7	1.016186	1888.7	5.80	4.77	335.88	2367
2030	Jul	25	8	15	48.71	19	46	36.8	1.015815	1889.4	7.93	5.21	269.73	2367
2030	Jul	30	8	35	29.06	18	38	55.4	1.015316	1890.3	9.99	5.61	203.59	2367
2030	Aug	4	8	54	54.32	17	23	35.1	1.014677	1891.5	11.97	5.98	137.46	2367
2030	Aug	9	9	14	4.15	16	1	13.8	1.013914	1892.9	13.85	6.30	71.34	2367
2030	Aug	14	9	32	59.03	14	32	29.0	1.013067	1894.5	15.62	6.58	5.24	2367
2030	Aug	19	9	51	40.31	12	57	56.5	1.012158	1896.2	17.29	6.81	299.15	2368
2030	Aug	24	10	10	9.60	11	18	14.0	1.011172	1898.1	18.83	7.00	233.08	2368
2030	Aug	29	10	28	28.46	9	34	1.6	1.010088	1900.1	20.24	7.13	167.01	2368
2030	Sep	3	10	46	38.40	7	46	1.6	1.008897	1902.3	21.52	7.22	100.96	2368
2030	Sep	8	11	4	41.12	5	54	56.3	1.007627	1904.7	22.66	7.25	34.93	2368
2030	Sep	13	11	22	38.91	4	1	25.2	1.006320	1907.2	23.66	7.23	328.90	2369
2030	Sep	18	11	40	34.56	2	6	6.6	1.004996	1909.7	24.50	7.16	262.89	2369
2030	Sep	23	11	58	30.83	0	9	40.6	1.003643	1912.3	25.18	7.04	196.89	2369
2030	Sep	28	12	16	30.23	- 1	47	10.1	1.002243	1915.0	25.70	6.86	130.90	2369

2030	Oct	3	12	34	34.93	- 3	43	39.8	1.000792	1917.7	26.05	6.64	64.92	2369	
2030	Oct	8	12	52	47.12	- 5	39	3.1	0.999323	1920.6	26.23	6.36	358.95	2370	
2030	Oct	13	13	11	9.39	- 7	32	36.4	0.997881	1923.3	26.22	6.04	292.99	2370	
2030	Oct	18	13	29	44.53	- 9	23	35.5	0.996481	1926.0	26.03	5.67	227.03	2370	
2030	Oct	23	13	48	35.03	-11	11	13.7	0.995113	1928.7	25.65	5.26	161.09	2370	
2030	Oct	28	14	7	42.86	-12	54	41.3	0.993760	1931.3	25.07	4.80	95.15	2370	
2030	Nov	2	14	27	9.25	-14	33	6.4	0.992418	1933.9	24.30	4.31	29.21	2370	
2030	Nov	7	14	46	55.18	-16	5	37.8	0.991127	1936.4	23.34	3.78	323.28	2371	
2030	Nov	12	15	7	1.69	-17	31	26.4	0.989925	1938.8	22.17	3.23	257.36	2371	
2030	Nov	17	15	27	29.53	-18	49	43.2	0.988825	1940.9	20.82	2.65	191.45	2371	
2030	Nov	22	15	48	18.70	-19	59	39.6	0.987816	1942.9	19.29	2.05	125.54	2371	
2030	Nov	27	16	9	28.15	-21	0	28.7	0.986874	1944.8	17.57	1.43	59.64	2371	
2030	Dec	2	16	30	55.67	-21	51	27.1	0.986000	1946.5	15.70	0.79	353.74	2372	
2030	Dec	7	16	52	38.59	-22	31	57.3	0.985230	1948.0	13.69	0.16	287.85	2372	
2030	Dec	12	17	14	34.14	-23	1	28.6	0.984597	1949.3	11.54	-0.49	221.97	2372	
2030	Dec	17	17	36	39.17	-23	19	37.0	0.984108	1950.3	9.29	-1.12	156.09	2372	
2030	Dec	22	17	58	49.99	-23	26	6.2	0.983745	1951.0	6.96	-1.75	90.22	2372	
2030	Dec	27	18	21	2.23	-23	20	49.5	0.983479	1951.5	4.58	-2.37	24.36	2372	

Mercury
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
2030	Jan	1	18	38	34.46	-20	29	17.3	0.673413	9.9	5.3	2.9w		171	0.6	152.7	-8	1
2030	Jan	4	18	22	7.91	-20	11	56.8	0.685510	9.7	3.1	8.6w		153	5.5	109.0	-8	3
2030	Jan	7	18	10	20.60	-20	8	58.5	0.719871	9.3	1.5	14.2w		134	15.3	102.0	-8	4
2030	Jan	10	18	4	49.52	-20	19	42.9	0.768909	8.7	0.6	18.5w		118	26.7	98.9	-8	5
2030	Jan	13	18	5	15.96	-20	40	24.2	0.825592	8.1	0.1	21.4w		104	37.8	96.5	-8	5
2030	Jan	16	18	10	33.97	-21	6	2.4	0.884826	7.5	-0.1	23.1w		93	47.4	94.4	-7	4
2030	Jan	19	18	19	34.15	-21	31	59.2	0.943411	7.1	-0.2	24.0w		84	55.6	92.2	-7	3
2030	Jan	22	18	31	19.42	-21	54	35.6	0.999515	6.7	-0.2	24.3w		76	62.3	89.8	-7	2
2030	Jan	25	18	45	6.85	-22	11	11.3	1.052177	6.3	-0.2	24.2w		69	67.9	87.4	-6	360
2030	Jan	28	19	0	25.14	-22	19	53.1	1.100952	6.1	-0.2	23.7w		63	72.5	84.9	-6	358
2030	Jan	31	19	16	51.53	-22	19	22.1	1.145686	5.8	-0.2	23.0w		58	76.4	82.3	-6	356
2030	Feb	3	19	34	9.37	-22	8	43.3	1.186385	5.6	-0.2	22.1w		54	79.7	79.7	-6	354
2030	Feb	6	19	52	6.32	-21	47	18.3	1.223128	5.5	-0.2	21.0w		49	82.5	77.0	-6	352
2030	Feb	9	20	10	33.26	-21	14	40.2	1.256016	5.3	-0.2	19.7w		45	85.1	74.4	-6	350
2030	Feb	12	20	29	23.45	-20	30	29.9	1.285136	5.2	-0.3	18.3w		42	87.3	71.6	-5	348
2030	Feb	15	20	48	31.96	-19	34	33.7	1.310533	5.1	-0.3	16.8w		38	89.4	68.9	-5	346
2030	Feb	18	21	7	55.41	-18	26	42.3	1.332193	5.0	-0.4	15.1w		34	91.3	66.1	-5	344
2030	Feb	21	21	27	31.63	-17	6	49.2	1.350019	4.9	-0.5	13.3w		30	93.1	63.2	-5	342
2030	Feb	24	21	47	19.54	-15	34	51.3	1.363806	4.9	-0.7	11.4w		26	94.8	60.0	-5	340
2030	Feb	27	22	7	18.96	-13	50	48.7	1.373221	4.9	-0.9	9.3w		22	96.3	56.3	-5	338
2030	Mar	2	22	27	30.33	-11	54	46.5	1.377770	4.8	-1.1	7.1w		17	97.7	51.5	-5	337
2030	Mar	5	22	47	54.53	- 9	46	57.6	1.376774	4.9	-1.4	4.8w		12	98.9	43.4	-5	335
2030	Mar	8	23	8	32.35	- 7	27	48.0	1.369337	4.9	-1.7	2.5w		7	99.7	21.8	-4	334
2030	Mar	11	23	29	23.76	- 4	58	5.2	1.354337	4.9	-1.9	1.8e		5	99.8	304.3	-4	333
2030	Mar	14	23	50	26.52	- 2	19	12.9	1.330470	5.0	-1.8	4.0e		12	99.0	263.6	-4	332
2030	Mar	17	0	11	34.32	0	26	30.8	1.296406	5.2	-1.6	6.8e		21	96.7	252.8	-4	332
2030	Mar	20	0	32	34.22	3	15	32.6	1.251105	5.3	-1.4	9.8e		32	92.4	248.2	-4	331
2030	Mar	23	0	53	4.52	6	2	53.6	1.194319	5.6	-1.2	12.6e		44	85.7	245.7	-4	331
2030	Mar	26	1	12	34.23	8	42	22.9	1.127096	5.9	-1.1	15.1e		58	76.7	244.3	-4	332
2030	Mar	29	1	30	25.68	11	7	24.2	1.051992	6.3	-0.9	17.2e		72	65.8	243.4	-4	332
2030	Apr	1	1	45	59.76	13	11	59.1	0.972717	6.9	-0.6	18.5e		85	54.0	242.8	-4	332
2030	Apr	4	1	58	41.42	14	51	30.4	0.893369	7.5	-0.2	19.1e		99	42.2	242.3	-4	333
2030	Apr	7	2	8	3.44	16	2	48.0	0.817718	8.2	0.4	18.7e		112	31.2	241.6	-4	333
2030	Apr	10	2	13	48.81	16	43	50.7	0.748837	8.9	1.1	17.4e		125	21.5	240.6	-4	334
2030	Apr	13	2	15	53.77	16	53	35.9	0.689075	9.7	1.9	15.0e		137	13.4	239.1	-4	334
2030	Apr	16	2	14	32.16	16	32	20.3	0.640153	10.4	3.0	11.7e		149	7.0	236.6	-4	334
2030	Apr	19	2	10	19.53	15	42	34.6	0.603237	11.1	4.4	7.5e		161	2.6	231.8	-4	334
2030	Apr	22	2	4	13.18	14	30	2.1	0.578911	11.5	6.0	3.0e		173	0.4	213.7	-4	333
2030	Apr	25	1	57	24.71	13	3	47.4	0.567120	11.8	6.1	2.7w		174	0.3	91.1	-3	333
2030	Apr	28	1	51	6.43	11	34	55.0	0.567166	11.8	4.7	7.4w		163	2.1	70.6	-2	333
2030	May	1	1	46	17.56	10	14	5.9	0.577842	11.6	3.5	11.9w		153	5.5	65.9	-2	333

2030 May 4	1	43	36.69	9	9	29.9	0.597660	11.2	2.6	15.9w	143	9.9	63.9	-1	332
2030 May 7	1	43	21.76	8	25	51.9	0.625090	10.7	2.0	19.2w	135	14.8	62.9	0	332
2030 May 10	1	45	35.24	8	4	52.3	0.658747	10.1	1.5	21.7w	127	20.1	62.5	0	333
2030 May 13	1	50	10.43	8	6	2.6	0.697469	9.6	1.1	23.6w	119	25.4	62.4	1	333
2030 May 16	1	56	56.82	8	27	40.7	0.740333	9.0	0.8	24.8w	113	30.7	62.5	1	333
2030 May 19	2	5	43.58	9	7	31.0	0.786621	8.5	0.6	25.4w	106	36.0	63.0	1	333
2030 May 22	2	16	21.56	10	3	7.6	0.835755	8.0	0.4	25.5w	100	41.3	63.6	2	334
2030 May 25	2	28	44.15	11	12	4.8	0.887241	7.5	0.2	25.2w	94	46.6	64.4	2	335
2030 May 28	2	42	47.70	12	32	0.2	0.940602	7.1	0.0	24.3w	88	52.1	65.5	2	335
2030 May 31	2	58	31.62	14	0	32.0	0.995296	6.7	-0.1	23.1w	81	57.8	66.9	3	337
2030 Jun 3	3	15	58.11	15	35	12.3	1.050627	6.4	-0.3	21.4w	74	63.8	68.6	3	338
2030 Jun 6	3	35	11.53	17	13	17.9	1.105627	6.0	-0.5	19.4w	66	70.2	70.7	3	339
2030 Jun 9	3	56	17.14	18	51	37.5	1.158943	5.8	-0.7	17.0w	58	76.8	73.3	3	341
2030 Jun 12	4	19	18.85	20	26	20.3	1.208730	5.5	-1.0	14.2w	48	83.5	76.4	3	344
2030 Jun 15	4	44	15.70	21	52	49.0	1.252651	5.3	-1.2	11.1w	37	89.8	80.5	3	346
2030 Jun 18	5	10	57.35	23	5	49.5	1.288067	5.2	-1.6	7.7w	26	95.0	86.2	3	349
2030 Jun 21	5	39	0.32	24	0	7.6	1.312518	5.1	-2.0	4.1w	14	98.6	97.0	4	352
2030 Jun 24	6	7	48.13	24	31	30.1	1.324404	5.0	-2.4	1.2w	4	99.9	162.5	4	356
2030 Jun 27	6	36	37.11	24	37	46.4	1.323489	5.0	-2.0	3.6e	12	99.0	249.9	4	359
2030 Jun 30	7	4	45.70	24	19	10.6	1.310900	5.1	-1.5	7.1e	23	96.2	262.5	4	2
2030 Jul 3	7	31	41.85	23	37	56.9	1.288638	5.2	-1.2	10.4e	32	92.2	268.8	4	6
2030 Jul 6	7	57	5.63	22	37	27.5	1.258949	5.3	-0.9	13.4e	41	87.7	273.3	5	9
2030 Jul 9	8	20	47.59	21	21	25.5	1.223888	5.5	-0.7	16.1e	49	82.9	277.0	5	11
2030 Jul 12	8	42	45.52	19	53	25.1	1.185116	5.6	-0.5	18.6e	56	78.2	280.2	5	14
2030 Jul 15	9	3	1.28	18	16	38.3	1.143883	5.8	-0.3	20.8e	62	73.7	282.9	6	16
2030 Jul 18	9	21	38.44	16	33	53.3	1.101080	6.1	-0.2	22.6e	67	69.2	285.3	6	18
2030 Jul 21	9	38	40.61	14	47	37.9	1.057324	6.3	-0.1	24.2e	73	64.9	287.4	6	19
2030 Jul 24	9	54	10.36	13	0	5.4	1.013038	6.6	0.0	25.5e	78	60.7	289.3	7	21
2030 Jul 27	10	8	8.50	11	13	20.8	0.968531	6.9	0.1	26.4e	83	56.5	291.1	7	22
2030 Jul 30	10	20	33.52	9	29	27.6	0.924052	7.2	0.2	27.0e	88	52.1	292.7	8	23
2030 Aug 2	10	31	21.16	7	50	35.2	0.879855	7.6	0.3	27.3e	93	47.6	294.2	8	24
2030 Aug 5	10	40	23.99	6	19	6.1	0.836251	8.0	0.4	27.1e	98	42.8	295.7	8	24
2030 Aug 8	10	47	31.15	4	57	43.8	0.793676	8.4	0.5	26.4e	104	37.7	297.3	9	25
2030 Aug 11	10	52	28.54	3	49	40.9	0.752767	8.9	0.7	25.2e	111	32.2	299.0	9	25
2030 Aug 14	10	54	59.73	2	58	42.4	0.714447	9.3	1.0	23.3e	118	26.3	301.0	10	26
2030 Aug 17	10	54	48.62	2	29	1.6	0.680022	9.8	1.4	20.7e	127	20.1	303.5	10	26
2030 Aug 20	10	51	44.54	2	24	53.5	0.651272	10.3	2.0	17.3e	136	13.8	307.0	11	25
2030 Aug 23	10	45	51.12	2	49	32.1	0.630496	10.6	2.9	13.1e	147	8.1	312.6	11	25
2030 Aug 26	10	37	37.72	3	43	21.5	0.620408	10.8	4.1	8.5e	158	3.5	324.4	11	25
2030 Aug 29	10	28	8.33	5	1	52.0	0.623810	10.7	5.3	4.5w	168	1.1	1.0	11	24
2030 Sep 1	10	18	59.37	6	34	47.8	0.643018	10.4	4.8	5.4w	165	1.6	68.9	10	23
2030 Sep 4	10	12	1.03	8	7	48.2	0.679211	9.8	3.2	9.5w	152	5.8	93.7	10	22
2030 Sep 7	10	8	49.05	9	26	11.9	0.731973	9.1	1.8	13.3w	137	13.4	102.7	9	22
2030 Sep 10	10	10	21.98	10	18	21.9	0.799154	8.4	0.7	16.1w	121	24.1	107.5	8	22
2030 Sep 13	10	16	53.56	10	37	15.0	0.877023	7.6	0.0	17.6w	105	36.9	110.8	7	23
2030 Sep 16	10	27	58.01	10	20	18.1	0.960653	7.0	-0.5	17.9w	89	50.6	113.6	6	23
2030 Sep 19	10	42	42.40	9	28	55.2	1.044616	6.4	-0.8	17.1w	74	63.7	116.0	5	24
2030 Sep 22	11	0	1.96	8	7	38.7	1.123957	5.9	-1.0	15.6w	60	75.1	118.3	5	26
2030 Sep 25	11	18	54.82	6	22	55.7	1.195066	5.6	-1.1	13.6w	47	84.1	120.5	4	27
2030 Sep 28	11	38	31.91	4	21	40.9	1.256031	5.3	-1.2	11.3w	36	90.6	122.8	4	27
2030 Oct 1	11	58	20.24	2	10	7.2	1.306396	5.1	-1.3	8.9w	26	94.9	125.2	4	28
2030 Oct 4	12	18	0.89	- 0	6	47.0	1.346644	5.0	-1.4	6.4w	18	97.6	128.5	3	28
2030 Oct 7	12	37	25.09	- 2	25	20.0	1.377690	4.8	-1.5	4.1w	11	99.1	134.3	3	29
2030 Oct 10	12	56	30.46	- 4	42	53.6	1.400553	4.8	-1.6	1.9w	5	99.8	152.2	3	29
2030 Oct 13	13	15	18.20	- 6	57	36.0	1.416170	4.7	-1.6	1.2e	3	99.9	240.4	2	28
2030 Oct 16	13	33	51.32	- 9	8	7.5	1.425331	4.7	-1.3	2.9e	7	99.7	279.2	2	28
2030 Oct 19	13	52	13.56	-11	13	29.5	1.428656	4.7	-1.1	4.8e	11	99.1	287.2	2	27
2030 Oct 22	14	10	28.73	-13	12	55.9	1.426613	4.7	-0.9	6.7e	15	98.3	290.1	2	26
2030 Oct 25	14	28	40.38	-15	5	48.7	1.419528	4.7	-0.7	8.5e	19	97.4	291.1	1	25
2030 Oct 28	14	46	51.46	-16	51	33.2	1.407611	4.7	-0.6	10.2e	22	96.2	291.3	1	24
2030 Oct 31	15	5	4.19	-18	29	36.4	1.390969	4.8	-0.5	11.9e	26	94.9	291.0	1	23
2030 Nov 3	15	23	19.80	-19	59	24.9	1.369633	4.9	-0.4	13.5e	30	93.4	290.3	1	22
2030 Nov 6	15	41	38.33	-21	20	24.1	1.343556	5.0	-0.4	15.0e	34	91.7	289.3	0	20
2030 Nov 9	15	59	58.27	-22	31	57.3	1.312628	5.1	-0.4	16.4e	38	89.6	288.0	0	18
2030 Nov 12	16	18	15.96	-23	33	26.2	1.276684	5.2	-0.3	17.7e	42	87.1	286.6	0	16
2030 Nov 15	16	36	24.87	-24	24	10.7	1.235521	5.4	-0.4	18.9e	47	84.1	285.0	0	15
2030 Nov 18	16	54	14.39	-25	3	30.4	1.188929	5.6	-0.4	20.0e	52	80.5	283.3	-1	13

2030	Nov	21	17	11	28.18	-25	30	47.3	1.136745	5.9	-0.4	20.9e	59	75.9	281.5	-1	11
2030	Nov	24	17	27	41.80	-25	45	29.1	1.078948	6.2	-0.4	21.6e	66	70.2	279.6	-1	9
2030	Nov	27	17	42	19.21	-25	47	14.4	1.015830	6.6	-0.4	21.8e	75	63.1	277.8	-2	7
2030	Nov	30	17	54	28.49	-25	35	58.5	0.948286	7.0	-0.4	21.5e	85	54.2	276.1	-2	6
2030	Dec	3	18	2	58.04	-25	11	56.4	0.878280	7.6	-0.2	20.3e	98	43.3	274.5	-3	5
2030	Dec	6	18	6	18.06	-24	35	38.5	0.809476	8.3	0.3	18.0e	113	30.7	273.0	-4	5
2030	Dec	9	18	2	59.53	-23	47	39.6	0.747841	8.9	1.2	14.2e	131	17.4	271.1	-4	5
2030	Dec	12	17	52	28.43	-22	49	1.2	0.701524	9.5	2.9	8.7e	151	6.2	266.8	-5	6
2030	Dec	15	17	36	26.42	-21	43	39.1	0.678859	9.8	5.5	2.5e	172	0.5	232.6	-6	8
2030	Dec	18	17	19	10.67	-20	41	47.7	0.684402	9.8	4.1	5.7w	162	2.6	118.7	-6	10
2030	Dec	21	17	5	29.17	-19	57	19.1	0.716073	9.3	1.9	11.9w	141	11.3	109.2	-6	12
2030	Dec	24	16	58	4.69	-19	38	38.3	0.766639	8.7	0.7	16.6w	122	23.5	106.3	-6	12
2030	Dec	27	16	57	11.01	-19	44	43.0	0.827754	8.1	0.1	19.8w	106	36.0	104.2	-6	12
2030	Dec	30	17	1	44.31	-20	8	48.7	0.892750	7.5	-0.2	21.7w	93	47.1	102.3	-6	12

Venus
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
2030	Jan	1	19	20	57.28	-18	56	43.9	0.269087	62.5	-4.3	9.5e	167	1.3	242.8	-3	353
2030	Jan	6	19	8	0.38	-18	6	7.9	0.265502	63.4	-4.4	4.5e	174	0.3	184.9	-4	355
2030	Jan	11	18	55	5.92	-17	24	9.9	0.269287	62.5	-4.3	9.0w	168	1.2	121.3	-5	356
2030	Jan	16	18	44	16.93	-16	53	46.4	0.280186	60.0	-4.4	16.0w	158	3.7	107.6	-6	357
2030	Jan	21	18	37	2.85	-16	36	22.5	0.297440	56.5	-4.6	22.6w	148	7.5	102.3	-6	357
2030	Jan	26	18	34	5.52	-16	31	10.4	0.320002	52.6	-4.8	28.2w	140	11.9	99.2	-6	358
2030	Jan	31	18	35	25.82	-16	35	32.8	0.346768	48.5	-4.8	32.8w	132	16.5	96.8	-6	358
2030	Feb	5	18	40	39.89	-16	45	57.8	0.376772	44.6	-4.9	36.5w	125	21.1	94.6	-6	357
2030	Feb	10	18	49	15.37	-16	58	43.1	0.409264	41.1	-4.9	39.4w	119	25.5	92.4	-6	356
2030	Feb	15	19	0	40.29	-17	10	18.3	0.443670	37.9	-4.8	41.7w	114	29.6	90.2	-5	355
2030	Feb	20	19	14	25.83	-17	17	38.6	0.479536	35.1	-4.8	43.4w	109	33.4	88.0	-5	354
2030	Feb	25	19	30	6.53	-17	18	11.3	0.516480	32.6	-4.8	44.7w	105	37.0	85.7	-4	352
2030	Mar	2	19	47	19.38	-17	10	0.0	0.554183	30.4	-4.7	45.5w	101	40.3	83.5	-4	351
2030	Mar	7	20	5	44.07	-16	51	43.4	0.592418	28.4	-4.6	46.1w	98	43.4	81.2	-3	349
2030	Mar	12	20	25	3.75	-16	22	27.5	0.631036	26.7	-4.6	46.5w	94	46.3	79.0	-3	348
2030	Mar	17	20	45	4.76	-15	41	40.7	0.669922	25.1	-4.5	46.6w	91	49.1	76.9	-2	346
2030	Mar	22	21	5	36.08	-14	49	11.7	0.708970	23.7	-4.5	46.6w	88	51.7	74.9	-2	344
2030	Mar	27	21	26	28.66	-13	45	9.7	0.748057	22.5	-4.4	46.4w	85	54.1	73.0	-2	343
2030	Apr	1	21	47	34.63	-12	30	4.9	0.787064	21.4	-4.4	46.0w	83	56.4	71.3	-1	342
2030	Apr	6	22	8	47.78	-11	4	43.0	0.825914	20.4	-4.3	45.6w	80	58.7	69.7	-1	340
2030	Apr	11	22	30	3.92	- 9	29	58.1	0.864563	19.5	-4.3	45.1w	78	60.8	68.4	-1	339
2030	Apr	16	22	51	20.74	- 7	46	50.1	0.902974	18.6	-4.2	44.4w	75	62.8	67.2	0	339
2030	Apr	21	23	12	37.58	- 5	56	23.7	0.941099	17.9	-4.2	43.7w	73	64.8	66.3	0	338
2030	Apr	26	23	33	54.83	- 3	59	49.3	0.978855	17.2	-4.2	43.0w	71	66.7	65.6	0	337
2030	May	1	23	55	13.26	- 1	58	24.8	1.016156	16.6	-4.1	42.2w	68	68.5	65.1	0	337
2030	May	6	0	16	34.33	0	6	30.2	1.052951	16.0	-4.1	41.3w	66	70.3	64.9	0	337
2030	May	11	0	38	0.27	2	13	36.0	1.089207	15.4	-4.0	40.4w	64	72.0	64.9	1	337
2030	May	16	0	59	34.05	4	21	33.4	1.124901	15.0	-4.0	39.4w	62	73.6	65.1	1	338
2030	May	21	1	21	19.24	6	29	3.2	1.159990	14.5	-4.0	38.4w	60	75.2	65.7	1	338
2030	May	26	1	43	19.44	8	34	42.7	1.194394	14.1	-4.0	37.4w	58	76.8	66.4	1	339
2030	May	31	2	5	37.75	10	37	5.9	1.228035	13.7	-3.9	36.3w	56	78.2	67.4	1	340
2030	Jun	5	2	28	17.01	12	34	46.1	1.260861	13.3	-3.9	35.2w	54	79.7	68.7	1	341
2030	Jun	10	2	51	19.77	14	26	16.8	1.292841	13.0	-3.9	34.1w	52	81.1	70.2	1	343
2030	Jun	15	3	14	48.30	16	10	12.2	1.323957	12.7	-3.9	33.0w	50	82.5	72.0	1	344
2030	Jun	20	3	38	44.44	17	45	7.0	1.354168	12.4	-3.9	31.8w	47	83.8	74.0	1	346
2030	Jun	25	4	3	8.90	19	9	36.0	1.383397	12.2	-3.9	30.6w	45	85.0	76.2	0	348
2030	Jun	30	4	28	0.91	20	22	17.1	1.411573	11.9	-3.9	29.4w	43	86.3	78.6	0	350
2030	Jul	5	4	53	18.33	21	21	54.5	1.438650	11.7	-3.8	28.2w	42	87.4	81.2	0	353
2030	Jul	10	5	18	57.85	22	7	21.0	1.464607	11.5	-3.8	26.9w	40	88.6	84.0	0	355
2030	Jul	15	5	44	55.23	22	37	40.8	1.489435	11.3	-3.8	25.7w	38	89.7	86.9	0	357
2030	Jul	20	6	11	5.47	22	52	10.3	1.513107	11.1	-3.8	24.4w	36	90.7	89.9	0	0
2030	Jul	25	6	37	22.68	22	50	21.6	1.535559	11.0	-3.8	23.1w	34	91.7	93.0	0	3
2030	Jul	30	7	3	40.28	22	32	3.9	1.556740	10.8	-3.8	21.8w	32	92.6	96.0	0	5
2030	Aug	4	7	29	51.72	21	57	25.0	1.576617	10.7	-3.8	20.5w	30	93.5	99.1	0	8
2030	Aug	9	7	55	51.01	21	6	49.7	1.595192	10.5	-3.8	19.2w	28	94.3	102.1	0	10
2030	Aug	14	8	21	33.36	20	0	57.4	1.612479	10.4	-3.8	17.9w	26	95.1	105.0	0	12
2030	Aug	19	8	46	55.36	18	40	40.3	1.628469	10.3	-3.9	16.6w	24	95.8	107.8	-1	14

2030	Aug	24	9	11	54.75	17	7	2.7	1.643127	10.2	-3.9	15.3w	22	96.4	110.5	-1	16
2030	Aug	29	9	36	30.39	15	21	18.7	1.656426	10.2	-3.9	13.9w	20	97.0	113.0	-1	18
2030	Sep	3	10	0	42.35	13	24	49.8	1.668358	10.1	-3.9	12.6w	18	97.6	115.4	-1	19
2030	Sep	8	10	24	31.87	11	19	1.5	1.678949	10.0	-3.9	11.3w	16	98.1	117.7	-1	20
2030	Sep	13	10	48	1.54	9	5	20.1	1.688239	10.0	-3.9	10.0w	14	98.5	119.9	-1	21
2030	Sep	18	11	11	14.93	6	45	13.4	1.696244	9.9	-3.9	8.7w	12	98.9	122.1	-1	22
2030	Sep	23	11	34	16.16	4	20	10.8	1.702956	9.9	-3.9	7.4w	10	99.2	124.4	0	23
2030	Sep	28	11	57	9.69	1	51	43.6	1.708369	9.8	-3.9	6.1w	8	99.5	127.0	0	23
2030	Oct	3	12	20	0.16	- 0	38	35.4	1.712491	9.8	-3.9	4.8w	7	99.7	130.3	0	23
2030	Oct	8	12	42	52.44	- 3	9	13.2	1.715372	9.8	-4.0	3.5w	5	99.8	135.4	0	23
2030	Oct	13	13	5	51.76	- 5	38	37.9	1.717066	9.8	-4.0	2.3w	3	99.9	145.4	0	22
2030	Oct	18	13	29	3.41	- 8	5	15.8	1.717602	9.8	-4.0	1.3w	2	100.0	172.6	0	21
2030	Oct	23	13	52	32.39	-10	27	30.9	1.716989	9.8	-4.0	1.2e	2	100.0	233.0	0	21
2030	Oct	28	14	16	23.11	-12	43	44.7	1.715227	9.8	-4.0	2.1e	3	99.9	264.8	0	19
2030	Nov	2	14	40	39.15	-14	52	16.2	1.712329	9.8	-4.0	3.3e	4	99.8	275.2	0	18
2030	Nov	7	15	5	23.28	-16	51	24.8	1.708348	9.8	-3.9	4.5e	6	99.7	279.1	1	16
2030	Nov	12	15	30	37.43	-18	39	31.4	1.703339	9.9	-3.9	5.7e	8	99.5	280.5	1	14
2030	Nov	17	15	56	22.36	-20	14	59.1	1.697331	9.9	-3.9	7.0e	9	99.3	280.6	1	12
2030	Nov	22	16	22	37.17	-21	36	15.2	1.690331	10.0	-3.9	8.2e	11	99.1	279.8	1	10
2030	Nov	27	16	49	19.10	-22	41	55.0	1.682328	10.0	-3.9	9.4e	13	98.8	278.5	1	8
2030	Dec	2	17	16	23.33	-23	30	45.7	1.673329	10.1	-3.9	10.6e	14	98.4	276.7	1	5
2030	Dec	7	17	43	43.60	-24	1	50.4	1.663378	10.1	-3.9	11.8e	16	98.0	274.7	1	3
2030	Dec	12	18	11	12.67	-24	14	30.7	1.652513	10.2	-3.9	13.0e	18	97.6	272.5	1	360
2030	Dec	17	18	38	42.70	-24	8	28.4	1.640755	10.3	-3.9	14.2e	19	97.2	270.1	1	357
2030	Dec	22	19	6	5.66	-23	43	47.2	1.628096	10.3	-3.9	15.4e	21	96.7	267.7	1	355
2030	Dec	27	19	33	13.75	-23	0	52.9	1.614510	10.4	-3.9	16.6e	23	96.1	265.3	1	352

Mars
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
2030	Jan	1	21	8	24.49	-17	39	26.6	2.080698	4.5	1.1	34.1e	24	95.8	254.8	-19	0
2030	Jan	6	21	24	3.53	-16	26	39.7	2.099261	4.5	1.2	33.0e	23	96.1	253.7	-21	358
2030	Jan	11	21	39	31.63	-15	9	40.8	2.117692	4.4	1.2	31.8e	22	96.4	252.8	-22	355
2030	Jan	16	21	54	48.67	-13	48	56.6	2.136006	4.4	1.2	30.6e	21	96.6	251.9	-23	353
2030	Jan	21	22	9	54.90	-12	24	53.2	2.154232	4.3	1.2	29.5e	20	96.8	251.1	-23	350
2030	Jan	26	22	24	50.91	-10	57	55.9	2.172386	4.3	1.2	28.3e	20	97.1	250.5	-24	348
2030	Jan	31	22	39	37.51	- 9	28	29.9	2.190451	4.3	1.2	27.2e	19	97.3	249.9	-25	345
2030	Feb	5	22	54	15.46	- 7	57	1.6	2.208379	4.2	1.2	26.0e	18	97.5	249.4	-25	343
2030	Feb	10	23	8	45.40	- 6	23	58.4	2.226139	4.2	1.2	24.9e	17	97.7	249.0	-26	341
2030	Feb	15	23	23	8.10	- 4	49	46.5	2.243731	4.2	1.2	23.7e	17	97.9	248.7	-26	338
2030	Feb	20	23	37	24.51	- 3	14	50.6	2.261165	4.1	1.2	22.6e	16	98.1	248.5	-26	336
2030	Feb	25	23	51	35.80	- 1	39	34.0	2.278440	4.1	1.2	21.4e	15	98.3	248.3	-26	334
2030	Mar	2	0	5	43.19	- 0	4	19.4	2.295509	4.1	1.3	20.3e	14	98.5	248.3	-26	332
2030	Mar	7	0	19	47.65	1	30	29.3	2.312309	4.0	1.3	19.1e	13	98.7	248.3	-25	331
2030	Mar	12	0	33	50.05	3	4	28.5	2.328803	4.0	1.3	18.0e	12	98.8	248.5	-25	329
2030	Mar	17	0	47	51.24	4	37	15.7	2.344978	4.0	1.3	16.8e	12	99.0	248.7	-25	327
2030	Mar	22	1	1	52.19	6	8	30.3	2.360831	4.0	1.3	15.6e	11	99.1	249.0	-24	326
2030	Mar	27	1	15	54.01	7	37	52.8	2.376342	3.9	1.3	14.5e	10	99.2	249.3	-23	325
2030	Apr	1	1	29	57.68	9	5	4.0	2.391443	3.9	1.3	13.3e	9	99.4	249.7	-22	324
2030	Apr	6	1	44	3.90	10	29	43.9	2.406066	3.9	1.3	12.1e	8	99.5	250.2	-21	323
2030	Apr	11	1	58	13.17	11	51	33.1	2.420168	3.9	1.3	10.9e	8	99.6	250.8	-20	322
2030	Apr	16	2	12	25.97	13	10	13.8	2.433731	3.8	1.3	9.7e	7	99.7	251.4	-19	322
2030	Apr	21	2	26	42.82	14	25	29.4	2.446746	3.8	1.3	8.5e	6	99.7	252.0	-18	321
2030	Apr	26	2	41	4.33	15	37	4.7	2.459176	3.8	1.3	7.3e	5	99.8	252.6	-17	321
2030	May	1	2	55	30.80	16	44	44.2	2.470941	3.8	1.4	6.1e	4	99.9	253.1	-16	321
2030	May	6	3	10	2.22	17	48	13.2	2.481975	3.8	1.4	4.9e	3	99.9	253.5	-14	321
2030	May	11	3	24	38.38	18	47	17.7	2.492236	3.8	1.4	3.6e	2	100.0	253.5	-13	322
2030	May	16	3	39	19.00	19	41	45.5	2.501707	3.7	1.4	2.4e	2	100.0	252.4	-11	322
2030	May	21	3	54	3.85	20	31	26.1	2.510377	3.7	1.4	1.2e	1	100.0	246.4	-10	323
2030	May	26	4	8	52.68	21	16	10.1	2.518192	3.7	1.4	0.3w	0	100.0	143.0	-8	324
2030	May	31	4	23	44.91	21	55	48.9	2.525075	3.7	1.4	1.5w	1	100.0	93.8	-7	325
2030	Jun	5	4	38	39.65	22	30	15.6	2.530963	3.7	1.4	2.7w	2	100.0	90.0	-6	326
2030	Jun	10	4	53	35.89	22	59	24.7	2.535821	3.7	1.5	4.0w	3	99.9	89.6	-4	327
2030	Jun	15	5	8	32.59	23	23	13.0	2.539639	3.7	1.5	5.4w	4	99.9	90.0	-3	328
2030	Jun	20	5	23	28.89	23	41	38.5	2.542402	3.7	1.5	6.7w	4	99.9	90.8	-1	330

2030	Jun	25	5	38	23.91	23	54	41.0	2.544051	3.7	1.5	8.0w	5	99.8	91.9	0	331
2030	Jun	30	5	53	16.52	24	2	21.8	2.544511	3.7	1.6	9.4w	6	99.7	93.0	2	333
2030	Jul	5	6	8	5.42	24	4	44.4	2.543732	3.7	1.6	10.8w	7	99.6	94.2	3	334
2030	Jul	10	6	22	49.35	24	1	53.9	2.541689	3.7	1.6	12.2w	8	99.5	95.5	5	336
2030	Jul	15	6	37	27.24	23	53	56.5	2.538383	3.7	1.6	13.6w	9	99.4	96.8	6	338
2030	Jul	20	6	51	58.30	23	40	59.8	2.533796	3.7	1.6	15.1w	10	99.3	98.0	8	340
2030	Jul	25	7	6	21.78	23	23	12.5	2.527865	3.7	1.7	16.5w	11	99.2	99.3	9	342
2030	Jul	30	7	20	36.78	23	0	44.8	2.520530	3.7	1.7	18.0w	11	99.0	100.5	10	344
2030	Aug	4	7	34	42.45	22	33	48.7	2.511753	3.7	1.7	19.5w	12	98.9	101.7	12	345
2030	Aug	9	7	48	38.02	22	2	36.7	2.501529	3.7	1.7	21.0w	13	98.7	102.9	13	347
2030	Aug	14	8	2	23.10	21	27	21.3	2.489868	3.8	1.7	22.6w	14	98.5	104.0	14	349
2030	Aug	19	8	15	57.56	20	48	15.1	2.476749	3.8	1.7	24.2w	15	98.3	105.1	15	351
2030	Aug	24	8	29	21.24	20	5	31.5	2.462121	3.8	1.7	25.8w	16	98.1	106.1	16	354
2030	Aug	29	8	42	33.93	19	19	25.3	2.445938	3.8	1.7	27.4w	17	97.9	107.1	18	356
2030	Sep	3	8	55	35.43	18	30	11.7	2.428183	3.9	1.7	29.0w	18	97.7	108.0	19	358
2030	Sep	8	9	8	25.69	17	38	5.3	2.408874	3.9	1.7	30.7w	18	97.4	108.9	19	360
2030	Sep	13	9	21	4.99	16	43	19.9	2.388033	3.9	1.7	32.4w	19	97.2	109.7	20	2
2030	Sep	18	9	33	33.75	15	46	8.9	2.365642	4.0	1.7	34.1w	20	96.9	110.4	21	4
2030	Sep	23	9	45	52.31	14	46	46.4	2.341668	4.0	1.7	35.9w	21	96.7	111.1	22	6
2030	Sep	28	9	58	0.87	13	45	27.5	2.316088	4.0	1.7	37.7w	22	96.4	111.7	23	8
2030	Oct	3	10	9	59.61	12	42	27.2	2.288913	4.1	1.7	39.5w	23	96.1	112.2	23	10
2030	Oct	8	10	21	48.85	11	37	59.2	2.260191	4.1	1.7	41.3w	24	95.8	112.7	24	12
2030	Oct	13	10	33	29.20	10	32	16.0	2.229953	4.2	1.7	43.2w	24	95.5	113.1	24	14
2030	Oct	18	10	45	1.23	9	25	29.9	2.198199	4.3	1.7	45.1w	25	95.2	113.5	25	15
2030	Oct	23	10	56	25.37	8	17	54.5	2.164917	4.3	1.7	47.0w	26	94.9	113.8	25	17
2030	Oct	28	11	7	41.87	7	9	43.8	2.130117	4.4	1.6	49.0w	27	94.6	114.1	25	19
2030	Nov	2	11	18	50.87	6	1	11.6	2.093847	4.5	1.6	51.0w	28	94.3	114.2	25	21
2030	Nov	7	11	29	52.75	4	52	30.0	2.056183	4.6	1.6	53.0w	28	94.0	114.4	25	22
2030	Nov	12	11	40	48.01	3	43	49.7	2.017172	4.6	1.6	55.1w	29	93.6	114.4	25	24
2030	Nov	17	11	51	37.04	2	35	22.5	1.976836	4.7	1.5	57.2w	30	93.3	114.4	25	26
2030	Nov	22	12	2	20.02	1	27	21.0	1.935198	4.8	1.5	59.3w	31	93.0	114.4	25	27
2030	Nov	27	12	12	56.84	0	19	58.2	1.892301	4.9	1.5	61.5w	31	92.7	114.3	25	28
2030	Dec	2	12	23	27.34	- 0	46	33.4	1.848237	5.1	1.4	63.7w	32	92.4	114.1	24	30
2030	Dec	7	12	33	51.59	- 1	52	3.5	1.803108	5.2	1.4	66.0w	33	92.1	113.9	24	31
2030	Dec	12	12	44	9.64	- 2	56	22.4	1.756982	5.3	1.3	68.3w	33	91.8	113.6	24	32
2030	Dec	17	12	54	21.36	- 3	59	19.3	1.709909	5.5	1.3	70.6w	34	91.5	113.3	23	33
2030	Dec	22	13	4	26.24	- 5	0	42.7	1.661943	5.6	1.2	73.0w	34	91.3	113.0	23	34
2030	Dec	27	13	14	23.44	- 6	0	20.6	1.613173	5.8	1.2	75.4w	35	91.0	112.6	22	35

Jupiter
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
2030	Jan	1	15	11	58.01	-16	48	55.4	6.000768	32.8	-1.6	50.0w	8	99.5	106.3	-3	16
2030	Jan	6	15	15	26.54	-17	2	9.8	5.936043	33.2	-1.7	54.3w	8	99.5	105.9	-3	16
2030	Jan	11	15	18	45.63	-17	14	29.7	5.867871	33.6	-1.7	58.6w	9	99.4	105.5	-3	16
2030	Jan	16	15	21	54.35	-17	25	53.7	5.796625	34.0	-1.7	62.9w	9	99.3	105.2	-3	15
2030	Jan	21	15	24	51.84	-17	36	20.9	5.722673	34.4	-1.7	67.2w	10	99.3	104.9	-3	15
2030	Jan	26	15	27	37.18	-17	45	50.0	5.646379	34.9	-1.8	71.6w	10	99.3	104.6	-3	15
2030	Jan	31	15	30	9.37	-17	54	19.9	5.568123	35.4	-1.8	76.1w	10	99.2	104.3	-3	15
2030	Feb	5	15	32	27.35	-18	1	49.3	5.488352	35.9	-1.8	80.6w	10	99.2	104.0	-3	14
2030	Feb	10	15	34	30.15	-18	8	17.6	5.407574	36.4	-1.9	85.2w	10	99.2	103.7	-3	14
2030	Feb	15	15	36	16.95	-18	13	44.2	5.326302	37.0	-1.9	89.8w	11	99.2	103.5	-3	14
2030	Feb	20	15	37	47.02	-18	18	8.8	5.245037	37.5	-1.9	94.5w	10	99.2	103.3	-3	14
2030	Feb	25	15	38	59.62	-18	21	30.8	5.164271	38.1	-2.0	99.2w	10	99.2	103.1	-3	14
2030	Mar	2	15	39	53.98	-18	23	49.6	5.084532	38.7	-2.0	104.0w	10	99.2	102.9	-3	14
2030	Mar	7	15	40	29.49	-18	25	5.1	5.006411	39.3	-2.0	108.9w	10	99.2	102.8	-3	14
2030	Mar	12	15	40	45.80	-18	25	17.3	4.930517	39.9	-2.1	113.8w	10	99.3	102.6	-3	14
2030	Mar	17	15	40	42.83	-18	24	26.8	4.857436	40.5	-2.1	118.8w	9	99.3	102.5	-3	14
2030	Mar	22	15	40	20.66	-18	22	34.3	4.787716	41.1	-2.1	123.9w	9	99.4	102.4	-3	14
2030	Mar	27	15	39	39.51	-18	19	40.7	4.721891	41.7	-2.2	129.0w	8	99.5	102.3	-3	14
2030	Apr	1	15	38	39.76	-18	15	47.3	4.660526	42.3	-2.2	134.2w	8	99.6	102.2	-3	14
2030	Apr	6	15	37	22.22	-18	10	56.4	4.604200	42.8	-2.2	139.4w	7	99.6	102.0	-3	14
2030	Apr	11	15	35	48.10	-18	5	11.3	4.553441	43.3	-2.3	144.7w	6	99.7	101.9	-3	14
2030	Apr	16	15	33	58.93	-17	58	36.1	4.508704	43.7	-2.3	150.1w	5	99.8	101.6	-3	14
2030	Apr	21	15	31	56.46	-17	51	15.6	4.470367	44.1	-2.3	155.5w	4	99.9	101.2	-3	14
2030	Apr	26	15	29	42.57	-17	43	15.3	4.438776	44.4	-2.3	160.9w	3	99.9	100.6	-3	15

2030 May 1	15 27 19.43	-17 34 42.2	4.414263	44.6	-2.4	166.3w	3	100.0	99.3	-3	15
2030 May 6	15 24 49.57	-17 25 44.4	4.397087	44.8	-2.4	171.7w	2	100.0	96.1	-3	15
2030 May 11	15 22 15.70	-17 16 31.1	4.387398	44.9	-2.4	177.0w	1	100.0	80.8	-3	15
2030 May 16	15 19 40.60	-17 7 11.9	4.385231	44.9	-2.4	177.0e	1	100.0	308.1	-3	15
2030 May 21	15 17 6.87	-16 57 56.8	4.390532	44.9	-2.4	171.7e	2	100.0	293.2	-3	16
2030 May 26	15 14 37.01	-16 48 55.6	4.403222	44.7	-2.4	166.3e	3	100.0	290.0	-3	16
2030 May 31	15 12 13.56	-16 40 18.8	4.423167	44.5	-2.3	160.9e	4	99.9	288.8	-3	16
2030 Jun 5	15 9 58.95	-16 32 16.6	4.450133	44.3	-2.3	155.6e	4	99.8	288.1	-3	16
2030 Jun 10	15 7 55.39	-16 24 58.4	4.483783	43.9	-2.3	150.3e	5	99.8	287.7	-3	16
2030 Jun 15	15 6 4.71	-16 18 32.5	4.523706	43.5	-2.3	145.1e	6	99.7	287.5	-3	17
2030 Jun 20	15 4 28.35	-16 13 5.6	4.569466	43.1	-2.3	139.9e	7	99.6	287.3	-3	17
2030 Jun 25	15 3 7.52	-16 8 43.7	4.620641	42.6	-2.2	134.8e	8	99.6	287.2	-3	17
2030 Jun 30	15 2 3.29	-16 5 32.0	4.676766	42.1	-2.2	129.8e	8	99.5	287.1	-3	17
2030 Jul 5	15 1 16.50	-16 3 34.0	4.737318	41.6	-2.2	124.8e	9	99.4	287.0	-3	17
2030 Jul 10	15 0 47.66	-16 2 52.0	4.801732	41.0	-2.1	120.0e	9	99.3	286.9	-3	17
2030 Jul 15	15 0 36.93	-16 3 26.6	4.869438	40.4	-2.1	115.2e	10	99.3	286.8	-3	17
2030 Jul 20	15 0 44.25	-16 5 17.3	4.939919	39.9	-2.1	110.4e	10	99.2	286.6	-3	17
2030 Jul 25	15 1 9.52	-16 8 23.1	5.012682	39.3	-2.0	105.8e	10	99.2	286.5	-3	17
2030 Jul 30	15 1 52.58	-16 12 42.2	5.087211	38.7	-2.0	101.2e	11	99.1	286.4	-3	17
2030 Aug 4	15 2 53.12	-16 18 12.0	5.162967	38.1	-2.0	96.6e	11	99.1	286.2	-3	17
2030 Aug 9	15 4 10.64	-16 24 48.9	5.239412	37.6	-1.9	92.2e	11	99.1	286.1	-3	17
2030 Aug 14	15 5 44.48	-16 32 28.7	5.316057	37.0	-1.9	87.8e	11	99.1	285.9	-3	17
2030 Aug 19	15 7 34.00	-16 41 6.8	5.392477	36.5	-1.9	83.4e	11	99.1	285.7	-3	16
2030 Aug 24	15 9 38.63	-16 50 39.1	5.468253	36.0	-1.9	79.2e	11	99.1	285.5	-3	16
2030 Aug 29	15 11 57.79	-17 1 0.7	5.542950	35.5	-1.8	74.9e	10	99.2	285.2	-3	16
2030 Sep 3	15 14 30.82	-17 12 6.8	5.616124	35.1	-1.8	70.7e	10	99.2	285.0	-3	16
2030 Sep 8	15 17 16.96	-17 23 52.0	5.687361	34.6	-1.8	66.6e	10	99.3	284.7	-3	16
2030 Sep 13	15 20 15.41	-17 36 10.9	5.756315	34.2	-1.8	62.4e	10	99.3	284.4	-3	15
2030 Sep 18	15 23 25.50	-17 48 58.6	5.822675	33.8	-1.7	58.3e	9	99.4	284.1	-3	15
2030 Sep 23	15 26 46.61	-18 2 10.2	5.886127	33.5	-1.7	54.3e	9	99.4	283.8	-3	15
2030 Sep 28	15 30 18.13	-18 15 40.8	5.946338	33.1	-1.7	50.3e	8	99.5	283.4	-3	14
2030 Oct 3	15 33 59.35	-18 29 25.4	6.002980	32.8	-1.7	46.2e	8	99.5	283.0	-3	14
2030 Oct 8	15 37 49.49	-18 43 19.0	6.055780	32.5	-1.7	42.3e	7	99.6	282.6	-3	14
2030 Oct 13	15 41 47.84	-18 57 17.1	6.104523	32.3	-1.6	38.3e	7	99.7	282.2	-3	13
2030 Oct 18	15 45 53.78	-19 11 15.2	6.149009	32.0	-1.6	34.3e	6	99.7	281.7	-3	13
2030 Oct 23	15 50 6.72	-19 25 9.4	6.189022	31.8	-1.6	30.4e	5	99.8	281.2	-3	13
2030 Oct 28	15 54 26.02	-19 38 55.4	6.224340	31.6	-1.6	26.4e	5	99.8	280.7	-3	12
2030 Nov 2	15 58 50.96	-19 52 29.4	6.254762	31.5	-1.6	22.5e	4	99.9	280.0	-3	12
2030 Nov 7	16 3 20.77	-20 5 47.6	6.280158	31.4	-1.6	18.6e	3	99.9	279.3	-3	11
2030 Nov 12	16 7 54.78	-20 18 46.6	6.300439	31.3	-1.6	14.7e	3	99.9	278.4	-3	11
2030 Nov 17	16 12 32.38	-20 31 23.4	6.315512	31.2	-1.6	10.7e	2	100.0	277.1	-3	10
2030 Nov 22	16 17 12.93	-20 43 35.1	6.325276	31.1	-1.6	6.8e	1	100.0	274.9	-3	10
2030 Nov 27	16 21 55.74	-20 55 19.2	6.329630	31.1	-1.6	2.9e	1	100.0	267.7	-3	10
2030 Dec 2	16 26 39.99	-21 6 33.1	6.328523	31.1	-1.6	1.2w	0	100.0	127.2	-3	9
2030 Dec 7	16 31 24.88	-21 17 14.8	6.321975	31.2	-1.6	5.1w	1	100.0	105.2	-3	9
2030 Dec 12	16 36 9.74	-21 27 22.6	6.310026	31.2	-1.6	9.0w	2	100.0	101.8	-3	8
2030 Dec 17	16 40 53.87	-21 36 55.3	6.292704	31.3	-1.6	13.0w	2	100.0	100.2	-3	8
2030 Dec 22	16 45 36.55	-21 45 51.5	6.270038	31.4	-1.6	17.0w	3	99.9	99.1	-3	7
2030 Dec 27	16 50 16.93	-21 54 10.7	6.242074	31.6	-1.6	21.0w	4	99.9	98.3	-3	7

Saturn
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
2030 Jan 1	3 4 43.51	14 56 37.7	8.488281	19.6	0.0	127.7e	5	99.8	252.2	-21	359
2030 Jan 6	3 4 7.38	14 55 33.2	8.556197	19.5	0.0	122.5e	5	99.8	252.5	-21	359
2030 Jan 11	3 3 42.02	14 55 16.0	8.628182	19.3	0.1	117.3e	5	99.8	252.7	-21	359
2030 Jan 16	3 3 27.72	14 55 46.6	8.703577	19.1	0.1	112.2e	6	99.8	253.0	-21	359
2030 Jan 21	3 3 24.59	14 57 5.2	8.781743	19.0	0.1	107.1e	6	99.7	253.2	-21	359
2030 Jan 26	3 3 32.67	14 59 11.1	8.862069	18.8	0.1	102.1e	6	99.7	253.4	-21	359
2030 Jan 31	3 3 51.95	15 2 3.6	8.943950	18.6	0.2	97.1e	6	99.7	253.7	-21	359
2030 Feb 5	3 4 22.36	15 5 41.5	9.026742	18.5	0.2	92.1e	6	99.7	253.9	-22	359
2030 Feb 10	3 5 3.69	15 10 2.9	9.109785	18.3	0.2	87.2e	6	99.7	254.1	-22	359
2030 Feb 15	3 5 55.61	15 15 5.4	9.192457	18.1	0.2	82.4e	6	99.7	254.4	-22	359
2030 Feb 20	3 6 57.72	15 20 46.3	9.274194	18.0	0.2	77.6e	6	99.7	254.6	-22	359
2030 Feb 25	3 8 9.61	15 27 3.2	9.354480	17.8	0.2	72.9e	6	99.7	254.9	-22	359

2030	Mar	2	3	9	30.91	15	33	53.2	9.432805	17.7	0.2	68.2e	6	99.7	255.2	-22	359
2030	Mar	7	3	11	1.18	15	41	13.4	9.508637	17.5	0.3	63.6e	6	99.8	255.5	-22	359
2030	Mar	12	3	12	39.88	15	49	0.6	9.581478	17.4	0.3	59.0e	5	99.8	255.8	-22	359
2030	Mar	17	3	14	26.46	15	57	11.3	9.650893	17.3	0.3	54.5e	5	99.8	256.2	-22	359
2030	Mar	22	3	16	20.33	16	5	42.5	9.716515	17.2	0.3	50.0e	5	99.8	256.5	-23	359
2030	Mar	27	3	18	20.98	16	14	31.0	9.778013	17.0	0.2	45.6e	4	99.8	257.0	-23	359
2030	Apr	1	3	20	27.93	16	23	33.8	9.835045	16.9	0.2	41.2e	4	99.9	257.4	-23	359
2030	Apr	6	3	22	40.61	16	32	47.9	9.887273	16.9	0.2	36.8e	4	99.9	258.0	-23	359
2030	Apr	11	3	24	58.42	16	42	10.2	9.934415	16.8	0.2	32.4e	3	99.9	258.6	-23	359
2030	Apr	16	3	27	20.75	16	51	37.5	9.976255	16.7	0.2	28.1e	3	99.9	259.3	-23	359
2030	Apr	21	3	29	47.05	17	1	7.3	10.012634	16.6	0.2	23.9e	3	100.0	260.2	-23	359
2030	Apr	26	3	32	16.81	17	10	37.0	10.043404	16.6	0.2	19.6e	2	100.0	261.4	-24	358
2030	May	1	3	34	49.51	17	20	4.1	10.068395	16.6	0.2	15.4e	2	100.0	263.2	-24	358
2030	May	6	3	37	24.59	17	29	26.1	10.087471	16.5	0.1	11.3e	1	100.0	266.0	-24	358
2030	May	11	3	40	1.42	17	38	40.7	10.100553	16.5	0.1	7.1e	1	100.0	271.8	-24	358
2030	May	16	3	42	39.45	17	47	45.7	10.107626	16.5	0.1	3.3e	0	100.0	291.2	-24	358
2030	May	21	3	45	18.15	17	56	39.3	10.108708	16.5	0.1	2.3w	0	100.0	25.3	-24	358
2030	May	26	3	47	57.03	18	5	19.6	10.103799	16.5	0.1	5.9w	1	100.0	59.3	-24	358
2030	May	31	3	50	35.55	18	13	45.1	10.092896	16.5	0.1	9.9w	1	100.0	67.1	-24	358
2030	Jun	5	3	53	13.12	18	21	53.9	10.076046	16.5	0.1	14.0w	2	100.0	70.6	-25	358
2030	Jun	10	3	55	49.16	18	29	44.6	10.053352	16.6	0.1	18.2w	2	100.0	72.5	-25	358
2030	Jun	15	3	58	23.09	18	37	16.0	10.024971	16.6	0.2	22.3w	2	100.0	73.9	-25	358
2030	Jun	20	4	0	54.42	18	44	27.0	9.991063	16.7	0.2	26.4w	3	99.9	74.9	-25	358
2030	Jun	25	4	3	22.64	18	51	16.6	9.951766	16.7	0.2	30.6w	3	99.9	75.7	-25	358
2030	Jun	30	4	5	47.17	18	57	43.8	9.907239	16.8	0.2	34.8w	4	99.9	76.4	-25	357
2030	Jul	5	4	8	7.39	19	3	47.7	9.857701	16.9	0.2	39.0w	4	99.9	77.0	-25	357
2030	Jul	10	4	10	22.71	19	9	27.6	9.803426	17.0	0.2	43.2w	4	99.9	77.5	-25	357
2030	Jul	15	4	12	32.58	19	14	43.0	9.744722	17.1	0.2	47.5w	5	99.8	77.9	-25	357
2030	Jul	20	4	14	36.51	19	19	33.5	9.681881	17.2	0.2	51.7w	5	99.8	78.3	-25	357
2030	Jul	25	4	16	33.95	19	23	58.6	9.615185	17.3	0.2	56.0w	5	99.8	78.7	-25	357
2030	Jul	30	4	18	24.28	19	27	58.0	9.544964	17.5	0.2	60.4w	6	99.8	79.1	-25	357
2030	Aug	4	4	20	6.91	19	31	31.3	9.471610	17.6	0.2	64.7w	6	99.7	79.4	-25	357
2030	Aug	9	4	21	41.29	19	34	38.6	9.395564	17.7	0.2	69.2w	6	99.7	79.7	-25	357
2030	Aug	14	4	23	6.95	19	37	19.7	9.317275	17.9	0.1	73.6w	6	99.7	80.0	-25	357
2030	Aug	19	4	24	23.44	19	39	34.7	9.237165	18.0	0.1	78.1w	6	99.7	80.3	-25	357
2030	Aug	24	4	25	30.25	19	41	23.5	9.155677	18.2	0.1	82.7w	6	99.7	80.6	-26	357
2030	Aug	29	4	26	26.90	19	42	46.2	9.073313	18.4	0.1	87.3w	6	99.7	80.8	-26	357
2030	Sep	3	4	27	12.94	19	43	43.1	8.990627	18.5	0.1	91.9w	6	99.7	81.0	-26	357
2030	Sep	8	4	27	48.07	19	44	14.2	8.908201	18.7	0.0	96.6w	6	99.7	81.3	-26	357
2030	Sep	13	4	28	12.09	19	44	20.1	8.826590	18.9	0.0	101.4w	6	99.7	81.5	-26	357
2030	Sep	18	4	28	24.80	19	44	0.9	8.746332	19.1	0.0	106.2w	6	99.7	81.7	-26	357
2030	Sep	23	4	28	26.04	19	43	17.2	8.667997	19.2	0.0	111.1w	6	99.7	81.9	-25	357
2030	Sep	28	4	28	15.75	19	42	9.5	8.592195	19.4	-0.1	116.0w	6	99.8	82.1	-25	357
2030	Oct	3	4	27	54.00	19	40	38.3	8.519568	19.6	-0.1	121.0w	5	99.8	82.3	-25	357
2030	Oct	8	4	27	21.10	19	38	44.7	8.450727	19.7	-0.1	126.1w	5	99.8	82.5	-25	357
2030	Oct	13	4	26	37.44	19	36	29.6	8.386221	19.9	-0.1	131.2w	5	99.8	82.7	-25	357
2030	Oct	18	4	25	43.48	19	33	54.2	8.326583	20.0	-0.2	136.3w	4	99.9	83.0	-25	357
2030	Oct	23	4	24	39.80	19	30	59.8	8.272354	20.1	-0.2	141.6w	4	99.9	83.4	-25	357
2030	Oct	28	4	23	27.13	19	27	48.2	8.224073	20.3	-0.2	146.8w	3	99.9	83.8	-25	357
2030	Nov	2	4	22	6.44	19	24	21.3	8.182242	20.4	-0.3	152.1w	3	99.9	84.5	-25	357
2030	Nov	7	4	20	38.86	19	20	41.7	8.147261	20.5	-0.3	157.5w	2	100.0	85.4	-25	357
2030	Nov	12	4	19	5.58	19	16	51.7	8.119448	20.5	-0.3	162.8w	2	100.0	87.0	-25	357
2030	Nov	17	4	17	27.81	19	12	54.3	8.099078	20.6	-0.4	168.2w	1	100.0	90.2	-25	357
2030	Nov	22	4	15	46.89	19	8	52.6	8.086392	20.6	-0.4	173.5w	1	100.0	98.6	-25	357
2030	Nov	27	4	14	4.25	19	4	50.1	8.081576	20.6	-0.4	177.8w	0	100.0	150.9	-25	357
2030	Dec	2	4	12	21.44	19	0	50.7	8.084707	20.6	-0.4	174.8e	1	100.0	236.0	-25	357
2030	Dec	7	4	10	39.98	18	56	58.0	8.095729	20.6	-0.4	169.6e	1	100.0	248.1	-25	357
2030	Dec	12	4	9	1.29	18	53	15.8	8.114512	20.5	-0.3	164.2e	2	100.0	252.0	-25	357
2030	Dec	17	4	7	26.71	18	49	48.0	8.140883	20.5	-0.3	158.7e	2	100.0	253.9	-25	357
2030	Dec	22	4	5	57.54	18	46	38.1	8.174618	20.4	-0.3	153.3e	3	99.9	255.0	-25	357
2030	Dec	27	4	4	35.07	18	43	49.9	8.215420	20.3	-0.2	147.9e	3	99.9	255.7	-25	358

Uranus
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

2030 Jan 1	4	55	24.83	22	38	34.8	18.324773	3.7	5.5	154.9e	1	100.0	263.7	82 335
2030 Jan 6	4	54	38.07	22	37	25.0	18.364019	3.7	5.6	149.7e	1	100.0	263.6	82 334
2030 Jan 11	4	53	54.68	22	36	19.6	18.410037	3.7	5.6	144.4e	2	100.0	263.6	82 333
2030 Jan 16	4	53	15.11	22	35	19.5	18.462378	3.7	5.6	139.2e	2	100.0	263.5	82 332
2030 Jan 21	4	52	39.79	22	34	25.4	18.520564	3.7	5.6	133.9e	2	100.0	263.4	82 331
2030 Jan 26	4	52	9.05	22	33	38.3	18.584102	3.7	5.6	128.7e	2	100.0	263.4	81 330
2030 Jan 31	4	51	43.22	22	32	58.8	18.652486	3.7	5.6	123.5e	2	100.0	263.3	81 329
2030 Feb 5	4	51	22.62	22	32	27.6	18.725142	3.7	5.6	118.4e	3	99.9	263.3	81 329
2030 Feb 10	4	51	7.48	22	32	5.0	18.801424	3.6	5.6	113.3e	3	99.9	263.3	81 329
2030 Feb 15	4	50	57.93	22	31	51.5	18.880669	3.6	5.6	108.2e	3	99.9	263.2	81 328
2030 Feb 20	4	50	54.07	22	31	47.3	18.962233	3.6	5.6	103.1e	3	99.9	263.2	81 328
2030 Feb 25	4	50	55.92	22	31	52.6	19.045501	3.6	5.6	98.1e	3	99.9	263.2	81 328
2030 Mar 2	4	51	3.53	22	32	7.3	19.129853	3.6	5.6	93.1e	3	99.9	263.2	81 329
2030 Mar 7	4	51	16.87	22	32	31.3	19.214622	3.6	5.7	88.1e	3	99.9	263.3	81 329
2030 Mar 12	4	51	35.88	22	33	4.4	19.299131	3.6	5.7	83.2e	3	99.9	263.3	81 329
2030 Mar 17	4	52	0.39	22	33	46.4	19.382742	3.5	5.7	78.3e	3	99.9	263.3	81 330
2030 Mar 22	4	52	30.23	22	34	36.7	19.464874	3.5	5.7	73.5e	3	99.9	263.4	81 331
2030 Mar 27	4	53	5.21	22	35	34.9	19.544989	3.5	5.7	68.6e	3	99.9	263.4	82 332
2030 Apr 1	4	53	45.15	22	36	40.4	19.622540	3.5	5.7	63.9e	3	99.9	263.5	82 333
2030 Apr 6	4	54	29.82	22	37	52.7	19.696966	3.5	5.7	59.1e	3	100.0	263.5	82 334
2030 Apr 11	4	55	18.93	22	39	11.0	19.767747	3.5	5.7	54.4e	2	100.0	263.6	82 335
2030 Apr 16	4	56	12.16	22	40	34.7	19.834426	3.5	5.7	49.7e	2	100.0	263.7	82 337
2030 Apr 21	4	57	9.21	22	42	3.1	19.896617	3.4	5.7	45.0e	2	100.0	263.8	82 338
2030 Apr 26	4	58	9.78	22	43	35.4	19.953965	3.4	5.7	40.4e	2	100.0	263.9	82 340
2030 May 1	4	59	13.58	22	45	10.9	20.006097	3.4	5.7	35.8e	2	100.0	263.9	82 342
2030 May 6	5	0	20.25	22	46	48.9	20.052664	3.4	5.7	31.2e	2	100.0	264.0	82 343
2030 May 11	5	1	29.43	22	48	28.7	20.093380	3.4	5.7	26.6e	1	100.0	264.1	82 345
2030 May 16	5	2	40.75	22	50	9.7	20.128030	3.4	5.7	22.0e	1	100.0	264.2	82 348
2030 May 21	5	3	53.86	22	51	51.0	20.156461	3.4	5.8	17.5e	1	100.0	264.3	82 350
2030 May 26	5	5	8.42	22	53	32.2	20.178520	3.4	5.8	13.0e	1	100.0	264.3	82 352
2030 May 31	5	6	24.10	22	55	12.7	20.194049	3.4	5.8	8.5e	0	100.0	264.3	82 354
2030 Jun 5	5	7	40.50	22	56	51.8	20.202940	3.4	5.8	4.0e	0	100.0	264.0	82 356
2030 Jun 10	5	8	57.25	22	58	29.1	20.205154	3.4	5.8	0.5w	0	100.0	91.5	82 359
2030 Jun 15	5	10	13.96	23	0	4.1	20.200721	3.4	5.8	5.0w	0	100.0	85.8	82 1
2030 Jun 20	5	11	30.29	23	1	36.5	20.189702	3.4	5.8	9.5w	0	100.0	85.6	82 3
2030 Jun 25	5	12	45.92	23	3	5.7	20.172142	3.4	5.8	13.9w	1	100.0	85.6	82 5
2030 Jun 30	5	14	0.47	23	4	31.6	20.148109	3.4	5.7	18.4w	1	100.0	85.6	82 7
2030 Jul 5	5	15	13.57	23	5	53.7	20.117730	3.4	5.7	22.9w	1	100.0	85.7	82 9
2030 Jul 10	5	16	24.85	23	7	12.0	20.081203	3.4	5.7	27.4w	1	100.0	85.8	82 11
2030 Jul 15	5	17	33.96	23	8	26.2	20.038782	3.4	5.7	31.9w	2	100.0	85.9	82 13
2030 Jul 20	5	18	40.60	23	9	36.0	19.990716	3.4	5.7	36.4w	2	100.0	86.0	82 15
2030 Jul 25	5	19	44.44	23	10	41.5	19.937246	3.4	5.7	41.0w	2	100.0	86.1	82 17
2030 Jul 30	5	20	45.13	23	11	42.5	19.878661	3.4	5.7	45.5w	2	100.0	86.2	81 18
2030 Aug 4	5	21	42.35	23	12	38.9	19.815312	3.5	5.7	50.1w	2	100.0	86.3	81 20
2030 Aug 9	5	22	35.77	23	13	30.8	19.747617	3.5	5.7	54.6w	2	100.0	86.3	81 21
2030 Aug 14	5	23	25.12	23	14	18.0	19.676014	3.5	5.7	59.3w	3	99.9	86.4	81 22
2030 Aug 19	5	24	10.17	23	15	0.7	19.600922	3.5	5.7	63.9w	3	99.9	86.5	81 23
2030 Aug 24	5	24	50.63	23	15	38.7	19.522772	3.5	5.7	68.5w	3	99.9	86.5	81 24
2030 Aug 29	5	25	26.25	23	16	12.2	19.442050	3.5	5.7	73.2w	3	99.9	86.6	81 25
2030 Sep 3	5	25	56.80	23	16	41.1	19.359305	3.5	5.7	78.0w	3	99.9	86.6	81 26
2030 Sep 8	5	26	22.09	23	17	5.6	19.275123	3.6	5.7	82.7w	3	99.9	86.7	81 26
2030 Sep 13	5	26	42.00	23	17	25.5	19.190073	3.6	5.6	87.5w	3	99.9	86.7	81 27
2030 Sep 18	5	26	56.41	23	17	40.9	19.104704	3.6	5.6	92.3w	3	99.9	86.7	81 27
2030 Sep 23	5	27	5.21	23	17	51.9	19.019587	3.6	5.6	97.1w	3	99.9	86.7	81 27
2030 Sep 28	5	27	8.32	23	17	58.5	18.935343	3.6	5.6	102.0w	3	99.9	86.7	81 27
2030 Oct 3	5	27	5.72	23	18	0.6	18.852628	3.6	5.6	107.0w	3	99.9	86.7	81 27
2030 Oct 8	5	26	57.48	23	17	58.2	18.772089	3.7	5.6	111.9w	3	99.9	86.7	81 27
2030 Oct 13	5	26	43.71	23	17	51.4	18.694319	3.7	5.6	116.9w	3	99.9	86.7	81 27
2030 Oct 18	5	26	24.53	23	17	40.2	18.619888	3.7	5.6	121.9w	3	100.0	86.6	81 26
2030 Oct 23	5	26	0.11	23	17	24.5	18.549383	3.7	5.6	127.0w	2	100.0	86.6	81 26
2030 Oct 28	5	25	30.66	23	17	4.5	18.483405	3.7	5.6	132.1w	2	100.0	86.5	81 25
2030 Nov 2	5	24	56.48	23	16	40.1	18.422544	3.7	5.6	137.2w	2	100.0	86.4	81 24
2030 Nov 7	5	24	17.97	23	16	11.5	18.367313	3.7	5.5	142.4w	2	100.0	86.3	81 23
2030 Nov 12	5	23	35.53	23	15	38.8	18.318149	3.7	5.5	147.6w	2	100.0	86.3	81 22
2030 Nov 17	5	22	49.58	23	15	2.1	18.275459	3.8	5.5	152.8w	1	100.0	86.1	81 21
2030 Nov 22	5	22	0.59	23	14	21.8	18.239634	3.8	5.5	158.0w	1	100.0	86.0	81 20
2030 Nov 27	5	21	9.07	23	13	38.1	18.211038	3.8	5.5	163.3w	1	100.0	85.8	81 19

2030	Dec	2	5	20	15.64	23	12	51.4	18.189956	3.8	5.5	168.5w	1	100.0	85.6	82	18
2030	Dec	7	5	19	20.91	23	12	2.1	18.176554	3.8	5.5	173.8w	0	100.0	85.1	82	16
2030	Dec	12	5	18	25.47	23	11	10.7	18.170925	3.8	5.5	179.1w	0	100.0	79.9	82	15
2030	Dec	17	5	17	29.93	23	10	17.9	18.173120	3.8	5.5	175.6e	0	100.0	267.0	82	13
2030	Dec	22	5	16	34.89	23	9	24.3	18.183151	3.8	5.5	170.3e	0	100.0	266.3	82	12
2030	Dec	27	5	15	40.99	23	8	30.6	18.200971	3.8	5.5	165.0e	1	100.0	266.0	82	10

Neptune
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
2030	Jan	1	0	31	35.58	1	46	34.0	29.877825	2.4	7.9	87.8e	2	100.0	246.8	-17	315
2030	Jan	6	0	31	44.95	1	47	49.3	29.964375	2.4	7.9	82.7e	2	100.0	247.0	-17	315
2030	Jan	11	0	31	57.47	1	49	24.6	30.049953	2.4	7.9	77.7e	2	100.0	247.1	-17	315
2030	Jan	16	0	32	13.06	1	51	19.1	30.133898	2.4	7.9	72.7e	2	100.0	247.3	-17	315
2030	Jan	21	0	32	31.62	1	53	32.2	30.215601	2.4	7.9	67.7e	2	100.0	247.4	-17	315
2030	Jan	26	0	32	53.03	1	56	3.0	30.294497	2.4	7.9	62.7e	2	100.0	247.6	-17	315
2030	Jan	31	0	33	17.17	1	58	50.6	30.370022	2.4	7.9	57.7e	2	100.0	247.8	-17	315
2030	Feb	5	0	33	43.91	2	1	54.0	30.441599	2.4	7.9	52.8e	2	100.0	247.9	-17	315
2030	Feb	10	0	34	13.07	2	5	11.9	30.508685	2.4	7.9	47.8e	1	100.0	248.2	-17	314
2030	Feb	15	0	34	44.44	2	8	43.0	30.570816	2.4	7.9	42.9e	1	100.0	248.4	-16	314
2030	Feb	20	0	35	17.85	2	12	25.9	30.627598	2.4	7.9	38.0e	1	100.0	248.7	-16	314
2030	Feb	25	0	35	53.08	2	16	19.3	30.678680	2.4	7.9	33.2e	1	100.0	249.1	-16	314
2030	Mar	2	0	36	29.94	2	20	22.0	30.723710	2.4	7.9	28.3e	1	100.0	249.6	-16	314
2030	Mar	7	0	37	8.22	2	24	32.3	30.762358	2.4	7.9	23.5e	1	100.0	250.3	-16	314
2030	Mar	12	0	37	47.67	2	28	48.8	30.794368	2.4	7.9	18.7e	1	100.0	251.2	-16	314
2030	Mar	17	0	38	28.05	2	33	9.7	30.819569	2.4	7.9	13.9e	0	100.0	252.8	-16	314
2030	Mar	22	0	39	9.14	2	37	33.7	30.837855	2.4	8.0	9.2e	0	100.0	256.0	-16	314
2030	Mar	27	0	39	50.71	2	41	59.4	30.849145	2.4	8.0	4.5e	0	100.0	265.8	-16	314
2030	Apr	1	0	40	32.54	2	46	25.2	30.853356	2.4	8.0	1.5e	0	100.0	355.5	-16	314
2030	Apr	6	0	41	14.38	2	50	49.6	30.850458	2.4	8.0	5.4w	0	100.0	51.4	-16	314
2030	Apr	11	0	41	56.00	2	55	11.0	30.840506	2.4	8.0	10.1w	0	100.0	58.7	-16	314
2030	Apr	16	0	42	37.15	2	59	28.0	30.823630	2.4	7.9	14.7w	0	100.0	61.4	-16	314
2030	Apr	21	0	43	17.63	3	3	39.3	30.799998	2.4	7.9	19.4w	1	100.0	62.8	-16	314
2030	Apr	26	0	43	57.22	3	7	43.5	30.769778	2.4	7.9	24.1w	1	100.0	63.7	-16	314
2030	May	1	0	44	35.72	3	11	39.4	30.733149	2.4	7.9	28.8w	1	100.0	64.3	-15	314
2030	May	6	0	45	12.91	3	15	25.5	30.690366	2.4	7.9	33.5w	1	100.0	64.8	-15	314
2030	May	11	0	45	48.56	3	19	0.7	30.641751	2.4	7.9	38.1w	1	100.0	65.2	-15	314
2030	May	16	0	46	22.50	3	22	23.8	30.587679	2.4	7.9	42.8w	1	100.0	65.5	-15	314
2030	May	21	0	46	54.56	3	25	33.9	30.528533	2.4	7.9	47.5w	1	100.0	65.7	-15	314
2030	May	26	0	47	24.57	3	28	29.9	30.464676	2.4	7.9	52.2w	2	100.0	65.9	-15	314
2030	May	31	0	47	52.36	3	31	11.0	30.396510	2.4	7.9	56.8w	2	100.0	66.1	-15	314
2030	Jun	5	0	48	17.78	3	33	36.0	30.324506	2.4	7.9	61.5w	2	100.0	66.3	-15	314
2030	Jun	10	0	48	40.67	3	35	44.3	30.249182	2.4	7.9	66.2w	2	100.0	66.5	-15	314
2030	Jun	15	0	49	0.93	3	37	35.4	30.171075	2.4	7.9	70.9w	2	100.0	66.6	-15	314
2030	Jun	20	0	49	18.47	3	39	8.7	30.090696	2.4	7.9	75.6w	2	100.0	66.7	-15	314
2030	Jun	25	0	49	33.19	3	40	23.6	30.008547	2.4	7.9	80.3w	2	100.0	66.9	-15	314
2030	Jun	30	0	49	45.01	3	41	19.9	29.925178	2.4	7.9	85.0w	2	100.0	67.0	-15	314
2030	Jul	5	0	49	53.84	3	41	57.1	29.841186	2.5	7.9	89.7w	2	100.0	67.1	-15	314
2030	Jul	10	0	49	59.67	3	42	15.3	29.757187	2.5	7.9	94.5w	2	100.0	67.3	-15	314
2030	Jul	15	0	50	2.48	3	42	14.4	29.673774	2.5	7.9	99.2w	2	100.0	67.4	-15	314
2030	Jul	20	0	50	2.29	3	41	54.7	29.591495	2.5	7.9	104.0w	2	100.0	67.5	-15	314
2030	Jul	25	0	49	59.10	3	41	16.3	29.510904	2.5	7.9	108.8w	2	100.0	67.7	-15	314
2030	Jul	30	0	49	52.95	3	40	19.6	29.432593	2.5	7.8	113.6w	2	100.0	67.8	-15	314
2030	Aug	4	0	49	43.89	3	39	5.1	29.357167	2.5	7.8	118.4w	2	100.0	68.0	-15	314
2030	Aug	9	0	49	32.03	3	37	33.5	29.285208	2.5	7.8	123.2w	2	100.0	68.2	-15	314
2030	Aug	14	0	49	17.50	3	35	45.7	29.217235	2.5	7.8	128.1w	2	100.0	68.3	-15	314
2030	Aug	19	0	49	0.42	3	33	42.8	29.153721	2.5	7.8	133.0w	1	100.0	68.6	-15	314
2030	Aug	24	0	48	40.95	3	31	25.5	29.095149	2.5	7.8	137.9w	1	100.0	68.8	-15	314
2030	Aug	29	0	48	19.24	3	28	55.2	29.042007	2.5	7.8	142.8w	1	100.0	69.2	-15	314
2030	Sep	3	0	47	55.50	3	26	13.2	28.994755	2.5	7.8	147.7w	1	100.0	69.6	-15	314
2030	Sep	8	0	47	29.97	3	23	21.1	28.953782	2.5	7.8	152.7w	1	100.0	70.1	-15	314
2030	Sep	13	0	47	2.90	3	20	20.5	28.919390	2.5	7.8	157.7w	1	100.0	70.9	-15	314
2030	Sep	18	0	46	34.53	3	17	13.0	28.891849	2.5	7.8	162.6w	1	100.0	72.1	-15	314
2030	Sep	23	0	46	5.11	3	14	0.2	28.871417	2.5	7.8	167.6w	0	100.0	74.3	-15	314
2030	Sep	28	0	45	34.93	3	10	44.1	28.858322	2.5	7.8	172.6w	0	100.0	79.3	-15	314

2030 Oct	3	0 45	4.28	3	7 26.6	28.852724	2.5	7.8	177.3w	0	100.0	103.1	-15	314
2030 Oct	8	0 44	33.49	3	4 9.6	28.854674	2.5	7.8	176.7e	0	100.0	218.4	-15	314
2030 Oct	13	0 44	2.85	3	0 55.1	28.864147	2.5	7.8	171.9e	0	100.0	235.9	-15	314
2030 Oct	18	0 43	32.65	2	57 44.9	28.881097	2.5	7.8	166.8e	0	100.0	240.2	-15	314
2030 Oct	23	0 43	3.18	2	54 40.8	28.905445	2.5	7.8	161.8e	1	100.0	242.2	-16	314
2030 Oct	28	0 42	34.75	2	51 44.7	28.937058	2.5	7.8	156.7e	1	100.0	243.3	-16	314
2030 Nov	2	0 42	7.65	2	48 58.6	28.975706	2.5	7.8	151.6e	1	100.0	244.1	-16	314
2030 Nov	7	0 41	42.18	2	46 24.2	29.021056	2.5	7.8	146.4e	1	100.0	244.6	-16	314
2030 Nov	12	0 41	18.58	2	44 2.8	29.072742	2.5	7.8	141.3e	1	100.0	245.0	-16	314
2030 Nov	17	0 40	57.07	2	41 56.0	29.130382	2.5	7.8	136.2e	1	100.0	245.3	-16	314
2030 Nov	22	0 40	37.88	2	40 5.1	29.193562	2.5	7.8	131.1e	1	100.0	245.6	-16	314
2030 Nov	27	0 40	21.22	2	38 31.4	29.261807	2.5	7.8	125.9e	2	100.0	245.8	-16	314
2030 Dec	2	0 40	7.30	2	37 15.9	29.334550	2.5	7.8	120.8e	2	100.0	246.0	-16	314
2030 Dec	7	0 39	56.24	2	36 19.4	29.411178	2.5	7.8	115.7e	2	100.0	246.2	-16	314
2030 Dec	12	0 39	48.17	2	35 42.5	29.491087	2.5	7.9	110.6e	2	100.0	246.3	-16	314
2030 Dec	17	0 39	43.17	2	35 25.8	29.573680	2.5	7.9	105.5e	2	100.0	246.5	-16	314
2030 Dec	22	0 39	41.32	2	35 29.5	29.658339	2.5	7.9	100.4e	2	100.0	246.6	-16	314
2030 Dec	27	0 39	42.69	2	35 53.9	29.744398	2.5	7.9	95.3e	2	100.0	246.8	-16	314