

Saturn_2011.txt
 EPHEMERIS FOR PHYSICAL OBSERVATIONS OF SATURN (0 hr U.T.) - 2011
 (Compiled by: Jeffrey D. Beish, A.L.P.O.)

Date yyyy-mmm-dd	Elong o	Phase o	Vis Mag MV	Diameter('')				B o	B' o	CMI o	CMII o	CMIII o	RA hh:mm	Dec o
				Globe		Rings								
				Eq	Po	Maj	Min							
2011-Jan-01	083.4w	05.8	0.8	17.1	15.3	38.9	0.0	10.0	07.5	350.7	064.8	193.5	13:05	-04.4
2011-Jan-02	084.4w	05.9	0.8	17.2	15.3	38.9	0.0	10.1	07.5	115.0	156.9	284.3	13:05	-04.4
2011-Jan-03	085.4w	05.9	0.8	17.2	15.3	39.0	0.0	10.1	07.5	239.4	248.9	015.2	13:05	-04.4
2011-Jan-04	086.4w	05.9	0.8	17.2	15.4	39.1	0.0	10.1	07.5	003.7	341.0	106.0	13:06	-04.4
2011-Jan-05	087.3w	05.9	0.8	17.2	15.4	39.1	0.0	10.1	07.6	128.1	073.0	196.8	13:06	-04.4
2011-Jan-06	088.3w	05.9	0.8	17.3	15.4	39.2	0.0	10.1	07.6	252.4	165.0	287.7	13:06	-04.4
2011-Jan-07	089.3w	05.9	0.8	17.3	15.4	39.3	0.0	10.1	07.6	016.7	257.1	018.5	13:06	-04.4
2011-Jan-08	090.3w	05.9	0.8	17.3	15.5	39.3	0.0	10.1	07.6	141.1	349.1	109.4	13:06	-04.4
2011-Jan-09	091.3w	05.9	0.8	17.4	15.5	39.4	0.0	10.1	07.6	265.5	081.2	200.2	13:06	-04.4
2011-Jan-10	092.3w	05.9	0.8	17.4	15.5	39.5	0.0	10.1	07.6	029.8	173.2	291.0	13:06	-04.5
2011-Jan-11	093.2w	05.9	0.8	17.4	15.6	39.5	0.0	10.2	07.6	154.2	265.3	021.9	13:06	-04.5
2011-Jan-12	094.2w	05.9	0.8	17.5	15.6	39.6	0.0	10.2	07.7	278.5	357.3	112.7	13:07	-04.5
2011-Jan-13	095.2w	05.9	0.7	17.5	15.6	39.7	0.0	10.2	07.7	042.9	089.4	203.6	13:07	-04.5
2011-Jan-14	096.2w	05.8	0.7	17.5	15.6	39.7	0.0	10.2	07.7	167.2	181.4	294.4	13:07	-04.5
2011-Jan-15	097.2w	05.8	0.7	17.6	15.7	39.8	0.0	10.2	07.7	291.6	273.5	025.3	13:07	-04.5
2011-Jan-16	098.2w	05.8	0.7	17.6	15.7	39.9	0.0	10.2	07.7	055.9	005.5	116.1	13:07	-04.5
2011-Jan-17	099.2w	05.8	0.7	17.6	15.7	40.0	0.0	10.2	07.7	180.3	097.6	207.0	13:07	-04.5
2011-Jan-18	100.2w	05.8	0.7	17.6	15.7	40.0	0.0	10.2	07.7	304.7	189.7	297.8	13:07	-04.5
2011-Jan-19	101.2w	05.8	0.7	17.7	15.8	40.1	0.0	10.2	07.8	069.0	281.7	028.7	13:07	-04.5
2011-Jan-20	102.2w	05.7	0.7	17.7	15.8	40.2	0.0	10.2	07.8	193.4	013.8	119.6	13:07	-04.5
2011-Jan-21	103.2w	05.7	0.7	17.7	15.8	40.2	0.0	10.2	07.8	317.8	105.9	210.4	13:07	-04.5
2011-Jan-22	104.2w	05.7	0.7	17.8	15.9	40.3	0.0	10.2	07.8	082.1	197.9	301.3	13:07	-04.5
2011-Jan-23	105.3w	05.7	0.7	17.8	15.9	40.4	0.0	10.2	07.8	206.5	290.0	032.1	13:07	-04.5
2011-Jan-24	106.3w	05.6	0.7	17.8	15.9	40.4	0.0	10.2	07.8	330.9	022.1	123.0	13:07	-04.5
2011-Jan-25	107.3w	05.6	0.7	17.9	15.9	40.5	0.0	10.2	07.8	095.3	114.1	213.9	13:07	-04.5
2011-Jan-26	108.3w	05.6	0.7	17.9	16.0	40.6	0.0	10.2	07.9	219.6	206.2	304.7	13:07	-04.5
2011-Jan-27	109.3w	05.6	0.7	17.9	16.0	40.7	0.0	10.2	07.9	344.0	298.3	035.6	13:07	-04.5
2011-Jan-28	110.3w	05.5	0.7	17.9	16.0	40.7	0.0	10.2	07.9	108.4	030.3	126.5	13:07	-04.5
2011-Jan-29	111.3w	05.5	0.7	18.0	16.0	40.8	0.0	10.2	07.9	232.8	122.4	217.3	13:07	-04.5
2011-Jan-30	112.4w	05.4	0.7	18.0	16.1	40.9	0.0	10.2	07.9	357.1	214.5	308.2	13:07	-04.5
2011-Jan-31	113.4w	05.4	0.7	18.0	16.1	40.9	0.0	10.2	07.9	121.5	306.6	039.1	13:07	-04.4
2011-Feb-01	114.4w	05.4	0.7	18.1	16.1	41.0	0.0	10.1	07.9	245.9	038.6	129.9	13:07	-04.4
2011-Feb-02	115.4w	05.3	0.7	18.1	16.1	41.1	0.0	10.1	08.0	010.3	130.7	220.8	13:07	-04.4
2011-Feb-03	116.5w	05.3	0.6	18.1	16.2	41.1	0.0	10.1	08.0	134.7	222.8	311.7	13:07	-04.4
2011-Feb-04	117.5w	05.2	0.6	18.2	16.2	41.2	0.0	10.1	08.0	259.0	314.9	042.6	13:07	-04.4
2011-Feb-05	118.5w	05.2	0.6	18.2	16.2	41.3	0.0	10.1	08.0	023.4	047.0	133.4	13:07	-04.4
2011-Feb-06	119.5w	05.1	0.6	18.2	16.3	41.3	0.0	10.1	08.0	147.8	139.1	224.3	13:07	-04.4
2011-Feb-07	120.6w	05.1	0.6	18.2	16.3	41.4	0.0	10.1	08.0	272.2	231.1	315.2	13:07	-04.4
2011-Feb-08	121.6w	05.0	0.6	18.3	16.3	41.5	0.0	10.1	08.0	036.6	323.2	046.1	13:07	-04.4
2011-Feb-09	122.6w	05.0	0.6	18.3	16.3	41.5	0.0	10.1	08.1	161.0	055.3	136.9	13:07	-04.4
2011-Feb-10	123.7w	04.9	0.6	18.3	16.4	41.6	0.0	10.0	08.1	285.4	147.4	227.8	13:07	-04.3

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2011-Feb-11	124.7w	04.8	0.6	18.4	16.4	41.7	0.0	10.0	08.1	049.7	239.5	318.7	13:07	-04.3
2011-Feb-12	125.8w	04.8	0.6	18.4	16.4	41.7	0.0	10.0	08.1	174.1	331.6	049.6	13:07	-04.3
2011-Feb-13	126.8w	04.7	0.6	18.4	16.4	41.8	0.0	10.0	08.1	298.5	063.7	140.5	13:06	-04.3
2011-Feb-14	127.8w	04.7	0.6	18.4	16.5	41.8	0.0	10.0	08.1	062.9	155.7	231.3	13:06	-04.3
2011-Feb-15	128.9w	04.6	0.6	18.5	16.5	41.9	0.0	10.0	08.1	187.3	247.8	322.2	13:06	-04.3
2011-Feb-16	129.9w	04.5	0.6	18.5	16.5	42.0	0.0	09.9	08.2	311.7	339.9	053.1	13:06	-04.2
2011-Feb-17	131.0w	04.5	0.6	18.5	16.5	42.0	0.0	09.9	08.2	076.1	072.0	144.0	13:06	-04.2
2011-Feb-18	132.0w	04.4	0.6	18.5	16.5	42.1	0.0	09.9	08.2	200.5	164.1	234.9	13:06	-04.2
2011-Feb-19	133.1w	04.3	0.6	18.6	16.6	42.1	0.0	09.9	08.2	324.9	256.2	325.8	13:06	-04.2
2011-Feb-20	134.1w	04.2	0.6	18.6	16.6	42.2	0.0	09.9	08.2	089.3	348.3	056.7	13:06	-04.2
2011-Feb-21	135.2w	04.2	0.6	18.6	16.6	42.2	0.0	09.8	08.2	213.7	080.4	147.5	13:05	-04.2
2011-Feb-22	136.2w	04.1	0.5	18.6	16.6	42.3	0.0	09.8	08.2	338.1	172.5	238.4	13:05	-04.1
2011-Feb-23	137.3w	04.0	0.5	18.7	16.7	42.4	0.0	09.8	08.3	102.5	264.6	329.3	13:05	-04.1
2011-Feb-24	138.3w	03.9	0.5	18.7	16.7	42.4	0.0	09.8	08.3	226.9	356.7	060.2	13:05	-04.1
2011-Feb-25	139.4w	03.8	0.5	18.7	16.7	42.5	0.0	09.7	08.3	351.3	088.8	151.1	13:05	-04.1
2011-Feb-26	140.4w	03.8	0.5	18.7	16.7	42.5	0.0	09.7	08.3	115.7	180.8	242.0	13:05	-04.0
2011-Feb-27	141.5w	03.7	0.5	18.8	16.7	42.6	0.0	09.7	08.3	240.1	272.9	332.9	13:04	-04.0
2011-Feb-28	142.5w	03.6	0.5	18.8	16.8	42.6	0.0	09.7	08.3	004.4	005.0	063.8	13:04	-04.0
2011-Mar-01	143.6w	03.5	0.5	18.8	16.8	42.7	0.0	09.6	08.3	128.8	097.1	154.6	13:04	-04.0
2011-Mar-02	144.6w	03.4	0.5	18.8	16.8	42.7	0.0	09.6	08.4	253.2	189.2	245.5	13:04	-04.0
2011-Mar-03	145.7w	03.3	0.5	18.8	16.8	42.8	0.0	09.6	08.4	017.6	281.3	336.4	13:04	-03.9
2011-Mar-04	146.7w	03.2	0.5	18.9	16.8	42.8	0.0	09.6	08.4	142.0	013.4	067.3	13:03	-03.9
2011-Mar-05	147.8w	03.1	0.5	18.9	16.8	42.8	0.0	09.5	08.4	266.4	105.5	158.2	13:03	-03.9
2011-Mar-06	148.9w	03.1	0.5	18.9	16.9	42.9	0.0	09.5	08.4	030.8	197.6	249.1	13:03	-03.9
2011-Mar-07	149.9w	03.0	0.5	18.9	16.9	42.9	0.0	09.5	08.4	155.2	289.7	340.0	13:03	-03.8
2011-Mar-08	151.0w	02.9	0.5	18.9	16.9	43.0	0.0	09.4	08.4	279.6	021.8	070.9	13:03	-03.8
2011-Mar-09	152.0w	02.8	0.5	19.0	16.9	43.0	0.0	09.4	08.5	044.0	113.9	161.8	13:02	-03.8
2011-Mar-10	153.1w	02.7	0.5	19.0	16.9	43.0	0.0	09.4	08.5	168.4	206.0	252.6	13:02	-03.7
2011-Mar-11	154.1w	02.6	0.5	19.0	16.9	43.1	0.0	09.4	08.5	292.8	298.1	343.5	13:02	-03.7
2011-Mar-12	155.2w	02.5	0.5	19.0	17.0	43.1	0.0	09.3	08.5	057.2	030.2	074.4	13:02	-03.7
2011-Mar-13	156.3w	02.4	0.5	19.0	17.0	43.1	0.0	09.3	08.5	181.6	122.3	165.3	13:01	-03.7
2011-Mar-14	157.3w	02.3	0.4	19.0	17.0	43.2	0.0	09.3	08.5	306.0	214.4	256.2	13:01	-03.6
2011-Mar-15	158.4w	02.2	0.4	19.0	17.0	43.2	0.0	09.2	08.5	070.4	306.4	347.1	13:01	-03.6
2011-Mar-16	159.4w	02.1	0.4	19.1	17.0	43.2	0.0	09.2	08.5	194.8	038.5	078.0	13:01	-03.6
2011-Mar-17	160.5w	02.0	0.4	19.1	17.0	43.3	0.0	09.2	08.6	319.2	130.6	168.8	13:00	-03.5
2011-Mar-18	161.5w	01.9	0.4	19.1	17.0	43.3	0.0	09.1	08.6	083.5	222.7	259.7	13:00	-03.5
2011-Mar-19	162.6w	01.8	0.4	19.1	17.0	43.3	0.0	09.1	08.6	207.9	314.8	350.6	13:00	-03.5
2011-Mar-20	163.6w	01.7	0.4	19.1	17.0	43.3	0.0	09.1	08.6	332.3	046.9	081.5	13:00	-03.5
2011-Mar-21	164.7w	01.6	0.4	19.1	17.1	43.4	0.0	09.0	08.6	096.7	139.0	172.4	12:59	-03.4
2011-Mar-22	165.7w	01.5	0.4	19.1	17.1	43.4	0.0	09.0	08.6	221.1	231.0	263.2	12:59	-03.4
2011-Mar-23	166.8w	01.4	0.4	19.1	17.1	43.4	0.0	09.0	08.6	345.5	323.1	354.1	12:59	-03.4
2011-Mar-24	167.8w	01.3	0.4	19.1	17.1	43.4	0.0	08.9	08.7	109.9	055.2	085.0	12:59	-03.3
2011-Mar-25	168.9w	01.1	0.4	19.1	17.1	43.4	0.0	08.9	08.7	234.2	147.3	175.9	12:58	-03.3
2011-Mar-26	169.9w	01.0	0.4	19.2	17.1	43.5	0.0	08.9	08.7	358.6	239.4	266.7	12:58	-03.3
2011-Mar-27	170.9w	00.9	0.4	19.2	17.1	43.5	0.0	08.8	08.7	123.0	331.5	357.6	12:58	-03.3
2011-Mar-28	171.9w	00.8	0.4	19.2	17.1	43.5	0.0	08.8	08.7	247.4	063.5	088.5	12:57	-03.2
2011-Mar-29	172.9w	00.7	0.4	19.2	17.1	43.5	0.0	08.8	08.7	011.8	155.6	179.4	12:57	-03.2

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2011-Mar-30	173.9W	00.6	0.4	19.2	17.1	43.5	0.0	08.7	08.7	136.1	247.7	270.2	12:57	-03.2
2011-Mar-31	174.8W	00.5	0.4	19.2	17.1	43.5	0.0	08.7	08.8	260.5	339.8	001.1	12:57	-03.1
2011-Apr-01	175.7W	00.4	0.4	19.2	17.1	43.5	0.0	08.7	08.8	024.9	071.9	092.0	12:56	-03.1
2011-Apr-02	176.4W	00.4	0.4	19.2	17.1	43.5	0.0	08.6	08.8	149.3	163.9	182.8	12:56	-03.1
2011-Apr-03	177.0W	00.3	0.4	19.2	17.1	43.5	0.0	08.6	08.8	273.6	256.0	273.7	12:56	-03.0
2011-Apr-04	177.3W	00.3	0.4	19.2	17.1	43.5	0.0	08.6	08.8	038.0	348.1	004.6	12:55	-03.0
2011-Apr-05	177.1E	00.3	0.4	19.2	17.1	43.5	0.0	08.5	08.8	162.4	080.1	095.4	12:55	-03.0
2011-Apr-06	176.6E	00.4	0.4	19.2	17.1	43.5	0.0	08.5	08.8	286.8	172.2	186.3	12:55	-03.0
2011-Apr-07	175.9E	00.4	0.4	19.2	17.1	43.5	0.0	08.5	08.9	051.1	264.3	277.2	12:55	-02.9
2011-Apr-08	175.1E	00.5	0.4	19.2	17.1	43.5	0.0	08.4	08.9	175.5	356.3	008.0	12:54	-02.9
2011-Apr-09	174.2E	00.6	0.4	19.2	17.1	43.5	0.0	08.4	08.9	299.8	088.4	098.9	12:54	-02.9
2011-Apr-10	173.2E	00.7	0.4	19.2	17.1	43.5	0.0	08.4	08.9	064.2	180.5	189.7	12:54	-02.8
2011-Apr-11	172.2E	00.8	0.4	19.2	17.1	43.5	0.0	08.3	08.9	188.6	272.5	280.6	12:53	-02.8
2011-Apr-12	171.2E	00.9	0.4	19.2	17.1	43.5	0.0	08.3	08.9	312.9	004.6	011.4	12:53	-02.8
2011-Apr-13	170.2E	01.0	0.4	19.2	17.1	43.5	0.0	08.3	08.9	077.3	096.6	102.3	12:53	-02.7
2011-Apr-14	169.2E	01.1	0.4	19.1	17.1	43.4	0.0	08.2	09.0	201.6	188.7	193.1	12:53	-02.7
2011-Apr-15	168.2E	01.2	0.4	19.1	17.1	43.4	0.0	08.2	09.0	326.0	280.8	284.0	12:52	-02.7
2011-Apr-16	167.1E	01.3	0.4	19.1	17.1	43.4	0.0	08.2	09.0	090.3	012.8	014.8	12:52	-02.7
2011-Apr-17	166.1E	01.4	0.4	19.1	17.1	43.4	0.0	08.1	09.0	214.7	104.9	105.7	12:52	-02.6
2011-Apr-18	165.1E	01.5	0.5	19.1	17.1	43.4	0.0	08.1	09.0	339.0	196.9	196.5	12:51	-02.6
2011-Apr-19	164.0E	01.6	0.5	19.1	17.0	43.3	0.0	08.1	09.0	103.4	289.0	287.4	12:51	-02.6
2011-Apr-20	163.0E	01.7	0.5	19.1	17.0	43.3	0.0	08.1	09.0	227.7	021.0	018.2	12:51	-02.5
2011-Apr-21	162.0E	01.8	0.5	19.1	17.0	43.3	0.0	08.0	09.1	352.1	113.0	109.0	12:51	-02.5
2011-Apr-22	160.9E	02.0	0.5	19.1	17.0	43.3	0.0	08.0	09.1	116.4	205.1	199.9	12:50	-02.5
2011-Apr-23	159.9E	02.1	0.5	19.1	17.0	43.2	0.0	08.0	09.1	240.8	297.1	290.7	12:50	-02.5
2011-Apr-24	158.9E	02.2	0.5	19.0	17.0	43.2	0.0	07.9	09.1	005.1	029.2	021.5	12:50	-02.4
2011-Apr-25	157.8E	02.3	0.5	19.0	17.0	43.2	0.0	07.9	09.1	129.4	121.2	112.4	12:50	-02.4
2011-Apr-26	156.8E	02.4	0.5	19.0	17.0	43.2	0.0	07.9	09.1	253.8	213.2	203.2	12:49	-02.4
2011-Apr-27	155.8E	02.5	0.5	19.0	17.0	43.1	0.0	07.8	09.1	018.1	305.3	294.0	12:49	-02.4
2011-Apr-28	154.7E	02.6	0.5	19.0	16.9	43.1	0.0	07.8	09.2	142.4	037.3	024.8	12:49	-02.3
2011-Apr-29	153.7E	02.7	0.5	19.0	16.9	43.1	0.0	07.8	09.2	266.7	129.3	115.7	12:49	-02.3
2011-Apr-30	152.7E	02.8	0.5	19.0	16.9	43.0	0.0	07.8	09.2	031.1	221.3	206.5	12:48	-02.3
2011-May-01	151.6E	02.8	0.5	18.9	16.9	43.0	0.0	07.7	09.2	155.4	313.4	297.3	12:48	-02.3
2011-May-02	150.6E	02.9	0.6	18.9	16.9	42.9	0.0	07.7	09.2	279.7	045.4	028.1	12:48	-02.3
2011-May-03	149.6E	03.0	0.6	18.9	16.9	42.9	0.0	07.7	09.2	044.0	137.4	118.9	12:48	-02.2
2011-May-04	148.6E	03.1	0.6	18.9	16.9	42.9	0.0	07.7	09.2	168.3	229.4	209.7	12:47	-02.2
2011-May-05	147.5E	03.2	0.6	18.9	16.8	42.8	0.0	07.6	09.2	292.6	321.4	300.5	12:47	-02.2
2011-May-06	146.5E	03.3	0.6	18.8	16.8	42.8	0.0	07.6	09.3	057.0	053.4	031.3	12:47	-02.2
2011-May-07	145.5E	03.4	0.6	18.8	16.8	42.7	0.0	07.6	09.3	181.3	145.4	122.2	12:47	-02.1
2011-May-08	144.5E	03.5	0.6	18.8	16.8	42.7	0.0	07.6	09.3	305.6	237.5	213.0	12:47	-02.1
2011-May-09	143.5E	03.6	0.6	18.8	16.8	42.6	0.0	07.6	09.3	069.9	329.5	303.8	12:46	-02.1
2011-May-10	142.4E	03.7	0.6	18.8	16.7	42.6	0.0	07.5	09.3	194.2	061.5	034.5	12:46	-02.1
2011-May-11	141.4E	03.7	0.6	18.7	16.7	42.5	0.0	07.5	09.3	318.5	153.5	125.3	12:46	-02.1
2011-May-12	140.4E	03.8	0.6	18.7	16.7	42.5	0.0	07.5	09.3	082.8	245.5	216.1	12:46	-02.1
2011-May-13	139.4E	03.9	0.6	18.7	16.7	42.4	0.0	07.5	09.4	207.1	337.5	306.9	12:46	-02.0
2011-May-14	138.4E	04.0	0.6	18.7	16.7	42.4	0.0	07.5	09.4	331.4	069.5	037.7	12:45	-02.0

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2011-May-15	137.4E	04.1	0.6	18.7	16.6	42.3	0.0	07.4	09.4	095.6	161.4	128.5	12:45	-02.0
2011-May-16	136.4E	04.2	0.7	18.6	16.6	42.3	0.0	07.4	09.4	219.9	253.4	219.3	12:45	-02.0
2011-May-17	135.4E	04.2	0.7	18.6	16.6	42.2	0.0	07.4	09.4	344.2	345.4	310.1	12:45	-02.0
2011-May-18	134.4E	04.3	0.7	18.6	16.6	42.2	0.0	07.4	09.4	108.5	077.4	040.8	12:45	-02.0
2011-May-19	133.4E	04.4	0.7	18.6	16.6	42.1	0.0	07.4	09.4	232.8	169.4	131.6	12:45	-01.9
2011-May-20	132.4E	04.4	0.7	18.5	16.5	42.0	0.0	07.4	09.5	357.1	261.4	222.4	12:44	-01.9
2011-May-21	131.4E	04.5	0.7	18.5	16.5	42.0	0.0	07.3	09.5	121.3	353.3	313.2	12:44	-01.9
2011-May-22	130.4E	04.6	0.7	18.5	16.5	41.9	0.0	07.3	09.5	245.6	085.3	043.9	12:44	-01.9
2011-May-23	129.4E	04.7	0.7	18.5	16.5	41.9	0.0	07.3	09.5	009.9	177.3	134.7	12:44	-01.9
2011-May-24	128.4E	04.7	0.7	18.4	16.4	41.8	0.0	07.3	09.5	134.1	269.3	225.5	12:44	-01.9
2011-May-25	127.4E	04.8	0.7	18.4	16.4	41.7	0.0	07.3	09.5	258.4	001.2	316.2	12:44	-01.9
2011-May-26	126.4E	04.9	0.7	18.4	16.4	41.7	0.0	07.3	09.5	022.7	093.2	047.0	12:44	-01.9
2011-May-27	125.4E	04.9	0.7	18.3	16.4	41.6	0.0	07.3	09.6	146.9	185.2	137.8	12:43	-01.9
2011-May-28	124.4E	05.0	0.7	18.3	16.3	41.6	0.0	07.3	09.6	271.2	277.1	228.5	12:43	-01.9
2011-May-29	123.4E	05.0	0.7	18.3	16.3	41.5	0.0	07.3	09.6	035.5	009.1	319.3	12:43	-01.9
2011-May-30	122.4E	05.1	0.7	18.3	16.3	41.4	0.0	07.2	09.6	159.7	101.0	050.0	12:43	-01.8
2011-May-31	121.5E	05.1	0.7	18.2	16.3	41.4	0.0	07.2	09.6	284.0	193.0	140.8	12:43	-01.8
2011-Jun-01	120.5E	05.2	0.8	18.2	16.2	41.3	0.0	07.2	09.6	048.2	285.0	231.5	12:43	-01.8
2011-Jun-02	119.5E	05.3	0.8	18.2	16.2	41.2	0.0	07.2	09.6	172.5	016.9	322.3	12:43	-01.8
2011-Jun-03	118.5E	05.3	0.8	18.1	16.2	41.2	0.0	07.2	09.7	296.7	108.9	053.0	12:43	-01.8
2011-Jun-04	117.6E	05.4	0.8	18.1	16.2	41.1	0.0	07.2	09.7	061.0	200.8	143.7	12:43	-01.8
2011-Jun-05	116.6E	05.4	0.8	18.1	16.1	41.0	0.0	07.2	09.7	185.2	292.8	234.5	12:43	-01.8
2011-Jun-06	115.6E	05.4	0.8	18.1	16.1	41.0	0.0	07.2	09.7	309.4	024.7	325.2	12:43	-01.8
2011-Jun-07	114.7E	05.5	0.8	18.0	16.1	40.9	0.0	07.2	09.7	073.7	116.6	056.0	12:43	-01.8
2011-Jun-08	113.7E	05.5	0.8	18.0	16.1	40.8	0.0	07.2	09.7	197.9	208.6	146.7	12:43	-01.8
2011-Jun-09	112.7E	05.6	0.8	18.0	16.0	40.8	0.0	07.2	09.7	322.2	300.5	237.4	12:43	-01.8
2011-Jun-10	111.8E	05.6	0.8	17.9	16.0	40.7	0.0	07.2	09.7	086.4	032.5	328.2	12:43	-01.8
2011-Jun-11	110.8E	05.6	0.8	17.9	16.0	40.6	0.0	07.2	09.8	210.6	124.4	058.9	12:43	-01.8
2011-Jun-12	109.8E	05.7	0.8	17.9	16.0	40.6	0.0	07.2	09.8	334.8	216.3	149.6	12:42	-01.8
2011-Jun-13	108.9E	05.7	0.8	17.8	15.9	40.5	0.0	07.2	09.8	099.1	308.2	240.3	12:42	-01.8
2011-Jun-14	107.9E	05.7	0.8	17.8	15.9	40.4	0.0	07.2	09.8	223.3	040.2	331.0	12:42	-01.8
2011-Jun-15	107.0E	05.8	0.8	17.8	15.9	40.4	0.0	07.2	09.8	347.5	132.1	061.8	12:42	-01.8
2011-Jun-16	106.0E	05.8	0.8	17.8	15.8	40.3	0.0	07.2	09.8	111.7	224.0	152.5	12:42	-01.8
2011-Jun-17	105.1E	05.8	0.8	17.7	15.8	40.2	0.0	07.2	09.8	236.0	315.9	243.2	12:43	-01.9
2011-Jun-18	104.1E	05.9	0.8	17.7	15.8	40.2	0.0	07.3	09.9	000.2	047.9	333.9	12:43	-01.9
2011-Jun-19	103.2E	05.9	0.9	17.7	15.8	40.1	0.0	07.3	09.9	124.4	139.8	064.6	12:43	-01.9
2011-Jun-20	102.3E	05.9	0.9	17.6	15.7	40.0	0.0	07.3	09.9	248.6	231.7	155.3	12:43	-01.9
2011-Jun-21	101.3E	05.9	0.9	17.6	15.7	39.9	0.0	07.3	09.9	012.8	323.6	246.0	12:43	-01.9
2011-Jun-22	100.4E	05.9	0.9	17.6	15.7	39.9	0.0	07.3	09.9	137.0	055.5	336.8	12:43	-01.9
2011-Jun-23	099.4E	06.0	0.9	17.5	15.7	39.8	0.0	07.3	09.9	261.2	147.4	067.5	12:43	-01.9
2011-Jun-24	098.5E	06.0	0.9	17.5	15.6	39.7	0.0	07.3	09.9	025.4	239.3	158.2	12:43	-01.9
2011-Jun-25	097.6E	06.0	0.9	17.5	15.6	39.7	0.0	07.3	10.0	149.6	331.3	248.9	12:43	-01.9
2011-Jun-26	096.6E	06.0	0.9	17.5	15.6	39.6	0.0	07.3	10.0	273.8	063.2	339.6	12:43	-01.9
2011-Jun-27	095.7E	06.0	0.9	17.4	15.5	39.5	0.0	07.3	10.0	038.0	155.1	070.3	12:43	-01.9
2011-Jun-28	094.8E	06.0	0.9	17.4	15.5	39.5	0.0	07.4	10.0	162.2	247.0	161.0	12:43	-02.0
2011-Jun-29	093.8E	06.0	0.9	17.4	15.5	39.4	0.0	07.4	10.0	286.4	338.9	251.7	12:43	-02.0
2011-Jun-30	092.9E	06.0	0.9	17.3	15.5	39.3	0.0	07.4	10.0	050.6	070.8	342.3	12:43	-02.0

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2011-Jul-01	092.0E	06.0	0.9	17.3	15.4	39.3	0.0	07.4	10.0	174.8	162.7	073.0	12:43	-02.0
2011-Jul-02	091.1E	06.0	0.9	17.3	15.4	39.2	0.0	07.4	10.1	299.0	254.6	163.7	12:43	-02.0
2011-Jul-03	090.2E	06.0	0.9	17.2	15.4	39.1	0.0	07.4	10.1	063.2	346.5	254.4	12:44	-02.0
2011-Jul-04	089.2E	06.0	0.9	17.2	15.4	39.1	0.0	07.5	10.1	187.4	078.4	345.1	12:44	-02.0
2011-Jul-05	088.3E	06.0	0.9	17.2	15.3	39.0	0.0	07.5	10.1	311.6	170.2	075.8	12:44	-02.1
2011-Jul-06	087.4E	06.0	0.9	17.2	15.3	38.9	0.0	07.5	10.1	075.8	262.1	166.5	12:44	-02.1
2011-Jul-07	086.5E	06.0	0.9	17.1	15.3	38.9	0.0	07.5	10.1	200.0	354.0	257.2	12:44	-02.1
2011-Jul-08	085.6E	06.0	0.9	17.1	15.3	38.8	0.0	07.5	10.1	324.2	085.9	347.8	12:44	-02.1
2011-Jul-09	084.7E	06.0	0.9	17.1	15.2	38.7	0.0	07.6	10.1	088.3	177.8	078.5	12:44	-02.1
2011-Jul-10	083.7E	06.0	0.9	17.0	15.2	38.7	0.0	07.6	10.2	212.5	269.7	169.2	12:44	-02.2
2011-Jul-11	082.8E	06.0	0.9	17.0	15.2	38.6	0.0	07.6	10.2	336.7	001.6	259.9	12:45	-02.2
2011-Jul-12	081.9E	06.0	0.9	17.0	15.1	38.5	0.0	07.6	10.2	100.9	093.5	350.6	12:45	-02.2
2011-Jul-13	081.0E	06.0	0.9	16.9	15.1	38.5	0.0	07.7	10.2	225.1	185.3	081.2	12:45	-02.2
2011-Jul-14	080.1E	06.0	0.9	16.9	15.1	38.4	0.0	07.7	10.2	349.2	277.2	171.9	12:45	-02.2
2011-Jul-15	079.2E	05.9	0.9	16.9	15.1	38.3	0.0	07.7	10.2	113.4	009.1	262.6	12:45	-02.3
2011-Jul-16	078.3E	05.9	0.9	16.9	15.0	38.3	0.0	07.7	10.2	237.6	101.0	353.3	12:45	-02.3
2011-Jul-17	077.4E	05.9	0.9	16.8	15.0	38.2	0.0	07.8	10.3	001.8	192.9	083.9	12:46	-02.3
2011-Jul-18	076.5E	05.9	0.9	16.8	15.0	38.1	0.0	07.8	10.3	125.9	284.7	174.6	12:46	-02.3
2011-Jul-19	075.6E	05.9	0.9	16.8	15.0	38.1	0.0	07.8	10.3	250.1	016.6	265.3	12:46	-02.4
2011-Jul-20	074.7E	05.8	0.9	16.8	15.0	38.0	0.0	07.8	10.3	014.3	108.5	355.9	12:46	-02.4
2011-Jul-21	073.8E	05.8	0.9	16.7	14.9	38.0	0.0	07.9	10.3	138.5	200.4	086.6	12:46	-02.4
2011-Jul-22	072.9E	05.8	0.9	16.7	14.9	37.9	0.0	07.9	10.3	262.6	292.2	177.3	12:47	-02.4
2011-Jul-23	072.0E	05.7	0.9	16.7	14.9	37.8	0.0	07.9	10.3	026.8	024.1	267.9	12:47	-02.5
2011-Jul-24	071.2E	05.7	0.9	16.6	14.9	37.8	0.0	08.0	10.4	151.0	116.0	358.6	12:47	-02.5
2011-Jul-25	070.3E	05.7	0.9	16.6	14.8	37.7	0.0	08.0	10.4	275.1	207.8	089.3	12:47	-02.5
2011-Jul-26	069.4E	05.6	0.9	16.6	14.8	37.7	0.0	08.0	10.4	039.3	299.7	179.9	12:48	-02.6
2011-Jul-27	068.5E	05.6	0.9	16.6	14.8	37.6	0.0	08.1	10.4	163.5	031.6	270.6	12:48	-02.6
2011-Jul-28	067.6E	05.6	0.9	16.5	14.8	37.5	0.0	08.1	10.4	287.6	123.4	001.3	12:48	-02.6
2011-Jul-29	066.7E	05.5	1.0	16.5	14.7	37.5	0.0	08.1	10.4	051.8	215.3	091.9	12:48	-02.7
2011-Jul-30	065.8E	05.5	1.0	16.5	14.7	37.4	0.0	08.2	10.4	176.0	307.2	182.6	12:49	-02.7
2011-Jul-31	065.0E	05.5	1.0	16.5	14.7	37.4	0.0	08.2	10.4	300.1	039.0	273.2	12:49	-02.7
2011-Aug-01	064.1E	05.4	1.0	16.4	14.7	37.3	0.0	08.2	10.5	064.3	130.9	003.9	12:49	-02.7
2011-Aug-02	063.2E	05.4	1.0	16.4	14.7	37.3	0.0	08.3	10.5	188.4	222.8	094.5	12:49	-02.8
2011-Aug-03	062.3E	05.3	1.0	16.4	14.6	37.2	0.0	08.3	10.5	312.6	314.6	185.2	12:50	-02.8
2011-Aug-04	061.4E	05.3	1.0	16.4	14.6	37.1	0.0	08.3	10.5	076.8	046.5	275.9	12:50	-02.8
2011-Aug-05	060.6E	05.2	1.0	16.3	14.6	37.1	0.0	08.4	10.5	200.9	138.4	006.5	12:50	-02.9
2011-Aug-06	059.7E	05.2	0.9	16.3	14.6	37.0	0.0	08.4	10.5	325.1	230.2	097.2	12:51	-02.9
2011-Aug-07	058.8E	05.2	0.9	16.3	14.5	37.0	0.0	08.4	10.5	089.2	322.1	187.8	12:51	-02.9
2011-Aug-08	057.9E	05.1	0.9	16.3	14.5	36.9	0.0	08.5	10.6	213.4	053.9	278.5	12:51	-03.0
2011-Aug-09	057.0E	05.1	0.9	16.3	14.5	36.9	0.0	08.5	10.6	337.5	145.8	009.1	12:51	-03.0
2011-Aug-10	056.2E	05.0	0.9	16.2	14.5	36.8	0.0	08.6	10.6	101.7	237.7	099.8	12:52	-03.0
2011-Aug-11	055.3E	04.9	0.9	16.2	14.5	36.8	0.0	08.6	10.6	225.9	329.5	190.4	12:52	-03.1
2011-Aug-12	054.4E	04.9	0.9	16.2	14.4	36.7	0.0	08.6	10.6	350.0	061.4	281.1	12:52	-03.1
2011-Aug-13	053.6E	04.8	0.9	16.2	14.4	36.7	0.0	08.7	10.6	114.2	153.2	011.7	12:53	-03.2
2011-Aug-14	052.7E	04.8	0.9	16.1	14.4	36.6	0.0	08.7	10.6	238.3	245.1	102.4	12:53	-03.2
2011-Aug-15	051.8E	04.7	0.9	16.1	14.4	36.6	0.0	08.8	10.6	002.5	336.9	193.1	12:53	-03.2

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2011-Aug-16	051.0E	04.7	0.9	16.1	14.4	36.5	0.0	08.8	10.7	126.6	068.8	283.7	12:54	-03.3
2011-Aug-17	050.1E	04.6	0.9	16.1	14.4	36.5	0.0	08.9	10.7	250.8	160.7	014.4	12:54	-03.3
2011-Aug-18	049.2E	04.5	0.9	16.1	14.3	36.5	0.0	08.9	10.7	014.9	252.5	105.0	12:54	-03.3
2011-Aug-19	048.4E	04.5	0.9	16.0	14.3	36.4	0.0	08.9	10.7	139.1	344.4	195.7	12:55	-03.4
2011-Aug-20	047.5E	04.4	0.9	16.0	14.3	36.4	0.0	09.0	10.7	263.3	076.2	286.3	12:55	-03.4
2011-Aug-21	046.6E	04.4	0.9	16.0	14.3	36.3	0.0	09.0	10.7	027.4	168.1	017.0	12:55	-03.5
2011-Aug-22	045.8E	04.3	0.9	16.0	14.3	36.3	0.0	09.1	10.7	151.6	259.9	107.6	12:56	-03.5
2011-Aug-23	044.9E	04.2	0.9	16.0	14.3	36.2	0.0	09.1	10.8	275.7	351.8	198.3	12:56	-03.5
2011-Aug-24	044.0E	04.2	0.9	16.0	14.2	36.2	0.0	09.2	10.8	039.9	083.7	288.9	12:56	-03.6
2011-Aug-25	043.2E	04.1	0.9	15.9	14.2	36.2	0.0	09.2	10.8	164.0	175.5	019.6	12:57	-03.6
2011-Aug-26	042.3E	04.0	0.9	15.9	14.2	36.1	0.0	09.2	10.8	288.2	267.4	110.2	12:57	-03.7
2011-Aug-27	041.4E	04.0	0.9	15.9	14.2	36.1	0.0	09.3	10.8	052.3	359.2	200.9	12:58	-03.7
2011-Aug-28	040.6E	03.9	0.9	15.9	14.2	36.0	0.0	09.3	10.8	176.5	091.1	291.5	12:58	-03.7
2011-Aug-29	039.7E	03.8	0.9	15.9	14.2	36.0	0.0	09.4	10.8	300.6	182.9	022.2	12:58	-03.8
2011-Aug-30	038.9E	03.8	0.9	15.9	14.1	36.0	0.0	09.4	10.9	064.8	274.8	112.8	12:59	-03.8
2011-Aug-31	038.0E	03.7	0.9	15.8	14.1	35.9	0.0	09.5	10.9	189.0	006.7	203.5	12:59	-03.9
2011-Sep-01	037.1E	03.6	0.9	15.8	14.1	35.9	0.0	09.5	10.9	313.1	098.5	294.1	12:59	-03.9
2011-Sep-02	036.3E	03.5	0.9	15.8	14.1	35.9	0.0	09.6	10.9	077.3	190.4	024.8	13:00	-04.0
2011-Sep-03	035.4E	03.5	0.9	15.8	14.1	35.8	0.0	09.6	10.9	201.4	282.2	115.4	13:00	-04.0
2011-Sep-04	034.6E	03.4	0.9	15.8	14.1	35.8	0.0	09.7	10.9	325.6	014.1	206.1	13:01	-04.0
2011-Sep-05	033.7E	03.3	0.9	15.8	14.1	35.8	0.0	09.7	10.9	089.7	105.9	296.7	13:01	-04.1
2011-Sep-06	032.8E	03.2	0.9	15.8	14.1	35.7	0.0	09.8	10.9	213.9	197.8	027.4	13:01	-04.1
2011-Sep-07	032.0E	03.2	0.9	15.7	14.0	35.7	0.0	09.8	11.0	338.1	289.7	118.0	13:02	-04.2
2011-Sep-08	031.1E	03.1	0.9	15.7	14.0	35.7	0.0	09.9	11.0	102.2	021.5	208.7	13:02	-04.2
2011-Sep-09	030.3E	03.0	0.9	15.7	14.0	35.7	0.0	09.9	11.0	226.4	113.4	299.3	13:03	-04.3
2011-Sep-10	029.4E	02.9	0.9	15.7	14.0	35.6	0.0	10.0	11.0	350.5	205.2	030.0	13:03	-04.3
2011-Sep-11	028.6E	02.9	0.9	15.7	14.0	35.6	0.0	10.0	11.0	114.7	297.1	120.6	13:03	-04.3
2011-Sep-12	027.7E	02.8	0.9	15.7	14.0	35.6	0.0	10.1	11.0	238.8	029.0	211.3	13:04	-04.4
2011-Sep-13	026.8E	02.7	0.9	15.7	14.0	35.5	0.0	10.1	11.0	003.0	120.8	302.0	13:04	-04.4
2011-Sep-14	026.0E	02.6	0.9	15.7	14.0	35.5	0.0	10.2	11.1	127.2	212.7	032.6	13:05	-04.5
2011-Sep-15	025.1E	02.5	0.9	15.6	14.0	35.5	0.0	10.2	11.1	251.3	304.5	123.3	13:05	-04.5
2011-Sep-16	024.3E	02.4	0.9	15.6	14.0	35.5	0.0	10.3	11.1	015.5	036.4	213.9	13:06	-04.6
2011-Sep-17	023.4E	02.4	0.9	15.6	13.9	35.4	0.0	10.3	11.1	139.6	128.3	304.6	13:06	-04.6
2011-Sep-18	022.6E	02.3	0.8	15.6	13.9	35.4	0.0	10.4	11.1	263.8	220.1	035.2	13:06	-04.7
2011-Sep-19	021.7E	02.2	0.8	15.6	13.9	35.4	0.0	10.4	11.1	028.0	312.0	125.9	13:07	-04.7
2011-Sep-20	020.8E	02.1	0.8	15.6	13.9	35.4	0.0	10.5	11.1	152.1	043.9	216.6	13:07	-04.8
2011-Sep-21	020.0E	02.0	0.8	15.6	13.9	35.4	0.0	10.5	11.1	276.3	135.7	307.2	13:08	-04.8
2011-Sep-22	019.1E	01.9	0.8	15.6	13.9	35.3	0.0	10.6	11.2	040.5	227.6	037.9	13:08	-04.8
2011-Sep-23	018.3E	01.9	0.8	15.6	13.9	35.3	0.0	10.6	11.2	164.6	319.5	128.5	13:09	-04.9
2011-Sep-24	017.4E	01.8	0.8	15.6	13.9	35.3	0.0	10.7	11.2	288.8	051.3	219.2	13:09	-04.9
2011-Sep-25	016.6E	01.7	0.8	15.6	13.9	35.3	0.0	10.7	11.2	053.0	143.2	309.9	13:09	-05.0
2011-Sep-26	015.7E	01.6	0.8	15.6	13.9	35.3	0.0	10.8	11.2	177.1	235.1	040.5	13:10	-05.0
2011-Sep-27	014.9E	01.5	0.8	15.5	13.9	35.3	0.0	10.8	11.2	301.3	326.9	131.2	13:10	-05.1
2011-Sep-28	014.0E	01.4	0.8	15.5	13.9	35.3	0.0	10.9	11.2	065.5	058.8	221.8	13:11	-05.1
2011-Sep-29	013.2E	01.4	0.8	15.5	13.9	35.2	0.0	10.9	11.3	189.6	150.7	312.5	13:11	-05.2
2011-Sep-30	012.3E	01.3	0.8	15.5	13.9	35.2	0.0	11.0	11.3	313.8	242.5	043.2	13:12	-05.2

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2011-Oct-01	011.5E	01.2	0.8	15.5	13.9	35.2	0.0	11.0	11.3	078.0	334.4	133.8	13:12	-05.3
2011-Oct-02	010.6E	01.1	0.8	15.5	13.8	35.2	0.0	11.1	11.3	202.2	066.3	224.5	13:13	-05.3
2011-Oct-03	009.8E	01.0	0.8	15.5	13.8	35.2	0.0	11.1	11.3	326.3	158.2	315.2	13:13	-05.3
2011-Oct-04	009.0E	00.9	0.8	15.5	13.8	35.2	0.0	11.2	11.3	090.5	250.0	045.9	13:13	-05.4
2011-Oct-05	008.1E	00.8	0.8	15.5	13.8	35.2	0.0	11.2	11.3	214.7	341.9	136.5	13:14	-05.4
2011-Oct-06	007.3E	00.8	0.8	15.5	13.8	35.2	0.0	11.3	11.3	338.9	073.8	227.2	13:14	-05.5
2011-Oct-07	006.5E	00.7	0.8	15.5	13.8	35.2	0.0	11.3	11.4	103.0	165.7	317.9	13:15	-05.5
2011-Oct-08	005.7E	00.6	0.8	15.5	13.8	35.2	0.0	11.4	11.4	227.2	257.6	048.5	13:15	-05.6
2011-Oct-09	004.9E	00.5	0.7	15.5	13.8	35.2	0.0	11.4	11.4	351.4	349.4	139.2	13:16	-05.6
2011-Oct-10	004.1E	00.4	0.7	15.5	13.8	35.2	0.0	11.5	11.4	115.6	081.3	229.9	13:16	-05.7
2011-Oct-11	003.5E	00.4	0.7	15.5	13.8	35.2	0.0	11.5	11.4	239.8	173.2	320.6	13:17	-05.7
2011-Oct-12	002.9E	00.3	0.7	15.5	13.8	35.2	0.0	11.6	11.4	003.9	265.1	051.2	13:17	-05.8
2011-Oct-13	002.4E	00.2	0.7	15.5	13.8	35.1	0.0	11.6	11.4	128.1	357.0	141.9	13:18	-05.8
2011-Oct-14	002.3E	00.2	0.7	15.5	13.8	35.1	0.0	11.7	11.5	252.3	088.9	232.6	13:18	-05.9
2011-Oct-15	002.4W	00.2	0.7	15.5	13.8	35.1	0.0	11.7	11.5	016.5	180.7	323.3	13:18	-05.9
2011-Oct-16	002.8W	00.3	0.7	15.5	13.8	35.2	0.0	11.8	11.5	140.7	272.6	054.0	13:19	-05.9
2011-Oct-17	003.4W	00.4	0.7	15.5	13.8	35.2	0.0	11.8	11.5	264.9	004.5	144.6	13:19	-06.0
2011-Oct-18	004.1W	00.4	0.7	15.5	13.8	35.2	0.0	11.9	11.5	029.1	096.4	235.3	13:20	-06.0
2011-Oct-19	004.9W	00.5	0.7	15.5	13.8	35.2	0.0	11.9	11.5	153.3	188.3	326.0	13:20	-06.1
2011-Oct-20	005.7W	00.6	0.7	15.5	13.8	35.2	0.0	12.0	11.5	277.5	280.2	056.7	13:21	-06.1
2011-Oct-21	006.5W	00.7	0.7	15.5	13.8	35.2	0.0	12.0	11.5	041.7	012.1	147.4	13:21	-06.2
2011-Oct-22	007.3W	00.7	0.7	15.5	13.8	35.2	0.0	12.1	11.6	165.9	104.0	238.1	13:22	-06.2
2011-Oct-23	008.1W	00.8	0.7	15.5	13.8	35.2	0.0	12.1	11.6	290.0	195.9	328.8	13:22	-06.3
2011-Oct-24	009.0W	00.9	0.7	15.5	13.8	35.2	0.0	12.2	11.6	054.2	287.8	059.5	13:23	-06.3
2011-Oct-25	009.8W	01.0	0.7	15.5	13.8	35.2	0.0	12.2	11.6	178.4	019.7	150.2	13:23	-06.3
2011-Oct-26	010.7W	01.1	0.7	15.5	13.8	35.2	0.0	12.3	11.6	302.6	111.6	240.9	13:23	-06.4
2011-Oct-27	011.5W	01.2	0.7	15.5	13.9	35.2	0.0	12.3	11.6	066.8	203.5	331.5	13:24	-06.4
2011-Oct-28	012.4W	01.3	0.7	15.5	13.9	35.2	0.0	12.4	11.6	191.1	295.4	062.2	13:24	-06.5
2011-Oct-29	013.3W	01.3	0.7	15.5	13.9	35.2	0.0	12.4	11.7	315.3	027.3	152.9	13:25	-06.5
2011-Oct-30	014.1W	01.4	0.7	15.5	13.9	35.3	0.0	12.5	11.7	079.5	119.2	243.6	13:25	-06.6
2011-Oct-31	015.0W	01.5	0.7	15.5	13.9	35.3	0.0	12.5	11.7	203.7	211.1	334.3	13:26	-06.6
2011-Nov-01	015.9W	01.6	0.8	15.6	13.9	35.3	0.0	12.5	11.7	327.9	303.0	065.0	13:26	-06.7
2011-Nov-02	016.7W	01.7	0.8	15.6	13.9	35.3	0.0	12.6	11.7	092.1	034.9	155.7	13:27	-06.7
2011-Nov-03	017.6W	01.8	0.8	15.6	13.9	35.3	0.0	12.6	11.7	216.3	126.8	246.5	13:27	-06.7
2011-Nov-04	018.5W	01.9	0.8	15.6	13.9	35.3	0.0	12.7	11.7	340.5	218.7	337.2	13:27	-06.8
2011-Nov-05	019.4W	01.9	0.8	15.6	13.9	35.3	0.0	12.7	11.7	104.7	310.7	067.9	13:28	-06.8
2011-Nov-06	020.3W	02.0	0.8	15.6	13.9	35.4	0.0	12.8	11.8	229.0	042.6	158.6	13:28	-06.9
2011-Nov-07	021.1W	02.1	0.8	15.6	13.9	35.4	0.0	12.8	11.8	353.2	134.5	249.3	13:29	-06.9
2011-Nov-08	022.0W	02.2	0.8	15.6	13.9	35.4	0.0	12.9	11.8	117.4	226.4	340.0	13:29	-07.0
2011-Nov-09	022.9W	02.3	0.8	15.6	13.9	35.4	0.0	12.9	11.8	241.6	318.3	070.7	13:30	-07.0
2011-Nov-10	023.8W	02.4	0.8	15.6	13.9	35.5	0.0	13.0	11.8	005.8	050.3	161.4	13:30	-07.0
2011-Nov-11	024.7W	02.4	0.8	15.6	14.0	35.5	0.0	13.0	11.8	130.1	142.2	252.1	13:31	-07.1
2011-Nov-12	025.6W	02.5	0.8	15.6	14.0	35.5	0.0	13.0	11.8	254.3	234.1	342.9	13:31	-07.1
2011-Nov-13	026.4W	02.6	0.8	15.7	14.0	35.5	0.0	13.1	11.9	018.5	326.0	073.6	13:31	-07.2
2011-Nov-14	027.3W	02.7	0.8	15.7	14.0	35.5	0.0	13.1	11.9	142.7	058.0	164.3	13:32	-07.2
2011-Nov-15	028.2W	02.8	0.8	15.7	14.0	35.6	0.0	13.2	11.9	267.0	149.9	255.0	13:32	-07.2
2011-Nov-16	029.1W	02.8	0.8	15.7	14.0	35.6	0.0	13.2	11.9	031.2	241.8	345.8	13:33	-07.3

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2011-Nov-17	030.0W	02.9	0.8	15.7	14.0	35.6	0.0	13.3	11.9	155.4	333.8	076.5	13:33	-07.3
2011-Nov-18	030.9W	03.0	0.8	15.7	14.0	35.7	0.0	13.3	11.9	279.7	065.7	167.2	13:34	-07.3
2011-Nov-19	031.8W	03.1	0.8	15.7	14.0	35.7	0.0	13.3	11.9	043.9	157.6	257.9	13:34	-07.4
2011-Nov-20	032.7W	03.2	0.8	15.7	14.0	35.7	0.0	13.4	11.9	168.1	249.6	348.7	13:34	-07.4
2011-Nov-21	033.6W	03.2	0.8	15.8	14.1	35.7	0.0	13.4	12.0	292.4	341.5	079.4	13:35	-07.5
2011-Nov-22	034.5W	03.3	0.8	15.8	14.1	35.8	0.0	13.5	12.0	056.6	073.4	170.1	13:35	-07.5
2011-Nov-23	035.4W	03.4	0.8	15.8	14.1	35.8	0.0	13.5	12.0	180.9	165.4	260.9	13:36	-07.5
2011-Nov-24	036.3W	03.5	0.8	15.8	14.1	35.8	0.0	13.6	12.0	305.1	257.3	351.6	13:36	-07.6
2011-Nov-25	037.2W	03.5	0.8	15.8	14.1	35.9	0.0	13.6	12.0	069.4	349.3	082.4	13:36	-07.6
2011-Nov-26	038.1W	03.6	0.8	15.8	14.1	35.9	0.0	13.6	12.0	193.6	081.2	173.1	13:37	-07.6
2011-Nov-27	039.0W	03.7	0.8	15.8	14.1	35.9	0.0	13.7	12.0	317.9	173.2	263.8	13:37	-07.7
2011-Nov-28	039.9W	03.7	0.8	15.9	14.2	36.0	0.0	13.7	12.1	082.1	265.1	354.6	13:38	-07.7
2011-Nov-29	040.8W	03.8	0.8	15.9	14.2	36.0	0.0	13.7	12.1	206.4	357.1	085.3	13:38	-07.8
2011-Nov-30	041.7W	03.9	0.8	15.9	14.2	36.1	0.0	13.8	12.1	330.6	089.0	176.1	13:38	-07.8
2011-Dec-01	042.7W	04.0	0.8	15.9	14.2	36.1	0.0	13.8	12.1	094.9	181.0	266.8	13:39	-07.8
2011-Dec-02	043.6W	04.0	0.8	15.9	14.2	36.1	0.0	13.9	12.1	219.2	272.9	357.6	13:39	-07.9
2011-Dec-03	044.5W	04.1	0.8	15.9	14.2	36.2	0.0	13.9	12.1	343.4	004.9	088.3	13:39	-07.9
2011-Dec-04	045.4W	04.1	0.8	16.0	14.2	36.2	0.0	13.9	12.1	107.7	096.9	179.1	13:40	-07.9
2011-Dec-05	046.3W	04.2	0.8	16.0	14.3	36.3	0.0	14.0	12.1	231.9	188.8	269.8	13:40	-08.0
2011-Dec-06	047.2W	04.3	0.8	16.0	14.3	36.3	0.0	14.0	12.2	356.2	280.8	000.6	13:41	-08.0
2011-Dec-07	048.1W	04.3	0.8	16.0	14.3	36.3	0.0	14.0	12.2	120.5	012.8	091.4	13:41	-08.0
2011-Dec-08	049.1W	04.4	0.8	16.0	14.3	36.4	0.0	14.1	12.2	244.7	104.7	182.1	13:41	-08.0
2011-Dec-09	050.0W	04.5	0.8	16.1	14.3	36.4	0.0	14.1	12.2	009.0	196.7	272.9	13:42	-08.1
2011-Dec-10	050.9W	04.5	0.8	16.1	14.3	36.5	0.0	14.1	12.2	133.3	288.7	003.7	13:42	-08.1
2011-Dec-11	051.8W	04.6	0.8	16.1	14.4	36.5	0.0	14.2	12.2	257.6	020.6	094.4	13:42	-08.1
2011-Dec-12	052.8W	04.6	0.8	16.1	14.4	36.6	0.0	14.2	12.2	021.8	112.6	185.2	13:43	-08.2
2011-Dec-13	053.7W	04.7	0.8	16.1	14.4	36.6	0.0	14.2	12.2	146.1	204.6	276.0	13:43	-08.2
2011-Dec-14	054.6W	04.7	0.7	16.2	14.4	36.7	0.0	14.3	12.3	270.4	296.6	006.7	13:43	-08.2
2011-Dec-15	055.5W	04.8	0.7	16.2	14.4	36.7	0.0	14.3	12.3	034.7	028.5	097.5	13:44	-08.3
2011-Dec-16	056.5W	04.9	0.7	16.2	14.5	36.8	0.0	14.3	12.3	159.0	120.5	188.3	13:44	-08.3
2011-Dec-17	057.4W	04.9	0.7	16.2	14.5	36.8	0.0	14.3	12.3	283.3	212.5	279.1	13:44	-08.3
2011-Dec-18	058.3W	05.0	0.7	16.2	14.5	36.9	0.0	14.4	12.3	047.6	304.5	009.8	13:45	-08.3
2011-Dec-19	059.3W	05.0	0.7	16.3	14.5	36.9	0.0	14.4	12.3	171.8	036.5	100.6	13:45	-08.4
2011-Dec-20	060.2W	05.0	0.7	16.3	14.5	37.0	0.0	14.4	12.3	296.1	128.5	191.4	13:45	-08.4
2011-Dec-21	061.2W	05.1	0.7	16.3	14.6	37.0	0.0	14.5	12.4	060.4	220.5	282.2	13:46	-08.4
2011-Dec-22	062.1W	05.1	0.7	16.3	14.6	37.1	0.0	14.5	12.4	184.7	312.5	013.0	13:46	-08.4
2011-Dec-23	063.0W	05.2	0.7	16.4	14.6	37.1	0.0	14.5	12.4	309.0	044.5	103.8	13:46	-08.5
2011-Dec-24	064.0W	05.2	0.7	16.4	14.6	37.2	0.0	14.5	12.4	073.3	136.5	194.6	13:46	-08.5
2011-Dec-25	064.9W	05.3	0.7	16.4	14.6	37.2	0.0	14.6	12.4	197.6	228.5	285.4	13:47	-08.5
2011-Dec-26	065.9W	05.3	0.7	16.4	14.7	37.3	0.0	14.6	12.4	321.9	320.5	016.1	13:47	-08.5
2011-Dec-27	066.8W	05.3	0.7	16.5	14.7	37.4	0.0	14.6	12.4	086.2	052.5	106.9	13:47	-08.5
2011-Dec-28	067.8W	05.4	0.7	16.5	14.7	37.4	0.0	14.6	12.4	210.5	144.5	197.7	13:48	-08.6
2011-Dec-29	068.7W	05.4	0.7	16.5	14.7	37.5	0.0	14.6	12.5	334.9	236.5	288.5	13:48	-08.6
2011-Dec-30	069.7W	05.5	0.7	16.5	14.8	37.5	0.0	14.7	12.5	099.2	328.5	019.3	13:48	-08.6

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- UT Date - Universal Dates starting with January 1st and ending December 31st of each year.
- Elong - Geocentric elongation West (W) or East (E) of the Sun in degrees.
- Ph - The fraction of the area of the apparent disk that is illuminated by the Sun.
- Vis Mag - Geocentric apparent Visual Magnitude.
- Diameter - Apparent angular semi-diameter (seconds of arc) of the Equatorial (Eq) and Polar (Po) Globe and the Major(Maj) and Minor(Min) axis of the Rings of Saturn.
- B - Sub-Earth point (Planetocentric Declination of Earth) as seen from Earth with respect to Saturn in degrees.
- B' - Sub-Solar point (Planetocentric Declination of Sun) as seen from Sun with respect to Saturn in degrees.
- CM - CMI, CMII, CMIII Planetographic longitude of the central meridians of Saturn(degrees).
NOTE: The Central Meridian is an imaginary line passing through the planetary poles of rotation and bisecting the planetary disk. This line is used to define what areographic longitudes are present on the disk during an observing session.
- RA - The Geocentric Right Ascension of the center of Saturn in hours and minutes (hh:mm).
- Dec - The Declination of the center of Saturn in degrees.

MOTION OF THE CENTRAL MERIDIAN OF SATURN

The tabulated values for the Central Meridian are listed for 0-hours UT in the Ephemeris
(Add the values below to the listed Central Meridian)

HR	O			MIN	O			MIN	O		
	Sys I	Sys II	Sys III		Sys I	Sys II	Sys III		Sys I	Sys II	Sys III
1	35.18	33.83	33.78	10	5.86	5.64	5.63	1	0.59	0.56	0.56
2	70.36	67.67	67.57	20	11.73	11.28	11.26	2	1.17	1.13	1.13
3	105.54	101.50	101.35	30	17.59	16.92	16.89	3	1.76	1.69	1.69
4	140.72	135.33	135.13	40	23.45	22.56	22.52	4	2.35	2.26	2.25
5	175.90	169.17	168.92	50	29.32	28.19	28.15	5	2.93	2.82	2.82
6	211.07	203.00	202.70					6	3.52	3.38	3.38
7	246.25	236.83	236.48					7	4.10	3.95	3.94
8	281.43	270.67	270.26					8	4.69	4.51	4.50
9	316.61	304.50	304.05					9	5.28	5.07	5.07
10	351.79	338.33	337.83								

Example: 0h UT CMI = 51.5. At 1413UT CM = 51.5° + 351.79° + 140.72° + 5.86° + 1.76°
= 551.63° - 360° = 191.63°