

Ephemeris for Physical Observations of Saturn (0^h UT) for 2008 Including Central Meridian (CM) Longitudes

UT Date	Elong	Ph	Vis	Semi-Diameter (")			B	B'	CMI	CMII	CMIII	RA	DEC	
yyyy-mm-dd	°	°	Mag	Globe	Rings		°	°	°	°	°	hh:mm	°	
			m _v	Eq	Po	Maj	Min							
2008-Jan-01	121.4W	5.2	0.6	09.5	8.5	21.5	2.5	-06.8	-09.1	237.0	071.7	082.3	10:43	09.9
2008-Jan-02	122.4W	5.1	0.6	09.5	8.5	21.6	2.6	-06.8	-09.1	001.3	163.8	173.2	10:43	10.0
2008-Jan-03	123.5W	5.1	0.6	09.5	8.5	21.6	2.6	-06.8	-09.0	125.7	255.9	264.0	10:42	10.0
2008-Jan-04	124.5W	5.0	0.6	09.5	8.5	21.6	2.6	-06.8	-09.0	250.1	348.0	354.9	10:42	10.0
2008-Jan-05	125.6W	4.9	0.6	09.5	8.5	21.7	2.6	-06.8	-09.0	014.5	080.1	085.8	10:42	10.0
2008-Jan-06	126.6W	4.9	0.6	09.6	8.5	21.7	2.6	-06.9	-09.0	138.9	172.2	176.7	10:42	10.0
2008-Jan-07	127.7W	4.8	0.6	09.6	8.5	21.7	2.6	-06.9	-09.0	263.3	264.3	267.6	10:42	10.0
2008-Jan-08	128.7W	4.7	0.5	09.6	8.6	21.8	2.6	-06.9	-09.0	027.7	356.3	358.5	10:42	10.0
2008-Jan-09	129.8W	4.7	0.5	09.6	8.6	21.8	2.6	-06.9	-09.0	152.1	088.4	089.3	10:42	10.1
2008-Jan-10	130.8W	4.6	0.5	09.6	8.6	21.8	2.6	-06.9	-08.9	276.5	180.5	180.2	10:42	10.1
2008-Jan-11	131.9W	4.5	0.5	09.6	8.6	21.9	2.6	-07.0	-08.9	040.9	272.6	271.1	10:42	10.1
2008-Jan-12	132.9W	4.5	0.5	09.6	8.6	21.9	2.7	-07.0	-08.9	165.3	004.7	002.0	10:41	10.1
2008-Jan-13	134.0W	4.4	0.5	09.7	8.6	21.9	2.7	-07.0	-08.9	289.7	096.8	092.9	10:41	10.1
2008-Jan-14	135.1W	4.3	0.5	09.7	8.6	22.0	2.7	-07.0	-08.9	054.1	188.9	183.8	10:41	10.1
2008-Jan-15	136.1W	4.2	0.5	09.7	8.6	22.0	2.7	-07.1	-08.9	178.4	281.0	274.7	10:41	10.2
2008-Jan-16	137.2W	4.1	0.5	09.7	8.7	22.0	2.7	-07.1	-08.9	302.8	013.1	005.5	10:41	10.2
2008-Jan-17	138.3W	4.0	0.5	09.7	8.7	22.0	2.7	-07.1	-08.8	067.2	105.2	096.4	10:41	10.2
2008-Jan-18	139.3W	4.0	0.5	09.7	8.7	22.1	2.7	-07.1	-08.8	191.6	197.3	187.3	10:40	10.2
2008-Jan-19	140.4W	3.9	0.5	09.7	8.7	22.1	2.8	-07.2	-08.8	316.0	289.4	278.2	10:40	10.3
2008-Jan-20	141.5W	3.8	0.5	09.8	8.7	22.1	2.8	-07.2	-08.8	080.4	021.5	009.1	10:40	10.3
2008-Jan-21	142.5W	3.7	0.5	09.8	8.7	22.2	2.8	-07.2	-08.8	204.8	113.6	100.0	10:40	10.3
2008-Jan-22	143.6W	3.6	0.4	09.8	8.7	22.2	2.8	-07.2	-08.8	329.2	205.6	190.9	10:40	10.3
2008-Jan-23	144.7W	3.5	0.4	09.8	8.7	22.2	2.8	-07.3	-08.7	093.6	297.7	281.8	10:39	10.4
2008-Jan-24	145.8W	3.4	0.4	09.8	8.7	22.2	2.8	-07.3	-08.7	218.0	029.8	012.6	10:39	10.4
2008-Jan-25	146.8W	3.3	0.4	09.8	8.8	22.3	2.8	-07.3	-08.7	342.4	121.9	103.5	10:39	10.4
2008-Jan-26	147.9W	3.2	0.4	09.8	8.8	22.3	2.9	-07.4	-08.7	106.8	214.0	194.4	10:39	10.4
2008-Jan-27	149.0W	3.1	0.4	09.8	8.8	22.3	2.9	-07.4	-08.7	231.2	306.1	285.3	10:39	10.5
2008-Jan-28	150.1W	3.0	0.4	09.8	8.8	22.3	2.9	-07.4	-08.7	355.6	038.2	016.2	10:38	10.5
2008-Jan-29	151.1W	2.9	0.4	09.8	8.8	22.3	2.9	-07.5	-08.7	120.0	130.3	107.1	10:38	10.5
2008-Jan-30	152.2W	2.8	0.4	09.9	8.8	22.4	2.9	-07.5	-08.6	244.4	222.4	198.0	10:38	10.5
2008-Jan-31	153.3W	2.7	0.4	09.9	8.8	22.4	2.9	-07.5	-08.6	008.8	314.5	288.9	10:38	10.6
2008-Feb-01	154.4W	2.6	0.4	09.9	8.8	22.4	2.9	-07.6	-08.6	133.2	046.6	019.8	10:37	10.6
2008-Feb-02	155.5W	2.5	0.4	09.9	8.8	22.4	3.0	-07.6	-08.6	257.6	138.7	110.6	10:37	10.6
2008-Feb-03	156.5W	2.4	0.4	09.9	8.8	22.4	3.0	-07.6	-08.6	022.0	230.8	201.5	10:37	10.6
2008-Feb-04	157.6W	2.3	0.3	09.9	8.8	22.5	3.0	-07.7	-08.6	146.4	322.9	292.4	10:37	10.7
2008-Feb-05	158.7W	2.2	0.3	09.9	8.8	22.5	3.0	-07.7	-08.6	270.8	055.0	023.3	10:36	10.7
2008-Feb-06	159.8W	2.1	0.3	09.9	8.8	22.5	3.0	-07.7	-08.5	035.1	147.0	114.2	10:36	10.7
2008-Feb-07	160.9W	2.0	0.3	09.9	8.8	22.5	3.0	-07.8	-08.5	159.5	239.1	205.1	10:36	10.8
2008-Feb-08	161.9W	1.9	0.3	09.9	8.9	22.5	3.1	-07.8	-08.5	283.9	331.2	296.0	10:35	10.8
2008-Feb-09	163.0W	1.8	0.3	09.9	8.9	22.5	3.1	-07.8	-08.5	048.3	063.3	026.8	10:35	10.8
2008-Feb-10	164.1W	1.7	0.3	09.9	8.9	22.5	3.1	-07.9	-08.5	172.7	155.4	117.7	10:35	10.9
2008-Feb-11	165.2W	1.6	0.3	09.9	8.9	22.6	3.1	-07.9	-08.5	297.1	247.5	208.6	10:35	10.9
2008-Feb-12	166.3W	1.4	0.3	09.9	8.9	22.6	3.1	-08.0	-08.4	061.5	339.6	299.5	10:34	10.9
2008-Feb-13	167.3W	1.3	0.3	09.9	8.9	22.6	3.1	-08.0	-08.4	185.9	071.7	030.4	10:34	10.9
2008-Feb-14	168.4W	1.2	0.3	10.0	8.9	22.6	3.2	-08.0	-08.4	310.3	163.8	121.2	10:34	11.0
2008-Feb-15	169.5W	1.1	0.3	10.0	8.9	22.6	3.2	-08.1	-08.4	074.6	255.8	212.1	10:33	11.0
2008-Feb-16	170.6W	1.0	0.3	10.0	8.9	22.6	3.2	-08.1	-08.4	199.0	347.9	303.0	10:33	11.0
2008-Feb-17	171.6W	0.9	0.3	10.0	8.9	22.6	3.2	-08.1	-08.4	323.4	080.0	033.9	10:33	11.1
2008-Feb-18	172.7W	0.8	0.2	10.0	8.9	22.6	3.2	-08.2	-08.4	087.8	172.1	124.7	10:33	11.1
2008-Feb-19	173.7W	0.7	0.2	10.0	8.9	22.6	3.2	-08.2	-08.3	212.2	264.2	215.6	10:32	11.1

2008-Feb-20	174.8W	0.6	0.2	10.0	8.9	22.6	3.2	-08.3	-08.3	336.5	356.2	306.5	10:32	11.2
2008-Feb-21	175.8W	0.4	0.2	10.0	8.9	22.6	3.3	-08.3	-08.3	100.9	088.3	037.4	10:32	11.2
2008-Feb-22	176.7W	0.3	0.2	10.0	8.9	22.6	3.3	-08.3	-08.3	225.3	180.4	128.2	10:31	11.2
2008-Feb-23	177.5W	0.3	0.2	10.0	8.9	22.6	3.3	-08.4	-08.3	349.7	272.5	219.1	10:31	11.3
2008-Feb-24	178.1W	0.2	0.2	10.0	8.9	22.6	3.3	-08.4	-08.3	114.0	004.5	310.0	10:31	11.3
2008-Feb-25	178.1E	0.2	0.2	10.0	8.9	22.6	3.3	-08.4	-08.2	238.4	096.6	040.8	10:30	11.3
2008-Feb-26	177.5E	0.3	0.2	10.0	8.9	22.6	3.3	-08.5	-08.2	002.8	188.7	131.7	10:30	11.3
2008-Feb-27	176.7E	0.4	0.2	10.0	8.9	22.6	3.4	-08.5	-08.2	127.2	280.7	222.6	10:30	11.4
2008-Feb-28	175.8E	0.5	0.2	10.0	8.9	22.6	3.4	-08.6	-08.2	251.5	012.8	313.4	10:30	11.4
2008-Feb-29	174.8E	0.6	0.2	10.0	8.9	22.6	3.4	-08.6	-08.2	015.9	104.9	044.3	10:29	11.4

2008-Mar-01	173.7E	0.7	0.2	10.0	8.9	22.6	3.4	-08.6	-08.2	140.3	196.9	135.1	10:29	11.5
2008-Mar-02	172.7E	0.8	0.2	10.0	8.9	22.6	3.4	-08.7	-08.2	264.6	289.0	226.0	10:29	11.5
2008-Mar-03	171.7E	0.9	0.2	10.0	8.9	22.6	3.4	-08.7	-08.1	029.0	021.1	316.8	10:28	11.5
2008-Mar-04	170.6E	1.0	0.2	10.0	8.9	22.6	3.4	-08.7	-08.1	153.3	113.1	047.7	10:28	11.6
2008-Mar-05	169.5E	1.1	0.2	10.0	8.9	22.6	3.4	-08.8	-08.1	277.7	205.2	138.5	10:28	11.6
2008-Mar-06	168.5E	1.2	0.2	10.0	8.9	22.6	3.5	-08.8	-08.1	042.0	297.2	229.4	10:27	11.6
2008-Mar-07	167.4E	1.3	0.2	09.9	8.9	22.6	3.5	-08.9	-08.1	166.4	029.3	320.2	10:27	11.6
2008-Mar-08	166.3E	1.4	0.3	09.9	8.9	22.6	3.5	-08.9	-08.1	290.7	121.3	051.1	10:27	11.7
2008-Mar-09	165.3E	1.6	0.3	09.9	8.9	22.5	3.5	-08.9	-08.1	055.1	213.4	141.9	10:27	11.7
2008-Mar-10	164.2E	1.7	0.3	09.9	8.9	22.5	3.5	-09.0	-08.0	179.4	305.4	232.8	10:26	11.7
2008-Mar-11	163.1E	1.8	0.3	09.9	8.9	22.5	3.5	-09.0	-08.0	303.8	037.5	323.6	10:26	11.8
2008-Mar-12	162.1E	1.9	0.3	09.9	8.9	22.5	3.5	-09.0	-08.0	068.1	129.5	054.4	10:26	11.8
2008-Mar-13	161.0E	2.0	0.3	09.9	8.8	22.5	3.5	-09.1	-08.0	192.5	221.6	145.3	10:25	11.8
2008-Mar-14	159.9E	2.1	0.3	09.9	8.8	22.5	3.6	-09.1	-08.0	316.8	313.6	236.1	10:25	11.8
2008-Mar-15	158.9E	2.2	0.3	09.9	8.8	22.5	3.6	-09.1	-08.0	081.1	045.6	327.0	10:25	11.9
2008-Mar-16	157.8E	2.3	0.3	09.9	8.8	22.5	3.6	-09.2	-07.9	205.5	137.7	057.8	10:25	11.9
2008-Mar-17	156.7E	2.4	0.3	09.9	8.8	22.4	3.6	-09.2	-07.9	329.8	229.7	148.6	10:24	11.9
2008-Mar-18	155.7E	2.5	0.3	09.9	8.8	22.4	3.6	-09.2	-07.9	094.1	321.8	239.4	10:24	11.9
2008-Mar-19	154.6E	2.6	0.3	09.9	8.8	22.4	3.6	-09.3	-07.9	218.5	053.8	330.3	10:24	12.0
2008-Mar-20	153.6E	2.7	0.3	09.9	8.8	22.4	3.6	-09.3	-07.9	342.8	145.8	061.1	10:24	12.0
2008-Mar-21	152.5E	2.8	0.3	09.9	8.8	22.4	3.6	-09.3	-07.9	107.1	237.8	151.9	10:23	12.0
2008-Mar-22	151.5E	2.9	0.3	09.8	8.8	22.3	3.6	-09.3	-07.9	231.4	329.8	242.7	10:23	12.0
2008-Mar-23	150.4E	3.0	0.3	09.8	8.8	22.3	3.6	-09.4	-07.8	355.7	061.9	333.5	10:23	12.1
2008-Mar-24	149.4E	3.1	0.3	09.8	8.8	22.3	3.6	-09.4	-07.8	120.1	153.9	064.3	10:23	12.1
2008-Mar-25	148.3E	3.2	0.3	09.8	8.8	22.3	3.6	-09.4	-07.8	244.4	245.9	155.1	10:22	12.1
2008-Mar-26	147.3E	3.3	0.3	09.8	8.7	22.2	3.7	-09.5	-07.8	008.7	337.9	245.9	10:22	12.1
2008-Mar-27	146.2E	3.4	0.4	09.8	8.7	22.2	3.7	-09.5	-07.8	133.0	069.9	336.8	10:22	12.1
2008-Mar-28	145.2E	3.5	0.4	09.8	8.7	22.2	3.7	-09.5	-07.8	257.3	161.9	067.6	10:22	12.2
2008-Mar-29	144.1E	3.6	0.4	09.8	8.7	22.2	3.7	-09.5	-07.7	021.6	253.9	158.4	10:21	12.2
2008-Mar-30	143.1E	3.7	0.4	09.8	8.7	22.1	3.7	-09.6	-07.7	145.9	345.9	249.2	10:21	12.2
2008-Mar-31	142.0E	3.8	0.4	09.7	8.7	22.1	3.7	-09.6	-07.7	270.2	077.9	340.0	10:21	12.2

2008-Apr-01	141.0E	3.9	0.4	09.7	8.7	22.1	3.7	-09.6	-07.7	034.5	169.9	070.7	10:21	12.2
2008-Apr-02	140.0E	4.0	0.4	09.7	8.7	22.1	3.7	-09.6	-07.7	158.8	261.9	161.5	10:21	12.3
2008-Apr-03	138.9E	4.1	0.4	09.7	8.7	22.0	3.7	-09.7	-07.7	283.1	353.9	252.3	10:20	12.3
2008-Apr-04	137.9E	4.1	0.4	09.7	8.7	22.0	3.7	-09.7	-07.7	047.4	085.9	343.1	10:20	12.3
2008-Apr-05	136.9E	4.2	0.4	09.7	8.6	22.0	3.7	-09.7	-07.6	171.7	177.9	073.9	10:20	12.3
2008-Apr-06	135.8E	4.3	0.4	09.7	8.6	21.9	3.7	-09.7	-07.6	296.0	269.9	164.7	10:20	12.3
2008-Apr-07	134.8E	4.4	0.4	09.7	8.6	21.9	3.7	-09.7	-07.6	060.3	001.9	255.5	10:20	12.3
2008-Apr-08	133.8E	4.5	0.4	09.6	8.6	21.9	3.7	-09.8	-07.6	184.5	093.9	346.2	10:20	12.4
2008-Apr-09	132.7E	4.5	0.4	09.6	8.6	21.9	3.7	-09.8	-07.6	308.8	185.9	077.0	10:19	12.4
2008-Apr-10	131.7E	4.6	0.4	09.6	8.6	21.8	3.7	-09.8	-07.6	073.1	277.8	167.8	10:19	12.4
2008-Apr-11	130.7E	4.7	0.4	09.6	8.6	21.8	3.7	-09.8	-07.5	197.4	009.8	258.6	10:19	12.4
2008-Apr-12	129.7E	4.8	0.4	09.6	8.6	21.8	3.7	-09.8	-07.5	321.6	101.8	349.3	10:19	12.4
2008-Apr-13	128.7E	4.8	0.4	09.6	8.5	21.7	3.7	-09.8	-07.5	085.9	193.8	080.1	10:19	12.4
2008-Apr-14	127.7E	4.9	0.5	09.6	8.5	21.7	3.7	-09.8	-07.5	210.2	285.7	170.9	10:19	12.4
2008-Apr-15	126.7E	5.0	0.5	09.5	8.5	21.7	3.7	-09.9	-07.5	334.4	017.7	261.6	10:18	12.4
2008-Apr-16	125.6E	5.0	0.5	09.5	8.5	21.6	3.7	-09.9	-07.5	098.7	109.7	352.4	10:18	12.5
2008-Apr-17	124.6E	5.1	0.5	09.5	8.5	21.6	3.7	-09.9	-07.5	223.0	201.6	083.1	10:18	12.5

2008-Apr-18	123.6E	5.2	0.5	09.5	8.5	21.6	3.7	-09.9	-07.4	347.2	293.6	173.9	10:18	12.5
2008-Apr-19	122.6E	5.2	0.5	09.5	8.5	21.5	3.7	-09.9	-07.4	111.5	025.6	264.6	10:18	12.5
2008-Apr-20	121.6E	5.3	0.5	09.5	8.5	21.5	3.7	-09.9	-07.4	235.7	117.5	355.4	10:18	12.5
2008-Apr-21	120.6E	5.3	0.5	09.5	8.4	21.5	3.7	-09.9	-07.4	360.0	209.5	086.1	10:18	12.5
2008-Apr-22	119.6E	5.4	0.5	09.4	8.4	21.4	3.7	-09.9	-07.4	124.2	301.4	176.9	10:18	12.5
2008-Apr-23	118.6E	5.4	0.5	09.4	8.4	21.4	3.7	-09.9	-07.4	248.5	033.4	267.6	10:18	12.5
2008-Apr-24	117.7E	5.5	0.5	09.4	8.4	21.4	3.7	-09.9	-07.4	012.7	125.3	358.4	10:18	12.5
2008-Apr-25	116.7E	5.5	0.5	09.4	8.4	21.3	3.7	-09.9	-07.3	137.0	217.3	089.1	10:18	12.5
2008-Apr-26	115.7E	5.6	0.5	09.4	8.4	21.3	3.7	-10.0	-07.3	261.2	309.2	179.8	10:18	12.5
2008-Apr-27	114.7E	5.6	0.5	09.4	8.4	21.2	3.7	-10.0	-07.3	025.4	041.1	270.6	10:17	12.5
2008-Apr-28	113.7E	5.7	0.5	09.3	8.3	21.2	3.7	-10.0	-07.3	149.7	133.1	001.3	10:17	12.5
2008-Apr-29	112.7E	5.7	0.5	09.3	8.3	21.2	3.7	-10.0	-07.3	273.9	225.0	092.0	10:17	12.5
2008-Apr-30	111.8E	5.8	0.5	09.3	8.3	21.1	3.7	-10.0	-07.3	038.1	317.0	182.8	10:17	12.5
2008-May-01	110.8E	5.8	0.6	09.3	8.3	21.1	3.6	-10.0	-07.2	162.4	048.9	273.5	10:17	12.5
2008-May-02	109.8E	5.9	0.6	09.3	8.3	21.1	3.6	-10.0	-07.2	286.6	140.8	004.2	10:17	12.5
2008-May-03	108.8E	5.9	0.6	09.3	8.3	21.0	3.6	-10.0	-07.2	050.8	232.7	094.9	10:17	12.5
2008-May-04	107.9E	5.9	0.6	09.2	8.3	21.0	3.6	-10.0	-07.2	175.1	324.7	185.7	10:17	12.5
2008-May-05	106.9E	6.0	0.6	09.2	8.2	20.9	3.6	-10.0	-07.2	299.3	056.6	276.4	10:17	12.5
2008-May-06	105.9E	6.0	0.6	09.2	8.2	20.9	3.6	-10.0	-07.2	063.5	148.5	007.1	10:17	12.5
2008-May-07	105.0E	6.0	0.6	09.2	8.2	20.9	3.6	-09.9	-07.2	187.7	240.4	097.8	10:17	12.5
2008-May-08	104.0E	6.0	0.6	09.2	8.2	20.8	3.6	-09.9	-07.1	311.9	332.4	188.5	10:17	12.5
2008-May-09	103.1E	6.1	0.6	09.2	8.2	20.8	3.6	-09.9	-07.1	076.1	064.3	279.2	10:17	12.5
2008-May-10	102.1E	6.1	0.6	09.2	8.2	20.8	3.6	-09.9	-07.1	200.4	156.2	009.9	10:17	12.5
2008-May-11	101.2E	6.1	0.6	09.1	8.2	20.7	3.6	-09.9	-07.1	324.6	248.1	100.7	10:18	12.5
2008-May-12	100.2E	6.1	0.6	09.1	8.1	20.7	3.6	-09.9	-07.1	088.8	340.0	191.4	10:18	12.5
2008-May-13	099.3E	6.2	0.6	09.1	8.1	20.7	3.6	-09.9	-07.1	213.0	071.9	282.1	10:18	12.5
2008-May-14	098.3E	6.2	0.6	09.1	8.1	20.6	3.5	-09.9	-07.0	337.2	163.8	012.8	10:18	12.5
2008-May-15	097.4E	6.2	0.6	09.1	8.1	20.6	3.5	-09.9	-07.0	101.4	255.7	103.5	10:18	12.4
2008-May-16	096.4E	6.2	0.6	09.1	8.1	20.5	3.5	-09.9	-07.0	225.6	347.6	194.2	10:18	12.4
2008-May-17	095.5E	6.2	0.6	09.0	8.1	20.5	3.5	-09.9	-07.0	349.8	079.5	284.9	10:18	12.4
2008-May-18	094.6E	6.2	0.6	09.0	8.0	20.5	3.5	-09.8	-07.0	114.0	171.4	015.6	10:18	12.4
2008-May-19	093.6E	6.2	0.6	09.0	8.0	20.4	3.5	-09.8	-07.0	238.2	263.3	106.2	10:18	12.4
2008-May-20	092.7E	6.2	0.7	09.0	8.0	20.4	3.5	-09.8	-07.0	002.4	355.2	196.9	10:18	12.4
2008-May-21	091.8E	6.2	0.7	09.0	8.0	20.4	3.5	-09.8	-06.9	126.6	087.1	287.6	10:18	12.4
2008-May-22	090.8E	6.2	0.7	09.0	8.0	20.3	3.5	-09.8	-06.9	250.8	179.0	018.3	10:18	12.4
2008-May-23	089.9E	6.2	0.7	08.9	8.0	20.3	3.4	-09.8	-06.9	014.9	270.9	109.0	10:19	12.4
2008-May-24	089.0E	6.2	0.7	08.9	8.0	20.2	3.4	-09.8	-06.9	139.1	002.8	199.7	10:19	12.3
2008-May-25	088.0E	6.2	0.7	08.9	7.9	20.2	3.4	-09.7	-06.9	263.3	094.7	290.4	10:19	12.3
2008-May-26	087.1E	6.2	0.7	08.9	7.9	20.2	3.4	-09.7	-06.9	027.5	186.6	021.1	10:19	12.3
2008-May-27	086.2E	6.2	0.7	08.9	7.9	20.1	3.4	-09.7	-06.8	151.7	278.5	111.7	10:19	12.3
2008-May-28	085.3E	6.2	0.7	08.9	7.9	20.1	3.4	-09.7	-06.8	275.9	010.4	202.4	10:19	12.3
2008-May-29	084.4E	6.2	0.7	08.8	7.9	20.1	3.4	-09.7	-06.8	040.1	102.2	293.1	10:19	12.3
2008-May-30	083.5E	6.2	0.7	08.8	7.9	20.0	3.4	-09.6	-06.8	164.2	194.1	023.8	10:20	12.2
2008-May-31	082.5E	6.2	0.7	08.8	7.9	20.0	3.3	-09.6	-06.8	288.4	286.0	114.4	10:20	12.2
2008-Jun-01	081.6E	6.2	0.7	08.8	7.8	20.0	3.3	-09.6	-06.8	052.6	017.9	205.1	10:20	12.2
2008-Jun-02	080.7E	6.2	0.7	08.8	7.8	19.9	3.3	-09.6	-06.8	176.8	109.8	295.8	10:20	12.2
2008-Jun-03	079.8E	6.2	0.7	08.8	7.8	19.9	3.3	-09.5	-06.7	300.9	201.6	026.5	10:20	12.2
2008-Jun-04	078.9E	6.1	0.7	08.8	7.8	19.9	3.3	-09.5	-06.7	065.1	293.5	117.1	10:21	12.1
2008-Jun-05	078.0E	6.1	0.7	08.7	7.8	19.8	3.3	-09.5	-06.7	189.3	025.4	207.8	10:21	12.1
2008-Jun-06	077.1E	6.1	0.7	08.7	7.8	19.8	3.3	-09.5	-06.7	313.5	117.3	298.5	10:21	12.1
2008-Jun-07	076.2E	6.1	0.7	08.7	7.8	19.8	3.2	-09.4	-06.7	077.6	209.1	029.1	10:21	12.1
2008-Jun-08	075.3E	6.1	0.7	08.7	7.8	19.7	3.2	-09.4	-06.7	201.8	301.0	119.8	10:21	12.1
2008-Jun-09	074.4E	6.0	0.7	08.7	7.7	19.7	3.2	-09.4	-06.6	326.0	032.9	210.5	10:22	12.0
2008-Jun-10	073.5E	6.0	0.7	08.7	7.7	19.7	3.2	-09.3	-06.6	090.1	124.8	301.1	10:22	12.0
2008-Jun-11	072.6E	6.0	0.7	08.6	7.7	19.6	3.2	-09.3	-06.6	214.3	216.6	031.8	10:22	12.0
2008-Jun-12	071.7E	5.9	0.7	08.6	7.7	19.6	3.2	-09.3	-06.6	338.5	308.5	122.5	10:22	12.0
2008-Jun-13	070.8E	5.9	0.8	08.6	7.7	19.6	3.1	-09.2	-06.6	102.6	040.4	213.1	10:23	11.9
2008-Jun-14	070.0E	5.9	0.8	08.6	7.7	19.5	3.1	-09.2	-06.6	226.8	132.2	303.8	10:23	11.9

2008-Jun-15 069.1E 5.8 0.8 08.6 7.7 19.5 3.1 -09.2 -06.6 351.0 224.1 034.4 10:23 11.9
2008-Jun-16 068.2E 5.8 0.8 08.6 7.7 19.5 3.1 -09.2 -06.5 115.1 316.0 125.1 10:23 11.9
2008-Jun-17 067.3E 5.8 0.8 08.6 7.6 19.4 3.1 -09.1 -06.5 239.3 047.8 215.8 10:24 11.8
2008-Jun-18 066.4E 5.7 0.8 08.6 7.6 19.4 3.1 -09.1 -06.5 003.4 139.7 306.4 10:24 11.8
2008-Jun-19 065.5E 5.7 0.8 08.5 7.6 19.4 3.0 -09.0 -06.5 127.6 231.5 037.1 10:24 11.8
2008-Jun-20 064.7E 5.7 0.8 08.5 7.6 19.3 3.0 -09.0 -06.5 251.8 323.4 127.7 10:25 11.7
2008-Jun-21 063.8E 5.6 0.8 08.5 7.6 19.3 3.0 -09.0 -06.5 015.9 055.3 218.4 10:25 11.7
2008-Jun-22 062.9E 5.6 0.8 08.5 7.6 19.3 3.0 -08.9 -06.4 140.1 147.1 309.0 10:25 11.7
2008-Jun-23 062.0E 5.5 0.8 08.5 7.6 19.3 3.0 -08.9 -06.4 264.2 239.0 039.7 10:25 11.6
2008-Jun-24 061.2E 5.5 0.8 08.5 7.6 19.2 3.0 -08.9 -06.4 028.4 330.9 130.3 10:26 11.6
2008-Jun-25 060.3E 5.4 0.8 08.5 7.5 19.2 2.9 -08.8 -06.4 152.5 062.7 221.0 10:26 11.6
2008-Jun-26 059.4E 5.4 0.8 08.4 7.5 19.2 2.9 -08.8 -06.4 276.7 154.6 311.7 10:26 11.6
2008-Jun-27 058.6E 5.3 0.8 08.4 7.5 19.1 2.9 -08.7 -06.4 040.9 246.4 042.3 10:27 11.5
2008-Jun-28 057.7E 5.3 0.8 08.4 7.5 19.1 2.9 -08.7 -06.4 165.0 338.3 133.0 10:27 11.5
2008-Jun-29 056.8E 5.2 0.8 08.4 7.5 19.1 2.9 -08.7 -06.3 289.2 070.1 223.6 10:27 11.5
2008-Jun-30 056.0E 5.2 0.8 08.4 7.5 19.1 2.9 -08.6 -06.3 053.3 162.0 314.3 10:28 11.4

2008-Jul-01 055.1E 5.1 0.8 08.4 7.5 19.0 2.8 -08.6 -06.3 177.5 253.9 044.9 10:28 11.4
2008-Jul-02 054.2E 5.1 0.8 08.4 7.5 19.0 2.8 -08.5 -06.3 301.6 345.7 135.6 10:28 11.4
2008-Jul-03 053.4E 5.0 0.8 08.4 7.5 19.0 2.8 -08.5 -06.3 065.8 077.6 226.2 10:29 11.3
2008-Jul-04 052.5E 5.0 0.8 08.4 7.5 19.0 2.8 -08.5 -06.3 189.9 169.4 316.9 10:29 11.3
2008-Jul-05 051.6E 4.9 0.8 08.3 7.4 18.9 2.8 -08.4 -06.3 314.1 261.3 047.5 10:29 11.3
2008-Jul-06 050.8E 4.8 0.8 08.3 7.4 18.9 2.8 -08.4 -06.2 078.2 353.1 138.2 10:30 11.2
2008-Jul-07 049.9E 4.8 0.8 08.3 7.4 18.9 2.7 -08.3 -06.2 202.4 085.0 228.8 10:30 11.2
2008-Jul-08 049.1E 4.7 0.8 08.3 7.4 18.9 2.7 -08.3 -06.2 326.5 176.8 319.5 10:30 11.1
2008-Jul-09 048.2E 4.7 0.8 08.3 7.4 18.8 2.7 -08.2 -06.2 090.7 268.7 050.1 10:31 11.1
2008-Jul-10 047.4E 4.6 0.8 08.3 7.4 18.8 2.7 -08.2 -06.2 214.8 000.6 140.7 10:31 11.1
2008-Jul-11 046.5E 4.5 0.8 08.3 7.4 18.8 2.7 -08.1 -06.2 339.0 092.4 231.4 10:32 11.0
2008-Jul-12 045.7E 4.5 0.8 08.3 7.4 18.8 2.6 -08.1 -06.1 103.1 184.3 322.0 10:32 11.0
2008-Jul-13 044.8E 4.4 0.8 08.3 7.4 18.7 2.6 -08.0 -06.1 227.3 276.1 052.7 10:32 11.0
2008-Jul-14 044.0E 4.3 0.8 08.2 7.4 18.7 2.6 -08.0 -06.1 351.5 008.0 143.3 10:33 10.9
2008-Jul-15 043.1E 4.3 0.8 08.2 7.4 18.7 2.6 -07.9 -06.1 115.6 099.8 234.0 10:33 10.9
2008-Jul-16 042.3E 4.2 0.8 08.2 7.3 18.7 2.6 -07.9 -06.1 239.8 191.7 324.6 10:33 10.8
2008-Jul-17 041.4E 4.1 0.8 08.2 7.3 18.7 2.5 -07.9 -06.1 003.9 283.5 055.3 10:34 10.8
2008-Jul-18 040.6E 4.1 0.8 08.2 7.3 18.6 2.5 -07.8 -06.1 128.1 015.4 145.9 10:34 10.8
2008-Jul-19 039.7E 4.0 0.8 08.2 7.3 18.6 2.5 -07.8 -06.0 252.2 107.2 236.6 10:35 10.7
2008-Jul-20 038.9E 3.9 0.8 08.2 7.3 18.6 2.5 -07.7 -06.0 016.4 199.1 327.2 10:35 10.7
2008-Jul-21 038.0E 3.8 0.8 08.2 7.3 18.6 2.5 -07.7 -06.0 140.5 291.0 057.9 10:35 10.6
2008-Jul-22 037.2E 3.8 0.8 08.2 7.3 18.6 2.5 -07.6 -06.0 264.7 022.8 148.5 10:36 10.6
2008-Jul-23 036.3E 3.7 0.8 08.2 7.3 18.5 2.4 -07.6 -06.0 028.8 114.7 239.2 10:36 10.6
2008-Jul-24 035.5E 3.6 0.8 08.2 7.3 18.5 2.4 -07.5 -06.0 153.0 206.5 329.8 10:37 10.5
2008-Jul-25 034.6E 3.6 0.8 08.2 7.3 18.5 2.4 -07.4 -05.9 277.1 298.4 060.5 10:37 10.5
2008-Jul-26 033.8E 3.5 0.8 08.1 7.3 18.5 2.4 -07.4 -05.9 041.3 030.2 151.1 10:38 10.4
2008-Jul-27 033.0E 3.4 0.8 08.1 7.3 18.5 2.4 -07.3 -05.9 165.4 122.1 241.8 10:38 10.4
2008-Jul-28 032.1E 3.3 0.8 08.1 7.3 18.5 2.3 -07.3 -05.9 289.6 213.9 332.4 10:38 10.3
2008-Jul-29 031.3E 3.2 0.8 08.1 7.3 18.4 2.3 -07.2 -05.9 053.8 305.8 063.1 10:39 10.3
2008-Jul-30 030.4E 3.2 0.8 08.1 7.2 18.4 2.3 -07.2 -05.9 177.9 037.7 153.7 10:39 10.3
2008-Jul-31 029.6E 3.1 0.8 08.1 7.2 18.4 2.3 -07.1 -05.9 302.1 129.5 244.4 10:40 10.2

2008-Aug-01 028.8E 3.0 0.8 08.1 7.2 18.4 2.3 -07.1 -05.8 066.2 221.4 335.0 10:40 10.2
2008-Aug-02 027.9E 2.9 0.8 08.1 7.2 18.4 2.2 -07.0 -05.8 190.4 313.2 065.7 10:41 10.1
2008-Aug-03 027.1E 2.8 0.8 08.1 7.2 18.4 2.2 -07.0 -05.8 314.5 045.1 156.3 10:41 10.1
2008-Aug-04 026.2E 2.8 0.8 08.1 7.2 18.4 2.2 -06.9 -05.8 078.7 137.0 247.0 10:41 10.0
2008-Aug-05 025.4E 2.7 0.8 08.1 7.2 18.3 2.2 -06.9 -05.8 202.9 228.8 337.7 10:42 10.0
2008-Aug-06 024.6E 2.6 0.8 08.1 7.2 18.3 2.2 -06.8 -05.8 327.0 320.7 068.3 10:42 10.0
2008-Aug-07 023.7E 2.5 0.8 08.1 7.2 18.3 2.2 -06.8 -05.7 091.2 052.5 159.0 10:43 09.9
2008-Aug-08 022.9E 2.4 0.8 08.1 7.2 18.3 2.1 -06.7 -05.7 215.3 144.4 249.6 10:43 09.9
2008-Aug-09 022.1E 2.3 0.8 08.1 7.2 18.3 2.1 -06.6 -05.7 339.5 236.3 340.3 10:44 09.8
2008-Aug-10 021.2E 2.3 0.8 08.1 7.2 18.3 2.1 -06.6 -05.7 103.7 328.1 070.9 10:44 09.8
2008-Aug-11 020.4E 2.2 0.8 08.1 7.2 18.3 2.1 -06.5 -05.7 227.8 060.0 161.6 10:45 09.7

2008-Aug-12 019.6E 2.1 0.8 08.0 7.2 18.3 2.1 -06.5 -05.7 352.0 151.9 252.3 10:45 09.7
2008-Aug-13 018.7E 2.0 0.8 08.0 7.2 18.2 2.0 -06.4 -05.7 116.2 243.7 342.9 10:45 09.6
2008-Aug-14 017.9E 1.9 0.8 08.0 7.2 18.2 2.0 -06.4 -05.6 240.3 335.6 073.6 10:46 09.6
2008-Aug-15 017.0E 1.8 0.8 08.0 7.2 18.2 2.0 -06.3 -05.6 004.5 067.5 164.2 10:46 09.5
2008-Aug-16 016.2E 1.7 0.8 08.0 7.2 18.2 2.0 -06.2 -05.6 128.7 159.3 254.9 10:47 09.5
2008-Aug-17 015.4E 1.6 0.8 08.0 7.2 18.2 2.0 -06.2 -05.6 252.8 251.2 345.6 10:47 09.5
2008-Aug-18 014.5E 1.6 0.8 08.0 7.2 18.2 1.9 -06.1 -05.6 017.0 343.1 076.2 10:48 09.4
2008-Aug-19 013.7E 1.5 0.8 08.0 7.2 18.2 1.9 -06.1 -05.6 141.2 074.9 166.9 10:48 09.4
2008-Aug-20 012.9E 1.4 0.8 08.0 7.2 18.2 1.9 -06.0 -05.5 265.3 166.8 257.6 10:49 09.3
2008-Aug-21 012.1E 1.3 0.8 08.0 7.2 18.2 1.9 -06.0 -05.5 029.5 258.7 348.2 10:49 09.3
2008-Aug-22 011.2E 1.2 0.8 08.0 7.2 18.2 1.9 -05.9 -05.5 153.7 350.6 078.9 10:50 09.2
2008-Aug-23 010.4E 1.1 0.8 08.0 7.1 18.2 1.9 -05.8 -05.5 277.9 082.4 169.6 10:50 09.2
2008-Aug-24 009.6E 1.0 0.8 08.0 7.1 18.2 1.8 -05.8 -05.5 042.0 174.3 260.2 10:51 09.1
2008-Aug-25 008.7E 0.9 0.8 08.0 7.1 18.2 1.8 -05.7 -05.5 166.2 266.2 350.9 10:51 09.1
2008-Aug-26 007.9E 0.9 0.8 08.0 7.1 18.2 1.8 -05.7 -05.5 290.4 358.1 081.6 10:51 09.0
2008-Aug-27 007.1E 0.8 0.8 08.0 7.1 18.2 1.8 -05.6 -05.4 054.6 089.9 172.2 10:52 09.0
2008-Aug-28 006.3E 0.7 0.8 08.0 7.1 18.2 1.8 -05.6 -05.4 178.7 181.8 262.9 10:52 08.9
2008-Aug-29 005.5E 0.6 0.8 08.0 7.1 18.2 1.7 -05.5 -05.4 302.9 273.7 353.6 10:53 08.9
2008-Aug-30 004.7E 0.5 0.8 08.0 7.1 18.1 1.7 -05.4 -05.4 067.1 005.6 084.3 10:53 08.8
2008-Aug-31 003.9E 0.4 0.8 08.0 7.1 18.1 1.7 -05.4 -05.4 191.3 097.5 174.9 10:54 08.8

2008-Sep-01 003.2E 0.3 0.8 08.0 7.1 18.1 1.7 -05.3 -05.4 315.5 189.3 265.6 10:54 08.7
2008-Sep-02 002.5E 0.3 0.8 08.0 7.1 18.1 1.7 -05.3 -05.3 079.7 281.2 356.3 10:55 08.7
2008-Sep-03 002.0E 0.2 0.8 08.0 7.1 18.1 1.6 -05.2 -05.3 203.8 013.1 087.0 10:55 08.7
2008-Sep-04 001.7E 0.2 0.8 08.0 7.1 18.1 1.6 -05.2 -05.3 328.0 105.0 177.7 10:56 08.6
2008-Sep-05 001.8W 0.2 0.8 08.0 7.1 18.1 1.6 -05.1 -05.3 092.2 196.9 268.3 10:56 08.6
2008-Sep-06 002.3W 0.2 0.8 08.0 7.1 18.1 1.6 -05.0 -05.3 216.4 288.8 359.0 10:57 08.5
2008-Sep-07 002.9W 0.3 0.8 08.0 7.1 18.1 1.6 -05.0 -05.3 340.6 020.7 089.7 10:57 08.5
2008-Sep-08 003.6W 0.4 0.8 08.0 7.1 18.1 1.6 -04.9 -05.3 104.8 112.6 180.4 10:58 08.4
2008-Sep-09 004.4W 0.5 0.9 08.0 7.1 18.1 1.5 -04.9 -05.2 229.0 204.4 271.1 10:58 08.4
2008-Sep-10 005.2W 0.6 0.9 08.0 7.1 18.1 1.5 -04.8 -05.2 353.2 296.3 001.8 10:59 08.3
2008-Sep-11 006.0W 0.6 0.9 08.0 7.1 18.2 1.5 -04.8 -05.2 117.4 028.2 092.5 10:59 08.3
2008-Sep-12 006.8W 0.7 0.9 08.0 7.1 18.2 1.5 -04.7 -05.2 241.6 120.1 183.1 11:00 08.2
2008-Sep-13 007.6W 0.8 0.9 08.0 7.1 18.2 1.5 -04.6 -05.2 005.8 212.0 273.8 11:00 08.2
2008-Sep-14 008.5W 0.9 0.9 08.0 7.1 18.2 1.5 -04.6 -05.2 130.0 303.9 004.5 11:00 08.1
2008-Sep-15 009.3W 1.0 0.9 08.0 7.1 18.2 1.4 -04.5 -05.1 254.2 035.8 095.2 11:01 08.1
2008-Sep-16 010.1W 1.1 0.9 08.0 7.1 18.2 1.4 -04.5 -05.1 018.4 127.7 185.9 11:01 08.0
2008-Sep-17 011.0W 1.2 0.9 08.0 7.1 18.2 1.4 -04.4 -05.1 142.6 219.6 276.6 11:02 08.0
2008-Sep-18 011.8W 1.3 0.9 08.0 7.2 18.2 1.4 -04.4 -05.1 266.8 311.5 007.3 11:02 07.9
2008-Sep-19 012.6W 1.3 0.9 08.0 7.2 18.2 1.4 -04.3 -05.1 031.0 043.4 098.0 11:03 07.9
2008-Sep-20 013.5W 1.4 0.9 08.0 7.2 18.2 1.3 -04.2 -05.1 155.2 135.4 188.7 11:03 07.9
2008-Sep-21 014.3W 1.5 0.9 08.0 7.2 18.2 1.3 -04.2 -05.1 279.4 227.3 279.4 11:04 07.8
2008-Sep-22 015.2W 1.6 0.9 08.0 7.2 18.2 1.3 -04.1 -05.0 043.6 319.2 010.1 11:04 07.8
2008-Sep-23 016.0W 1.7 0.9 08.0 7.2 18.2 1.3 -04.1 -05.0 167.8 051.1 100.8 11:05 07.7
2008-Sep-24 016.9W 1.8 0.9 08.0 7.2 18.2 1.3 -04.0 -05.0 292.0 143.0 191.5 11:05 07.7
2008-Sep-25 017.7W 1.9 0.9 08.0 7.2 18.2 1.3 -04.0 -05.0 056.2 234.9 282.2 11:06 07.6
2008-Sep-26 018.6W 2.0 0.9 08.0 7.2 18.2 1.2 -03.9 -05.0 180.5 326.8 012.9 11:06 07.6
2008-Sep-27 019.5W 2.0 1.0 08.0 7.2 18.3 1.2 -03.8 -05.0 304.7 058.7 103.7 11:06 07.5
2008-Sep-28 020.3W 2.1 1.0 08.0 7.2 18.3 1.2 -03.8 -04.9 068.9 150.7 194.4 11:07 07.5
2008-Sep-29 021.2W 2.2 1.0 08.1 7.2 18.3 1.2 -03.7 -04.9 193.1 242.6 285.1 11:07 07.4
2008-Sep-30 022.0W 2.3 1.0 08.1 7.2 18.3 1.2 -03.7 -04.9 317.3 334.5 015.8 11:08 07.4

2008-Oct-01 022.9W 2.4 1.0 08.1 7.2 18.3 1.2 -03.6 -04.9 081.6 066.4 106.5 11:08 07.4
2008-Oct-02 023.8W 2.5 1.0 08.1 7.2 18.3 1.1 -03.6 -04.9 205.8 158.3 197.2 11:09 07.3
2008-Oct-03 024.6W 2.6 1.0 08.1 7.2 18.3 1.1 -03.5 -04.9 330.0 250.3 288.0 11:09 07.3
2008-Oct-04 025.5W 2.6 1.0 08.1 7.2 18.3 1.1 -03.5 -04.9 094.2 342.2 018.7 11:10 07.2
2008-Oct-05 026.3W 2.7 1.0 08.1 7.2 18.3 1.1 -03.4 -04.8 218.5 074.1 109.4 11:10 07.2
2008-Oct-06 027.2W 2.8 1.0 08.1 7.2 18.4 1.1 -03.4 -04.8 342.7 166.1 200.1 11:10 07.1
2008-Oct-07 028.1W 2.9 1.0 08.1 7.2 18.4 1.1 -03.3 -04.8 106.9 258.0 290.8 11:11 07.1
2008-Oct-08 029.0W 3.0 1.0 08.1 7.2 18.4 1.0 -03.3 -04.8 231.2 349.9 021.6 11:11 07.0

2008-Oct-09 029.8W 3.0 1.0 08.1 7.2 18.4 1.0 -03.2 -04.8 355.4 081.9 112.3 11:12 07.0
2008-Oct-10 030.7W 3.1 1.0 08.1 7.2 18.4 1.0 -03.2 -04.8 119.6 173.8 203.0 11:12 07.0
2008-Oct-11 031.6W 3.2 1.0 08.1 7.2 18.4 1.0 -03.1 -04.7 243.9 265.7 293.8 11:13 06.9
2008-Oct-12 032.4W 3.3 1.0 08.1 7.3 18.4 1.0 -03.1 -04.7 008.1 357.7 024.5 11:13 06.9
2008-Oct-13 033.3W 3.4 1.0 08.1 7.3 18.5 1.0 -03.0 -04.7 132.4 089.6 115.2 11:13 06.8
2008-Oct-14 034.2W 3.4 1.0 08.1 7.3 18.5 1.0 -03.0 -04.7 256.6 181.6 206.0 11:14 06.8
2008-Oct-15 035.1W 3.5 1.0 08.2 7.3 18.5 0.9 -02.9 -04.7 020.9 273.5 296.7 11:14 06.8
2008-Oct-16 036.0W 3.6 1.0 08.2 7.3 18.5 0.9 -02.9 -04.7 145.1 005.4 027.4 11:15 06.7
2008-Oct-17 036.8W 3.7 1.0 08.2 7.3 18.5 0.9 -02.8 -04.7 269.4 097.4 118.2 11:15 06.7
2008-Oct-18 037.7W 3.7 1.0 08.2 7.3 18.5 0.9 -02.8 -04.6 033.6 189.3 208.9 11:16 06.6
2008-Oct-19 038.6W 3.8 1.0 08.2 7.3 18.6 0.9 -02.7 -04.6 157.9 281.3 299.7 11:16 06.6
2008-Oct-20 039.5W 3.9 1.0 08.2 7.3 18.6 0.9 -02.7 -04.6 282.1 013.2 030.4 11:16 06.6
2008-Oct-21 040.4W 4.0 1.1 08.2 7.3 18.6 0.8 -02.6 -04.6 046.4 105.2 121.2 11:17 06.5
2008-Oct-22 041.3W 4.0 1.1 08.2 7.3 18.6 0.8 -02.6 -04.6 170.6 197.2 211.9 11:17 06.5
2008-Oct-23 042.2W 4.1 1.1 08.2 7.3 18.6 0.8 -02.5 -04.6 294.9 289.1 302.7 11:18 06.4
2008-Oct-24 043.0W 4.2 1.1 08.2 7.3 18.7 0.8 -02.5 -04.5 059.2 021.1 033.4 11:18 06.4
2008-Oct-25 043.9W 4.2 1.1 08.2 7.4 18.7 0.8 -02.4 -04.5 183.4 113.0 124.2 11:18 06.4
2008-Oct-26 044.8W 4.3 1.1 08.2 7.4 18.7 0.8 -02.4 -04.5 307.7 205.0 214.9 11:19 06.3
2008-Oct-27 045.7W 4.4 1.1 08.3 7.4 18.7 0.8 -02.3 -04.5 071.9 297.0 305.7 11:19 06.3
2008-Oct-28 046.6W 4.4 1.1 08.3 7.4 18.8 0.8 -02.3 -04.5 196.2 028.9 036.5 11:19 06.3
2008-Oct-29 047.5W 4.5 1.1 08.3 7.4 18.8 0.7 -02.2 -04.5 320.5 120.9 127.2 11:20 06.2
2008-Oct-30 048.4W 4.6 1.1 08.3 7.4 18.8 0.7 -02.2 -04.5 084.8 212.9 218.0 11:20 06.2
2008-Oct-31 049.3W 4.6 1.1 08.3 7.4 18.8 0.7 -02.2 -04.4 209.0 304.8 308.7 11:21 06.1

2008-Nov-01 050.2W 4.7 1.1 08.3 7.4 18.8 0.7 -02.1 -04.4 333.3 036.8 039.5 11:21 06.1
2008-Nov-02 051.1W 4.7 1.1 08.3 7.4 18.9 0.7 -02.1 -04.4 097.6 128.8 130.3 11:21 06.1
2008-Nov-03 052.0W 4.8 1.1 08.3 7.4 18.9 0.7 -02.0 -04.4 221.9 220.8 221.1 11:22 06.0
2008-Nov-04 053.0W 4.9 1.1 08.3 7.4 18.9 0.7 -02.0 -04.4 346.1 312.7 311.8 11:22 06.0
2008-Nov-05 053.9W 4.9 1.1 08.4 7.5 18.9 0.6 -02.0 -04.4 110.4 044.7 042.6 11:22 06.0
2008-Nov-06 054.8W 5.0 1.1 08.4 7.5 19.0 0.6 -01.9 -04.3 234.7 136.7 133.4 11:23 05.9
2008-Nov-07 055.7W 5.0 1.1 08.4 7.5 19.0 0.6 -01.9 -04.3 359.0 228.7 224.2 11:23 05.9
2008-Nov-08 056.6W 5.1 1.1 08.4 7.5 19.0 0.6 -01.8 -04.3 123.3 320.7 314.9 11:23 05.9
2008-Nov-09 057.5W 5.1 1.1 08.4 7.5 19.1 0.6 -01.8 -04.3 247.6 052.7 045.7 11:24 05.9
2008-Nov-10 058.4W 5.2 1.1 08.4 7.5 19.1 0.6 -01.8 -04.3 011.9 144.6 136.5 11:24 05.8
2008-Nov-11 059.4W 5.2 1.1 08.4 7.5 19.1 0.6 -01.7 -04.3 136.2 236.6 227.3 11:24 05.8
2008-Nov-12 060.3W 5.3 1.1 08.4 7.5 19.1 0.6 -01.7 -04.3 260.5 328.6 318.1 11:25 05.8
2008-Nov-13 061.2W 5.3 1.1 08.4 7.5 19.2 0.6 -01.7 -04.2 024.8 060.6 048.9 11:25 05.7
2008-Nov-14 062.1W 5.4 1.1 08.5 7.5 19.2 0.5 -01.6 -04.2 149.1 152.6 139.6 11:25 05.7
2008-Nov-15 063.1W 5.4 1.1 08.5 7.6 19.2 0.5 -01.6 -04.2 273.4 244.6 230.4 11:25 05.7
2008-Nov-16 064.0W 5.4 1.1 08.5 7.6 19.2 0.5 -01.6 -04.2 037.7 336.6 321.2 11:26 05.7
2008-Nov-17 064.9W 5.5 1.1 08.5 7.6 19.3 0.5 -01.5 -04.2 162.0 068.6 052.0 11:26 05.6
2008-Nov-18 065.9W 5.5 1.1 08.5 7.6 19.3 0.5 -01.5 -04.2 286.3 160.6 142.8 11:26 05.6
2008-Nov-19 066.8W 5.6 1.1 08.5 7.6 19.3 0.5 -01.5 -04.1 050.6 252.6 233.6 11:27 05.6
2008-Nov-20 067.7W 5.6 1.1 08.5 7.6 19.4 0.5 -01.4 -04.1 174.9 344.6 324.4 11:27 05.5
2008-Nov-21 068.7W 5.6 1.1 08.6 7.6 19.4 0.5 -01.4 -04.1 299.2 076.6 055.2 11:27 05.5
2008-Nov-22 069.6W 5.7 1.1 08.6 7.6 19.4 0.5 -01.4 -04.1 063.5 168.7 146.0 11:27 05.5
2008-Nov-23 070.5W 5.7 1.1 08.6 7.7 19.5 0.5 -01.4 -04.1 187.8 260.7 236.8 11:28 05.5
2008-Nov-24 071.5W 5.7 1.1 08.6 7.7 19.5 0.5 -01.3 -04.1 312.1 352.7 327.6 11:28 05.5
2008-Nov-25 072.4W 5.8 1.1 08.6 7.7 19.5 0.4 -01.3 -04.1 076.5 084.7 058.4 11:28 05.4
2008-Nov-26 073.4W 5.8 1.1 08.6 7.7 19.6 0.4 -01.3 -04.0 200.8 176.7 149.3 11:28 05.4
2008-Nov-27 074.3W 5.8 1.1 08.6 7.7 19.6 0.4 -01.2 -04.0 325.1 268.7 240.1 11:29 05.4
2008-Nov-28 075.3W 5.8 1.1 08.6 7.7 19.6 0.4 -01.2 -04.0 089.4 000.7 330.9 11:29 05.4
2008-Nov-29 076.2W 5.9 1.1 08.7 7.7 19.7 0.4 -01.2 -04.0 213.7 092.8 061.7 11:29 05.4
2008-Nov-30 077.2W 5.9 1.1 08.7 7.7 19.7 0.4 -01.2 -04.0 338.1 184.8 152.5 11:29 05.3

2008-Dec-01 078.2W 5.9 1.1 08.7 7.8 19.7 0.4 -01.2 -04.0 102.4 276.8 243.3 11:30 05.3
2008-Dec-02 079.1W 5.9 1.1 08.7 7.8 19.8 0.4 -01.1 -03.9 226.7 008.8 334.2 11:30 05.3
2008-Dec-03 080.1W 6.0 1.1 08.7 7.8 19.8 0.4 -01.1 -03.9 351.1 100.9 065.0 11:30 05.3
2008-Dec-04 081.0W 6.0 1.1 08.7 7.8 19.8 0.4 -01.1 -03.9 115.4 192.9 155.8 11:30 05.3
2008-Dec-05 082.0W 6.0 1.1 08.8 7.8 19.9 0.4 -01.1 -03.9 239.7 284.9 246.6 11:30 05.3

2008-Dec-06	083.0W	6.0	1.1	08.8	7.8	19.9	0.4	-01.1	-03.9	004.1	017.0	337.5	11:30	05.2
2008-Dec-07	083.9W	6.0	1.1	08.8	7.8	19.9	0.4	-01.0	-03.9	128.4	109.0	068.3	11:31	05.2
2008-Dec-08	084.9W	6.0	1.1	08.8	7.9	20.0	0.4	-01.0	-03.8	252.7	201.0	159.1	11:31	05.2
2008-Dec-09	085.9W	6.0	1.1	08.8	7.9	20.0	0.4	-01.0	-03.8	017.1	293.1	249.9	11:31	05.2
2008-Dec-10	086.9W	6.0	1.1	08.8	7.9	20.0	0.3	-01.0	-03.8	141.4	025.1	340.8	11:31	05.2
2008-Dec-11	087.8W	6.0	1.1	08.8	7.9	20.1	0.3	-01.0	-03.8	265.8	117.2	071.6	11:31	05.2
2008-Dec-12	088.8W	6.0	1.1	08.9	7.9	20.1	0.3	-01.0	-03.8	030.1	209.2	162.5	11:31	05.2
2008-Dec-13	089.8W	6.0	1.0	08.9	7.9	20.1	0.3	-00.9	-03.8	154.5	301.2	253.3	11:32	05.2
2008-Dec-14	090.8W	6.0	1.0	08.9	7.9	20.2	0.3	-00.9	-03.8	278.8	033.3	344.1	11:32	05.1
2008-Dec-15	091.8W	6.0	1.0	08.9	7.9	20.2	0.3	-00.9	-03.7	043.2	125.3	075.0	11:32	05.1
2008-Dec-16	092.7W	6.0	1.0	08.9	8.0	20.2	0.3	-00.9	-03.7	167.5	217.4	165.8	11:32	05.1
2008-Dec-17	093.7W	6.0	1.0	08.9	8.0	20.3	0.3	-00.9	-03.7	291.9	309.4	256.7	11:32	05.1
2008-Dec-18	094.7W	6.0	1.0	09.0	8.0	20.3	0.3	-00.9	-03.7	056.2	041.5	347.5	11:32	05.1
2008-Dec-19	095.7W	6.0	1.0	09.0	8.0	20.4	0.3	-00.9	-03.7	180.6	133.6	078.4	11:32	05.1
2008-Dec-20	096.7W	6.0	1.0	09.0	8.0	20.4	0.3	-00.9	-03.7	304.9	225.6	169.2	11:32	05.1
2008-Dec-21	097.7W	6.0	1.0	09.0	8.0	20.4	0.3	-00.9	-03.6	069.3	317.7	260.1	11:32	05.1
2008-Dec-22	098.7W	6.0	1.0	09.0	8.0	20.5	0.3	-00.9	-03.6	193.7	049.7	350.9	11:32	05.1
2008-Dec-23	099.7W	5.9	1.0	09.0	8.1	20.5	0.3	-00.9	-03.6	318.0	141.8	081.8	11:33	05.1
2008-Dec-24	100.7W	5.9	1.0	09.1	8.1	20.5	0.3	-00.9	-03.6	082.4	233.8	172.6	11:33	05.1
2008-Dec-25	101.7W	5.9	1.0	09.1	8.1	20.6	0.3	-00.9	-03.6	206.8	325.9	263.5	11:33	05.1
2008-Dec-26	102.7W	5.9	1.0	09.1	8.1	20.6	0.3	-00.9	-03.6	331.1	058.0	354.3	11:33	05.1
2008-Dec-27	103.7W	5.9	1.0	09.1	8.1	20.7	0.3	-00.9	-03.6	095.5	150.0	085.2	11:33	05.1
2008-Dec-28	104.7W	5.8	1.0	09.1	8.1	20.7	0.3	-00.9	-03.5	219.9	242.1	176.0	11:33	05.1
2008-Dec-29	105.8W	5.8	1.0	09.1	8.2	20.7	0.3	-00.9	-03.5	344.2	334.2	266.9	11:33	05.1
2008-Dec-30	106.8W	5.8	1.0	09.2	8.2	20.8	0.3	-00.9	-03.5	108.6	066.2	357.8	11:33	05.1
2008-Dec-31	107.8W	5.7	1.0	09.2	8.2	20.8	0.3	-00.9	-03.5	233.0	158.3	088.6	11:33	05.1

Credit: Ephemerides generated by WIMP v5.5 by Jeff Beish

Change in Longitude in Intervals of Mean Time for System I

System I (NEBs, EZ, SEBn)

h	°	m	°	m	°
1	35.2	10	5.9	1	0.6
2	70.4	20	11.7	2	1.2
3	105.5	30	17.6	3	1.8
4	140.7	40	23.5	4	2.3
5	175.9	50	29.3	5	2.9
6	211.1	60	35.2	6	3.5
7	246.3			7	4.1
8	281.4			8	4.7
9	316.6			9	5.3
10	351.8			10	5.9

Change in Longitude in Intervals of Mean Time for System II

System II (Areas N or S of System I)

h	°	m	°	m	°
1	33.8	10	5.6	1	0.6
2	67.7	20	11.3	2	1.1
3	101.5	30	16.9	3	1.7
4	135.3	40	22.6	4	2.3
5	169.2	50	28.2	5	2.8
6	203.0	60	33.8	6	3.4
7	236.8			7	3.9
8	270.7			8	4.5
9	304.5			9	5.1
10	338.3			10	5.6

Change in Longitude in Intervals of Mean Time for System III

System III (Origin of Radio Emissions)

h	°	m	°	m	°
1	33.8	10	5.6	1	0.6
2	67.6	20	11.3	2	1.1
3	101.3	30	16.9	3	1.7
4	135.1	40	22.5	4	2.3
5	168.9	50	28.2	5	2.8
6	202.7	60	33.8	6	3.4
7	236.5			7	3.9
8	270.3			8	4.5
9	304.0			9	5.1
10	337.8			10	5.6