

ALPO Solar Section 2012 Solar Ephemeris
Ephemeris Computed by Brad Timerson, A.L.P.O. Solar Section

CALENDAR DATE	JULIAN DATE	ROTATION NUMBER	HELIOGRAPHIC			DIAMETER (arcmin)	RA (HH:MM)	DEC (deg)
			Lo	Bo	Po			
1/ 1/2012	2455927.5	2118	117.74	-2.95	2.33	32.531	18:43.9	-23.07
1/ 2/2012	2455928.5	2118	104.57	-3.06	1.85	32.531	18:48.3	-22.99
1/ 3/2012	2455929.5	2118	91.40	-3.18	1.36	32.531	18:52.7	-22.90
1/ 4/2012	2455930.5	2118	78.22	-3.30	0.88	32.531	18:57.1	-22.80
1/ 5/2012	2455931.5	2118	65.05	-3.41	0.39	32.531	19: 1.5	-22.70
1/ 6/2012	2455932.5	2118	51.88	-3.52	-0.09	32.531	19: 5.9	-22.59
1/ 7/2012	2455933.5	2118	38.70	-3.63	-0.57	32.530	19:10.2	-22.47
1/ 8/2012	2455934.5	2118	25.53	-3.75	-1.06	32.530	19:14.6	-22.35
1/ 9/2012	2455935.5	2118	12.36	-3.85	-1.54	32.529	19:19.0	-22.21
1/10/2012	2455936.5	2119	359.18	-3.96	-2.02	32.528	19:23.3	-22.08
1/11/2012	2455937.5	2119	346.01	-4.07	-2.49	32.527	19:27.7	-21.93
1/12/2012	2455938.5	2119	332.90	-4.18	-2.97	32.526	19:32.0	-21.77
1/13/2012	2455939.5	2119	319.73	-4.28	-3.45	32.524	19:36.4	-21.61
1/14/2012	2455940.5	2119	306.56	-4.38	-3.92	32.523	19:40.7	-21.45
1/15/2012	2455941.5	2119	293.39	-4.49	-4.39	32.521	19:45.0	-21.27
1/16/2012	2455942.5	2119	280.22	-4.59	-4.86	32.519	19:49.3	-21.09
1/17/2012	2455943.5	2119	267.04	-4.69	-5.32	32.517	19:53.6	-20.90
1/18/2012	2455944.5	2119	253.87	-4.78	-5.79	32.514	19:57.8	-20.70
1/19/2012	2455945.5	2119	240.70	-4.88	-6.25	32.512	20: 2.1	-20.50
1/20/2012	2455946.5	2119	227.53	-4.97	-6.71	32.509	20: 6.3	-20.29
1/21/2012	2455947.5	2119	214.36	-5.07	-7.16	32.506	20:10.6	-20.08
1/22/2012	2455948.5	2119	201.19	-5.16	-7.61	32.503	20:14.8	-19.86
1/23/2012	2455949.5	2119	188.02	-5.25	-8.06	32.500	20:19.0	-19.63
1/24/2012	2455950.5	2119	174.85	-5.33	-8.50	32.497	20:23.2	-19.40
1/25/2012	2455951.5	2119	161.68	-5.42	-8.95	32.494	20:27.4	-19.16
1/26/2012	2455952.5	2119	148.51	-5.51	-9.38	32.490	20:31.6	-18.92
1/27/2012	2455953.5	2119	135.34	-5.59	-9.82	32.486	20:35.7	-18.67
1/28/2012	2455954.5	2119	122.17	-5.67	-10.25	32.483	20:39.9	-18.41
1/29/2012	2455955.5	2119	109.00	-5.75	-10.67	32.478	20:44.0	-18.15
1/30/2012	2455956.5	2119	95.83	-5.83	-11.09	32.474	20:48.1	-17.88
1/31/2012	2455957.5	2119	82.66	-5.90	-11.51	32.470	20:52.3	-17.61
2/ 1/2012	2455958.5	2119	69.55	-5.98	-11.92	32.465	20:56.3	-17.33
2/ 2/2012	2455959.5	2119	56.38	-6.05	-12.33	32.461	20:60.4	-17.05
2/ 3/2012	2455960.5	2119	43.21	-6.12	-12.73	32.456	21: 4.5	-16.76
2/ 4/2012	2455961.5	2119	30.04	-6.19	-13.13	32.451	21: 8.5	-16.47
2/ 5/2012	2455962.5	2119	16.87	-6.25	-13.53	32.446	21:12.6	-16.17
2/ 6/2012	2455963.5	2119	3.70	-6.32	-13.92	32.441	21:16.6	-15.87
2/ 7/2012	2455964.5	2120	350.53	-6.38	-14.30	32.436	21:20.6	-15.56

2/ 8/2012	2455965.5	2120	337.36	-6.44	-14.68	32.430	21:24.6	-15.25
2/ 9/2012	2455966.5	2120	324.19	-6.50	-15.05	32.425	21:28.6	-14.93
2/10/2012	2455967.5	2120	311.02	-6.55	-15.42	32.419	21:32.6	-14.61
2/11/2012	2455968.5	2120	297.85	-6.61	-15.78	32.413	21:36.5	-14.29
2/12/2012	2455969.5	2120	284.68	-6.66	-16.14	32.407	21:40.5	-13.96
2/13/2012	2455970.5	2120	271.51	-6.71	-16.50	32.401	21:44.4	-13.63
2/14/2012	2455971.5	2120	258.34	-6.75	-16.84	32.395	21:48.3	-13.30
2/15/2012	2455972.5	2120	245.17	-6.80	-17.19	32.388	21:52.3	-12.96
2/16/2012	2455973.5	2120	232.00	-6.84	-17.52	32.382	21:56.2	-12.61
2/17/2012	2455974.5	2120	218.83	-6.88	-17.85	32.375	21:60.0	-12.27
2/18/2012	2455975.5	2120	205.65	-6.92	-18.18	32.368	22: 3.9	-11.92
2/19/2012	2455976.5	2120	192.48	-6.96	-18.50	32.362	22: 7.8	-11.57
2/20/2012	2455977.5	2120	179.31	-7.00	-18.81	32.355	22:11.6	-11.21
2/21/2012	2455978.5	2120	166.20	-7.03	-19.12	32.348	22:15.5	-10.85
2/22/2012	2455979.5	2120	153.03	-7.06	-19.42	32.340	22:19.3	-10.49
2/23/2012	2455980.5	2120	139.85	-7.09	-19.72	32.333	22:23.1	-10.13
2/24/2012	2455981.5	2120	126.68	-7.11	-20.01	32.326	22:26.9	-9.76
2/25/2012	2455982.5	2120	113.51	-7.14	-20.29	32.318	22:30.7	-9.39
2/26/2012	2455983.5	2120	100.33	-7.16	-20.57	32.311	22:34.5	-9.02
2/27/2012	2455984.5	2120	87.16	-7.18	-20.84	32.303	22:38.3	-8.65
2/28/2012	2455985.5	2120	73.98	-7.19	-21.10	32.295	22:42.1	-8.27
2/29/2012	2455986.5	2120	60.81	-7.21	-21.36	32.288	22:45.8	-7.90
3/ 1/2012	2455987.5	2120	47.63	-7.22	-21.62	32.280	22:49.6	-7.52
3/ 2/2012	2455988.5	2120	34.46	-7.23	-21.86	32.272	22:53.3	-7.14
3/ 3/2012	2455989.5	2120	21.28	-7.24	-22.10	32.264	22:57.1	-6.75
3/ 4/2012	2455990.5	2120	8.11	-7.24	-22.34	32.256	23:0 .8	-6.37
3/ 5/2012	2455991.5	2121	354.93	-7.25	-22.56	32.247	23: 4.5	-5.98
3/ 6/2012	2455992.5	2121	341.75	-7.25	-22.79	32.239	23: 8.2	-5.60
3/ 7/2012	2455993.5	2121	328.57	-7.25	-23.00	32.231	23:11.9	-5.21
3/ 8/2012	2455994.5	2121	315.39	-7.25	-23.21	32.222	23:15.6	-4.82
3/ 9/2012	2455995.5	2121	302.21	-7.24	-23.41	32.214	23:19.3	-4.43
3/10/2012	2455996.5	2121	289.03	-7.23	-23.60	32.205	23:23.0	-4.03
3/11/2012	2455997.5	2121	275.85	-7.22	-23.79	32.197	23:26.7	-3.64
3/12/2012	2455998.5	2121	262.73	-7.21	-23.97	32.188	23:30.4	-3.25
3/13/2012	2455999.5	2121	249.55	-7.20	-24.15	32.179	23:34.0	-2.85
3/14/2012	2456000.5	2121	236.37	-7.18	-24.32	32.170	23:37.7	-2.46
3/15/2012	2456001.5	2121	223.19	-7.16	-24.48	32.162	23:41.4	-2.06
3/16/2012	2456002.5	2121	210.01	-7.14	-24.63	32.153	23:45.0	-1.67
3/17/2012	2456003.5	2121	196.82	-7.12	-24.78	32.144	23:48.7	-1.27
3/18/2012	2456004.5	2121	183.64	-7.09	-24.92	32.135	23:52.4	-0.88
3/19/2012	2456005.5	2121	170.45	-7.07	-25.06	32.126	23:56.0	-0.48
3/20/2012	2456006.5	2121	157.26	-7.04	-25.19	32.117	23:59.7	-0.09
3/21/2012	2456007.5	2121	144.08	-7.01	-25.31	32.108	00: 3.3	0.31

3/22/2012	2456008.5	2121	130.89	-6.97	-25.42	32.099	00: 6.9	0.70
3/23/2012	2456009.5	2121	117.70	-6.94	-25.53	32.090	00:10.6	1.10
3/24/2012	2456010.5	2121	104.51	-6.90	-25.63	32.080	00:14.2	1.49
3/25/2012	2456011.5	2121	91.32	-6.86	-25.72	32.071	00:17.9	1.89
3/26/2012	2456012.5	2121	78.13	-6.82	-25.80	32.062	00:21.5	2.28
3/27/2012	2456013.5	2121	64.94	-6.78	-25.88	32.053	00:25.2	2.67
3/28/2012	2456014.5	2121	51.75	-6.73	-25.95	32.044	00:28.8	3.06
3/29/2012	2456015.5	2121	38.56	-6.68	-26.02	32.034	00:32.4	3.45
3/30/2012	2456016.5	2121	25.37	-6.63	-26.08	32.025	00:36.1	3.84
3/31/2012	2456017.5	2121	12.17	-6.58	-26.13	32.016	00:39.7	4.23
4/ 1/2012	2456018.5	2122	358.98	-6.53	-26.17	32.007	00:43.4	4.62
4/ 2/2012	2456019.5	2122	345.84	-6.47	-26.21	31.998	00:47.0	5.00
4/ 3/2012	2456020.5	2122	332.65	-6.41	-26.23	31.988	00:50.7	5.39
4/ 4/2012	2456021.5	2122	319.45	-6.36	-26.26	31.979	00:54.3	5.77
4/ 5/2012	2456022.5	2122	306.25	-6.29	-26.27	31.970	00:58.0	6.15
4/ 6/2012	2456023.5	2122	293.05	-6.23	-26.28	31.961	01: 1.6	6.53
4/ 7/2012	2456024.5	2122	279.85	-6.17	-26.28	31.952	01: 5.3	6.90
4/ 8/2012	2456025.5	2122	266.65	-6.10	-26.27	31.943	01: 9.0	7.28
4/ 9/2012	2456026.5	2122	253.45	-6.03	-26.25	31.933	01:12.6	7.65
4/10/2012	2456027.5	2122	240.25	-5.96	-26.23	31.924	01:16.3	8.02
4/11/2012	2456028.5	2122	227.05	-5.89	-26.20	31.915	01:20.0	8.39
4/12/2012	2456029.5	2122	213.84	-5.82	-26.16	31.906	01:23.7	8.76
4/13/2012	2456030.5	2122	200.64	-5.74	-26.12	31.897	01:27.4	9.12
4/14/2012	2456031.5	2122	187.43	-5.67	-26.07	31.888	01:31.1	9.48
4/15/2012	2456032.5	2122	174.23	-5.59	-26.01	31.879	01:34.8	9.84
4/16/2012	2456033.5	2122	161.02	-5.51	-25.94	31.870	01:38.5	10.20
4/17/2012	2456034.5	2122	147.81	-5.43	-25.87	31.862	01:42.2	10.55
4/18/2012	2456035.5	2122	134.60	-5.34	-25.79	31.853	01:45.9	10.90
4/19/2012	2456036.5	2122	121.39	-5.26	-25.70	31.844	01:49.6	11.25
4/20/2012	2456037.5	2122	108.18	-5.17	-25.60	31.835	01:53.4	11.59
4/21/2012	2456038.5	2122	94.97	-5.09	-25.50	31.827	01:57.1	11.93
4/22/2012	2456039.5	2122	81.82	-5.00	-25.39	31.818	02:0 .8	12.27
4/23/2012	2456040.5	2122	68.61	-4.91	-25.27	31.809	02: 4.6	12.60
4/24/2012	2456041.5	2122	55.40	-4.82	-25.15	31.801	02: 8.4	12.93
4/25/2012	2456042.5	2122	42.18	-4.72	-25.02	31.793	02:12.1	13.26
4/26/2012	2456043.5	2122	28.97	-4.63	-24.88	31.784	02:15.9	13.58
4/27/2012	2456044.5	2122	15.75	-4.53	-24.73	31.776	02:19.7	13.90
4/28/2012	2456045.5	2122	2.54	-4.44	-24.57	31.768	02:23.5	14.22
4/29/2012	2456046.5	2123	349.32	-4.34	-24.41	31.759	02:27.3	14.53
4/30/2012	2456047.5	2123	336.10	-4.24	-24.24	31.751	02:31.1	14.84
5/ 1/2012	2456048.5	2123	322.88	-4.14	-24.07	31.743	02:34.9	15.14
5/ 2/2012	2456049.5	2123	309.66	-4.04	-23.88	31.735	02:38.7	15.44
5/ 3/2012	2456050.5	2123	296.44	-3.94	-23.69	31.728	02:42.6	15.74

5/ 4/2012	2456051.5	2123	283.22	-3.83	-23.49	31.720	02:46.4	16.03
5/ 5/2012	2456052.5	2123	270.00	-3.73	-23.29	31.712	02:50.3	16.31
5/ 6/2012	2456053.5	2123	256.77	-3.62	-23.08	31.704	02:54.1	16.60
5/ 7/2012	2456054.5	2123	243.55	-3.52	-22.86	31.697	02:58.0	16.87
5/ 8/2012	2456055.5	2123	230.33	-3.41	-22.63	31.689	03: 1.9	17.15
5/ 9/2012	2456056.5	2123	217.10	-3.30	-22.40	31.682	03: 5.8	17.42
5/10/2012	2456057.5	2123	203.88	-3.19	-22.16	31.675	03: 9.7	17.68
5/11/2012	2456058.5	2123	190.65	-3.08	-21.91	31.668	03:13.6	17.94
5/12/2012	2456059.5	2123	177.49	-2.97	-21.66	31.661	03:17.5	18.19
5/13/2012	2456060.5	2123	164.26	-2.86	-21.40	31.654	03:21.5	18.44
5/14/2012	2456061.5	2123	151.03	-2.75	-21.13	31.647	03:25.4	18.68
5/15/2012	2456062.5	2123	137.80	-2.63	-20.86	31.640	03:29.4	18.92
5/16/2012	2456063.5	2123	124.57	-2.52	-20.58	31.633	03:33.3	19.15
5/17/2012	2456064.5	2123	111.34	-2.41	-20.30	31.627	03:37.3	19.38
5/18/2012	2456065.5	2123	98.11	-2.29	-20.00	31.620	03:41.3	19.60
5/19/2012	2456066.5	2123	84.88	-2.17	-19.70	31.614	03:45.2	19.81
5/20/2012	2456067.5	2123	71.65	-2.06	-19.40	31.608	03:49.2	20.03
5/21/2012	2456068.5	2123	58.42	-1.94	-19.09	31.602	03:53.2	20.23
5/22/2012	2456069.5	2123	45.19	-1.82	-18.77	31.596	03:57.3	20.43
5/23/2012	2456070.5	2123	31.95	-1.71	-18.45	31.590	04: 1.3	20.62
5/24/2012	2456071.5	2123	18.72	-1.59	-18.12	31.584	04: 5.3	20.81
5/25/2012	2456072.5	2123	5.49	-1.47	-17.78	31.578	04: 9.4	20.99
5/26/2012	2456073.5	2124	352.25	-1.35	-17.44	31.573	04:13.4	21.16
5/27/2012	2456074.5	2124	339.02	-1.23	-17.10	31.568	04:17.5	21.33
5/28/2012	2456075.5	2124	325.78	-1.11	-16.75	31.562	04:21.5	21.50
5/29/2012	2456076.5	2124	312.55	-0.99	-16.39	31.557	04:25.6	21.65
5/30/2012	2456077.5	2124	299.31	-0.87	-16.03	31.552	04:29.7	21.80
5/31/2012	2456078.5	2124	286.07	-0.75	-15.66	31.547	04:33.7	21.95
6/ 1/2012	2456079.5	2124	272.90	-0.63	-15.29	31.542	04:37.8	22.08
6/ 2/2012	2456080.5	2124	259.66	-0.51	-14.91	31.538	04:41.9	22.22
6/ 3/2012	2456081.5	2124	246.42	-0.39	-14.53	31.533	04:46.0	22.34
6/ 4/2012	2456082.5	2124	233.19	-0.27	-14.14	31.529	04:50.1	22.46
6/ 5/2012	2456083.5	2124	219.95	-0.15	-13.75	31.525	04:54.3	22.57
6/ 6/2012	2456084.5	2124	206.71	-0.03	-13.36	31.520	04:58.4	22.68
6/ 7/2012	2456085.5	2124	193.47	0.09	-12.96	31.516	05: 2.5	22.77
6/ 8/2012	2456086.5	2124	180.23	0.21	-12.56	31.513	05: 6.6	22.87
6/ 9/2012	2456087.5	2124	166.99	0.33	-12.15	31.509	05:10.8	22.95
6/10/2012	2456088.5	2124	153.75	0.45	-11.74	31.505	05:14.9	23.03
6/11/2012	2456089.5	2124	140.51	0.57	-11.33	31.502	05:19.1	23.10
6/12/2012	2456090.5	2124	127.27	0.69	-10.91	31.498	05:23.2	23.17
6/13/2012	2456091.5	2124	114.03	0.81	-10.49	31.495	05:27.3	23.22
6/14/2012	2456092.5	2124	100.79	0.93	-10.06	31.492	05:31.5	23.28
6/15/2012	2456093.5	2124	87.55	1.05	-9.64	31.489	05:35.7	23.32

6/16/2012	2456094.5	2124	74.31	1.17	-9.21	31.487	05:39.8	23.36
6/17/2012	2456095.5	2124	61.07	1.29	-8.77	31.484	05:44.0	23.39
6/18/2012	2456096.5	2124	47.83	1.41	-8.34	31.482	05:48.1	23.41
6/19/2012	2456097.5	2124	34.59	1.53	-7.90	31.479	05:52.3	23.43
6/20/2012	2456098.5	2124	21.35	1.64	-7.46	31.477	05:56.4	23.44
6/21/2012	2456099.5	2124	8.17	1.76	-7.02	31.475	06:0 .6	23.44
6/22/2012	2456100.5	2125	354.93	1.88	-6.58	31.473	06: 4.8	23.44
6/23/2012	2456101.5	2125	341.69	1.99	-6.13	31.471	06: 8.9	23.43
6/24/2012	2456102.5	2125	328.45	2.11	-5.68	31.470	06:13.1	23.41
6/25/2012	2456103.5	2125	315.21	2.22	-5.24	31.468	06:17.2	23.39
6/26/2012	2456104.5	2125	301.97	2.34	-4.79	31.467	06:21.4	23.35
6/27/2012	2456105.5	2125	288.73	2.45	-4.34	31.466	06:25.5	23.32
6/28/2012	2456106.5	2125	275.49	2.56	-3.89	31.465	06:29.7	23.27
6/29/2012	2456107.5	2125	262.25	2.68	-3.43	31.464	06:33.8	23.22
6/30/2012	2456108.5	2125	249.01	2.79	-2.98	31.463	06:37.9	23.16
7/ 1/2012	2456109.5	2125	235.77	2.90	-2.53	31.463	06:42.1	23.10
7/ 2/2012	2456110.5	2125	222.53	3.01	-2.07	31.462	06:46.2	23.03
7/ 3/2012	2456111.5	2125	209.29	3.12	-1.62	31.462	06:50.3	22.95
7/ 4/2012	2456112.5	2125	196.05	3.23	-1.17	31.462	06:54.5	22.86
7/ 5/2012	2456113.5	2125	182.81	3.33	-0.71	31.462	06:58.6	22.77
7/ 6/2012	2456114.5	2125	169.57	3.44	-0.26	31.462	07: 2.7	22.67
7/ 7/2012	2456115.5	2125	156.33	3.55	0.19	31.462	07: 6.8	22.57
7/ 8/2012	2456116.5	2125	143.09	3.65	0.64	31.463	07:10.9	22.46
7/ 9/2012	2456117.5	2125	129.85	3.75	1.09	31.463	07:15.0	22.34
7/10/2012	2456118.5	2125	116.61	3.86	1.54	31.464	07:19.1	22.21
7/11/2012	2456119.5	2125	103.44	3.96	1.99	31.465	07:23.1	22.08
7/12/2012	2456120.5	2125	90.20	4.06	2.44	31.466	07:27.2	21.95
7/13/2012	2456121.5	2125	76.96	4.16	2.89	31.467	07:31.3	21.80
7/14/2012	2456122.5	2125	63.73	4.25	3.33	31.469	07:35.3	21.65
7/15/2012	2456123.5	2125	50.49	4.35	3.77	31.470	07:39.4	21.50
7/16/2012	2456124.5	2125	37.25	4.45	4.22	31.472	07:43.4	21.34
7/17/2012	2456125.5	2125	24.02	4.54	4.66	31.474	07:47.4	21.17
7/18/2012	2456126.5	2125	10.78	4.64	5.09	31.476	07:51.4	20.99
7/19/2012	2456127.5	2126	357.55	4.73	5.53	31.478	07:55.4	20.81
7/20/2012	2456128.5	2126	344.31	4.82	5.96	31.480	07:59.5	20.63
7/21/2012	2456129.5	2126	331.08	4.91	6.39	31.482	08: 3.4	20.44
7/22/2012	2456130.5	2126	317.85	5.00	6.82	31.485	08: 7.4	20.24
7/23/2012	2456131.5	2126	304.61	5.08	7.25	31.487	08:11.4	20.04
7/24/2012	2456132.5	2126	291.38	5.17	7.67	31.490	08:15.4	19.83
7/25/2012	2456133.5	2126	278.15	5.25	8.09	31.493	08:19.3	19.62
7/26/2012	2456134.5	2126	264.91	5.33	8.51	31.496	08:23.3	19.40
7/27/2012	2456135.5	2126	251.68	5.42	8.92	31.499	08:27.2	19.17
7/28/2012	2456136.5	2126	238.45	5.50	9.33	31.503	08:31.1	18.94

7/29/2012	2456137.5	2126	225.22	5.57	9.74	31.506	08:35.0	18.71
7/30/2012	2456138.5	2126	211.99	5.65	10.15	31.510	08:38.9	18.47
7/31/2012	2456139.5	2126	198.82	5.73	10.55	31.514	08:42.8	18.22
8/ 1/2012	2456140.5	2126	185.59	5.80	10.95	31.517	08:46.7	17.97
8/ 2/2012	2456141.5	2126	172.36	5.87	11.34	31.522	08:50.6	17.72
8/ 3/2012	2456142.5	2126	159.14	5.94	11.73	31.526	08:54.5	17.46
8/ 4/2012	2456143.5	2126	145.91	6.01	12.12	31.530	08:58.3	17.20
8/ 5/2012	2456144.5	2126	132.68	6.08	12.50	31.534	09: 2.2	16.93
8/ 6/2012	2456145.5	2126	119.45	6.14	12.88	31.539	09: 6.0	16.65
8/ 7/2012	2456146.5	2126	106.23	6.21	13.25	31.544	09: 9.8	16.37
8/ 8/2012	2456147.5	2126	93.00	6.27	13.63	31.548	09:13.6	16.09
8/ 9/2012	2456148.5	2126	79.78	6.33	13.99	31.553	09:17.4	15.81
8/10/2012	2456149.5	2126	66.55	6.39	14.36	31.558	09:21.2	15.51
8/11/2012	2456150.5	2126	53.33	6.44	14.71	31.564	09:25.0	15.22
8/12/2012	2456151.5	2126	40.11	6.50	15.07	31.569	09:28.8	14.92
8/13/2012	2456152.5	2126	26.88	6.55	15.42	31.574	09:32.6	14.62
8/14/2012	2456153.5	2126	13.66	6.60	15.76	31.580	09:36.3	14.31
8/15/2012	2456154.5	2126	0.44	6.65	16.10	31.586	09:40.1	14.00
8/16/2012	2456155.5	2127	347.22	6.70	16.44	31.591	09:43.8	13.68
8/17/2012	2456156.5	2127	334.00	6.74	16.77	31.597	09:47.5	13.37
8/18/2012	2456157.5	2127	320.78	6.79	17.10	31.603	09:51.3	13.04
8/19/2012	2456158.5	2127	307.56	6.83	17.42	31.610	09:55.0	12.72
8/20/2012	2456159.5	2127	294.34	6.87	17.74	31.616	09:58.7	12.39
8/21/2012	2456160.5	2127	281.18	6.91	18.05	31.622	10: 2.4	12.06
8/22/2012	2456161.5	2127	267.96	6.94	18.36	31.629	10: 6.1	11.72
8/23/2012	2456162.5	2127	254.75	6.98	18.66	31.635	10: 9.8	11.39
8/24/2012	2456163.5	2127	241.53	7.01	18.96	31.642	10:13.4	11.04
8/25/2012	2456164.5	2127	228.31	7.04	19.25	31.649	10:17.1	10.70
8/26/2012	2456165.5	2127	215.10	7.07	19.53	31.656	10:20.8	10.35
8/27/2012	2456166.5	2127	201.88	7.10	19.82	31.663	10:24.4	10.00
8/28/2012	2456167.5	2127	188.67	7.12	20.09	31.670	10:28.1	9.65
8/29/2012	2456168.5	2127	175.46	7.14	20.36	31.677	10:31.7	9.30
8/30/2012	2456169.5	2127	162.24	7.16	20.63	31.684	10:35.4	8.94
8/31/2012	2456170.5	2127	149.03	7.18	20.89	31.691	10:39.0	8.58
9/ 1/2012	2456171.5	2127	135.82	7.20	21.14	31.699	10:42.6	8.22
9/ 2/2012	2456172.5	2127	122.61	7.21	21.39	31.706	10:46.3	7.85
9/ 3/2012	2456173.5	2127	109.40	7.22	21.64	31.714	10:49.9	7.49
9/ 4/2012	2456174.5	2127	96.18	7.23	21.87	31.722	10:53.5	7.12
9/ 5/2012	2456175.5	2127	82.97	7.24	22.10	31.730	10:57.1	6.75
9/ 6/2012	2456176.5	2127	69.77	7.24	22.33	31.738	11:0 .7	6.38
9/ 7/2012	2456177.5	2127	56.56	7.25	22.55	31.745	11: 4.3	6.00
9/ 8/2012	2456178.5	2127	43.35	7.25	22.77	31.754	11: 7.9	5.63
9/ 9/2012	2456179.5	2127	30.14	7.25	22.98	31.762	11:11.5	5.25

9/10/2012	2456180.5	2127	17.00	7.25	23.18	31.770	11:15.1	4.87
9/11/2012	2456181.5	2127	3.79	7.24	23.38	31.778	11:18.7	4.49
9/12/2012	2456182.5	2128	350.58	7.23	23.57	31.786	11:22.3	4.11
9/13/2012	2456183.5	2128	337.38	7.23	23.75	31.795	11:25.9	3.73
9/14/2012	2456184.5	2128	324.17	7.21	23.93	31.803	11:29.5	3.34
9/15/2012	2456185.5	2128	310.97	7.20	24.10	31.812	11:33.1	2.96
9/16/2012	2456186.5	2128	297.76	7.19	24.27	31.820	11:36.7	2.57
9/17/2012	2456187.5	2128	284.56	7.17	24.43	31.829	11:40.2	2.19
9/18/2012	2456188.5	2128	271.35	7.15	24.58	31.838	11:43.8	1.80
9/19/2012	2456189.5	2128	258.15	7.13	24.73	31.846	11:47.4	1.41
9/20/2012	2456190.5	2128	244.95	7.10	24.87	31.855	11:51.0	1.02
9/21/2012	2456191.5	2128	231.75	7.08	25.01	31.864	11:54.6	0.63
9/22/2012	2456192.5	2128	218.55	7.05	25.13	31.873	11:58.2	0.24
9/23/2012	2456193.5	2128	205.34	7.02	25.26	31.882	12: 1.8	-0.15
9/24/2012	2456194.5	2128	192.14	6.99	25.37	31.891	12: 5.4	-0.53
9/25/2012	2456195.5	2128	178.94	6.95	25.48	31.900	12: 9.0	-0.92
9/26/2012	2456196.5	2128	165.74	6.92	25.58	31.909	12:12.6	-1.31
9/27/2012	2456197.5	2128	152.54	6.88	25.68	31.918	12:16.2	-1.70
9/28/2012	2456198.5	2128	139.34	6.84	25.76	31.927	12:19.8	-2.09
9/29/2012	2456199.5	2128	126.15	6.80	25.85	31.936	12:23.4	-2.48
9/30/2012	2456200.5	2128	113.01	6.75	25.92	31.945	12:27.0	-2.87
10/ 1/2012	2456201.5	2128	99.81	6.71	25.99	31.954	12:30.6	-3.26
10/ 2/2012	2456202.5	2128	86.61	6.66	26.05	31.963	12:34.3	-3.65
10/ 3/2012	2456203.5	2128	73.42	6.61	26.10	31.973	12:37.9	-4.04
10/ 4/2012	2456204.5	2128	60.22	6.56	26.15	31.982	12:41.5	-4.42
10/ 5/2012	2456205.5	2128	47.02	6.50	26.19	31.991	12:45.2	-4.81
10/ 6/2012	2456206.5	2128	33.83	6.44	26.22	32.000	12:48.8	-5.19
10/ 7/2012	2456207.5	2128	20.63	6.39	26.24	32.009	12:52.5	-5.58
10/ 8/2012	2456208.5	2128	7.44	6.33	26.26	32.019	12:56.1	-5.96
10/ 9/2012	2456209.5	2129	354.24	6.26	26.27	32.028	12:59.8	-6.34
10/10/2012	2456210.5	2129	341.05	6.20	26.28	32.037	13: 3.5	-6.72
10/11/2012	2456211.5	2129	327.85	6.13	26.27	32.046	13: 7.2	-7.10
10/12/2012	2456212.5	2129	314.66	6.07	26.26	32.055	13:10.9	-7.47
10/13/2012	2456213.5	2129	301.46	6.00	26.24	32.065	13:14.6	-7.85
10/14/2012	2456214.5	2129	288.27	5.93	26.22	32.074	13:18.3	-8.22
10/15/2012	2456215.5	2129	275.08	5.85	26.18	32.083	13:22.0	-8.59
10/16/2012	2456216.5	2129	261.88	5.78	26.14	32.092	13:25.7	-8.96
10/17/2012	2456217.5	2129	248.69	5.70	26.09	32.101	13:29.5	-9.33
10/18/2012	2456218.5	2129	235.50	5.62	26.03	32.110	13:33.2	-9.69
10/19/2012	2456219.5	2129	222.31	5.54	25.97	32.119	13:37.0	-10.05
10/20/2012	2456220.5	2129	209.18	5.46	25.90	32.128	13:40.7	-10.41
10/21/2012	2456221.5	2129	195.99	5.38	25.82	32.137	13:44.5	-10.77
10/22/2012	2456222.5	2129	182.79	5.29	25.73	32.146	13:48.3	-11.12

10/23/2012	2456223.5	2129	169.60	5.20	25.64	32.155	13:52.1	-11.48
10/24/2012	2456224.5	2129	156.41	5.11	25.53	32.164	13:55.9	-11.82
10/25/2012	2456225.5	2129	143.22	5.02	25.42	32.173	13:59.8	-12.17
10/26/2012	2456226.5	2129	130.03	4.93	25.30	32.182	14: 3.6	-12.51
10/27/2012	2456227.5	2129	116.84	4.84	25.18	32.190	14: 7.4	-12.85
10/28/2012	2456228.5	2129	103.65	4.74	25.04	32.199	14:11.3	-13.19
10/29/2012	2456229.5	2129	90.46	4.65	24.90	32.208	14:15.2	-13.52
10/30/2012	2456230.5	2129	77.27	4.55	24.75	32.216	14:19.1	-13.85
10/31/2012	2456231.5	2129	64.08	4.45	24.59	32.225	14:23.0	-14.18
11/ 1/2012	2456232.5	2129	50.89	4.35	24.43	32.233	14:26.9	-14.50
11/ 2/2012	2456233.5	2129	37.71	4.25	24.26	32.241	14:30.8	-14.81
11/ 3/2012	2456234.5	2129	24.52	4.15	24.07	32.250	14:34.7	-15.13
11/ 4/2012	2456235.5	2129	11.33	4.04	23.88	32.258	14:38.7	-15.44
11/ 5/2012	2456236.5	2130	358.14	3.94	23.69	32.266	14:42.7	-15.74
11/ 6/2012	2456237.5	2130	344.95	3.83	23.48	32.274	14:46.6	-16.04
11/ 7/2012	2456238.5	2130	331.77	3.72	23.27	32.282	14:50.6	-16.34
11/ 8/2012	2456239.5	2130	318.58	3.61	23.05	32.290	14:54.6	-16.63
11/ 9/2012	2456240.5	2130	305.46	3.50	22.82	32.298	14:58.7	-16.92
11/10/2012	2456241.5	2130	292.27	3.39	22.59	32.305	15: 2.7	-17.20
11/11/2012	2456242.5	2130	279.08	3.28	22.34	32.313	15: 6.7	-17.48
11/12/2012	2456243.5	2130	265.90	3.16	22.09	32.320	15:10.8	-17.75
11/13/2012	2456244.5	2130	252.71	3.05	21.83	32.328	15:14.9	-18.02
11/14/2012	2456245.5	2130	239.52	2.93	21.57	32.335	15:19.0	-18.28
11/15/2012	2456246.5	2130	226.34	2.81	21.29	32.342	15:23.1	-18.54
11/16/2012	2456247.5	2130	213.15	2.70	21.01	32.350	15:27.2	-18.79
11/17/2012	2456248.5	2130	199.97	2.58	20.72	32.357	15:31.3	-19.04
11/18/2012	2456249.5	2130	186.78	2.46	20.42	32.363	15:35.5	-19.28
11/19/2012	2456250.5	2130	173.60	2.34	20.12	32.370	15:39.7	-19.51
11/20/2012	2456251.5	2130	160.41	2.22	19.81	32.377	15:43.8	-19.74
11/21/2012	2456252.5	2130	147.23	2.09	19.49	32.383	15:48.0	-19.96
11/22/2012	2456253.5	2130	134.04	1.97	19.17	32.390	15:52.2	-20.18
11/23/2012	2456254.5	2130	120.86	1.85	18.84	32.396	15:56.4	-20.39
11/24/2012	2456255.5	2130	107.68	1.73	18.50	32.402	16:0 .7	-20.59
11/25/2012	2456256.5	2130	94.49	1.60	18.15	32.409	16: 4.9	-20.79
11/26/2012	2456257.5	2130	81.31	1.48	17.80	32.415	16: 9.2	-20.98
11/27/2012	2456258.5	2130	68.13	1.35	17.44	32.420	16:13.4	-21.17
11/28/2012	2456259.5	2130	54.94	1.23	17.08	32.426	16:17.7	-21.34
11/29/2012	2456260.5	2130	41.82	1.10	16.70	32.432	16:22.0	-21.51
11/30/2012	2456261.5	2130	28.64	0.97	16.33	32.437	16:26.3	-21.68
12/ 1/2012	2456262.5	2130	15.46	0.85	15.94	32.442	16:30.6	-21.84
12/ 2/2012	2456263.5	2130	2.28	0.72	15.55	32.447	16:34.9	-21.99
12/ 3/2012	2456264.5	2131	349.10	0.59	15.16	32.453	16:39.3	-22.13
12/ 4/2012	2456265.5	2131	335.91	0.46	14.76	32.457	16:43.6	-22.27

12/ 5/2012	2456266.5	2131	322.73	0.34	14.35	32.462	16:48.0	-22.40
12/ 6/2012	2456267.5	2131	309.55	0.21	13.94	32.467	16:52.3	-22.52
12/ 7/2012	2456268.5	2131	296.37	0.08	13.52	32.471	16:56.7	-22.63
12/ 8/2012	2456269.5	2131	283.19	-0.05	13.10	32.475	17: 1.1	-22.74
12/ 9/2012	2456270.5	2131	270.01	-0.18	12.67	32.480	17: 5.4	-22.84
12/10/2012	2456271.5	2131	256.83	-0.30	12.24	32.484	17: 9.8	-22.93
12/11/2012	2456272.5	2131	243.65	-0.43	11.81	32.487	17:14.2	-23.02
12/12/2012	2456273.5	2131	230.47	-0.56	11.37	32.491	17:18.6	-23.09
12/13/2012	2456274.5	2131	217.29	-0.69	10.92	32.495	17:23.0	-23.16
12/14/2012	2456275.5	2131	204.11	-0.82	10.48	32.498	17:27.5	-23.23
12/15/2012	2456276.5	2131	190.93	-0.94	10.02	32.501	17:31.9	-23.28
12/16/2012	2456277.5	2131	177.76	-1.07	9.57	32.504	17:36.3	-23.33
12/17/2012	2456278.5	2131	164.58	-1.20	9.11	32.507	17:40.7	-23.36
12/18/2012	2456279.5	2131	151.40	-1.32	8.65	32.510	17:45.2	-23.40
12/19/2012	2456280.5	2131	138.29	-1.45	8.18	32.513	17:49.6	-23.42
12/20/2012	2456281.5	2131	125.11	-1.58	7.72	32.515	17:54.0	-23.43
12/21/2012	2456282.5	2131	111.93	-1.70	7.25	32.517	17:58.5	-23.44
12/22/2012	2456283.5	2131	98.75	-1.82	6.77	32.519	18: 2.9	-23.44
12/23/2012	2456284.5	2131	85.58	-1.95	6.30	32.521	18: 7.3	-23.43
12/24/2012	2456285.5	2131	72.40	-2.07	5.82	32.523	18:11.8	-23.42
12/25/2012	2456286.5	2131	59.22	-2.20	5.34	32.525	18:16.2	-23.39
12/26/2012	2456287.5	2131	46.05	-2.32	4.86	32.526	18:20.7	-23.36
12/27/2012	2456288.5	2131	32.87	-2.44	4.38	32.527	18:25.1	-23.32
12/28/2012	2456289.5	2131	19.70	-2.56	3.90	32.528	18:29.5	-23.27
12/29/2012	2456290.5	2131	6.52	-2.68	3.42	32.529	18:33.9	-23.22
12/30/2012	2456291.5	2132	353.35	-2.80	2.93	32.530	18:38.4	-23.16
12/31/2012	2456292.5	2132	340.17	-2.92	2.45	32.531	18:42.8	-23.09
1/ 1/2013	2456293.5	2132	327.00	-3.03	1.96	32.531	18:47.2	-23.01
1/ 2/2013	2456294.5	2132	313.82	-3.15	1.48	32.531	18:51.6	-22.92
1/ 3/2013	2456295.5	2132	300.65	-3.27	1.00	32.531	18:56.0	-22.83
1/ 4/2013	2456296.5	2132	287.48	-3.38	0.51	32.531	18:60.4	-22.73
1/ 5/2013	2456297.5	2132	274.30	-3.49	0.03	32.531	19: 4.8	-22.62
1/ 6/2013	2456298.5	2132	261.13	-3.61	-0.46	32.531	19: 9.2	-22.50
1/ 7/2013	2456299.5	2132	247.96	-3.72	-0.94	32.530	19:13.6	-22.38
1/ 8/2013	2456300.5	2132	234.78	-3.83	-1.42	32.529	19:17.9	-22.25
1/ 9/2013	2456301.5	2132	221.67	-3.94	-1.90	32.528	19:22.3	-22.11
1/10/2013	2456302.5	2132	208.50	-4.04	-2.38	32.527	19:26.6	-21.96
1/11/2013	2456303.5	2132	195.33	-4.15	-2.86	32.526	19:31.0	-21.81
1/12/2013	2456304.5	2132	182.16	-4.25	-3.33	32.525	19:35.3	-21.65
1/13/2013	2456305.5	2132	168.99	-4.36	-3.80	32.523	19:39.6	-21.49
1/14/2013	2456306.5	2132	155.81	-4.46	-4.28	32.521	19:43.9	-21.31
1/15/2013	2456307.5	2132	142.64	-4.56	-4.74	32.519	19:48.2	-21.13
1/16/2013	2456308.5	2132	129.47	-4.66	-5.21	32.517	19:52.5	-20.95

1/17/2013	2456309.5	2132	116.30	-4.76	-5.67	32.515	19:56.8	-20.75
1/18/2013	2456310.5	2132	103.13	-4.85	-6.14	32.512	20: 1.1	-20.55
1/19/2013	2456311.5	2132	89.96	-4.95	-6.59	32.510	20: 5.3	-20.35
1/20/2013	2456312.5	2132	76.79	-5.04	-7.05	32.507	20: 9.6	-20.13
1/21/2013	2456313.5	2132	63.62	-5.13	-7.50	32.504	20:13.8	-19.91
1/22/2013	2456314.5	2132	50.45	-5.22	-7.95	32.501	20:18.0	-19.69
1/23/2013	2456315.5	2132	37.28	-5.31	-8.40	32.498	20:22.2	-19.46
1/24/2013	2456316.5	2132	24.11	-5.40	-8.84	32.495	20:26.4	-19.22
1/25/2013	2456317.5	2132	10.94	-5.48	-9.28	32.491	20:30.6	-18.98