

May 2012 Astronomy Calendar by Dave Mitsky

Some information supplied and/or added by Tony Donnangelo

Times are Daylight Saving Time (-4 hrs. U.T.).

Events listed are based on a location of 40°N in the Eastern US and may not be visible in all areas.

Concerning moderate and minor meteor shower activity:

Do not have any high expectations. This general information is to account for why you might be seeing a few more than normal meteors during your observing session.

Lunar light rays may occur prior to or after the predicted time. Initial observations might have occurred after the ray's inception or continued after the observer's session. Rays may last a very short time or for many hours. Obtain further information; send reports (including non-occurrences and miss-calculations), photos, and observations of new rays to:

The Robinson Lunar Observatory: <http://www.lunar-occultations.com/rlo/rlondx.htm>.

- 5/1 Lacus Timoris (sunrise) lunar light ray predicted to occur at 2:40 a.m. Moonset 3:02 a.m.
- 5/1 Mars is 8° north of the Moon at 10:00 a.m.
- 5/3 Schiller C (sunrise) lunar light ray predicted to occur at 12:05 a.m.
- 5/4 **Space Day.**
- 5/4 Asteroid (7) Iris (magnitude 9.5) is at opposition at 8:00 a.m.
- 5/4 The Moon is 1.5° south of the first-magnitude star Spica (Alpha Virginis) at 2:00 p.m.
- 5/4 Saturn is 6° north of the Moon at 6:00 p.m.
- 5/4 May Day or Beltane, a cross-quarter day, occurs at 8:15 p.m.
- 5/5 Mercury is at its greatest heliocentric latitude south today.
- 5/5 Full Moon, known as the Milk or Planting Moon, occurs at 11:35 p.m.
- 5/5 Eta Aquarids meteor shower (major activity - 20/hour) peaks at 3:00 p.m. Duration is from 4/21 to 5/12. Observing and History: http://meteorshoweronline.com/eta_aquarids.html
- 5/6 The Moon is at perigee, subtending 33 arc minutes from a distance of 356,955 kilometers (221,802 miles), at 12:00 a.m.
- 5/6 **Willem de Sitter's** 140th birthday (1872).
- 5/6 May Librids meteor shower (minor activity) peaks on 6/7. Duration is from the 1st to 9th. Observing and History: http://meteorshoweronline.com/showers/may_librids.html
- 5/7 Lame (sunset) lunar light ray predicted to occur at 10:24 p.m. Moonrise at 10:19 p.m.
- 5/8 Eta Lyrids meteor shower (minor activity) peaks from the 8th to 10th. Duration is from the 3rd to 12th. Observing and History: http://meteorshoweronline.com/showers/eta_lyrids.html
- 5/8 Crisium, Mare (sunset) lunar light ray predicted to occur at 9:23 p.m.
- 5/9 Pluto is 0.9° north of the Moon at 1:00 p.m.
- 5/9 Epsilon Arietids meteor shower (daylight activity) peaks on 9/10. Duration is from 25th to 27th. Observing and History: http://meteorshoweronline.com/showers/epsilon_arietids.html
- 5/11 Catherina (sunset) lunar light ray predicted to occur at 5:32 a.m. Sunrise at 5:44 a.m.
- 5/12 Julius Caesar (sunset) lunar light ray predicted to occur at 1:25 a.m. Moonrise 1:26 a.m.
- 5/12 Calippus (sunset) lunar light ray predicted to occur at 3:13 a.m.
- 5/12 Last Quarter Moon occurs at 5:47 p.m.
- 5/12 May Piscids meteor shower (daylight activity) peaks 12/13. Duration is from 4th to 27th. Observing and History: http://meteorshoweronline.com/showers/may_piscids.html
- 5/13 Jupiter is in conjunction with the Sun at 9:00 a.m.
- 5/13 Neptune is 6° south of the Moon at 6:00 p.m.
- 5/13 Southern May Ophiuchids meteor shower (minor activity) peaks from the 13th to 18th. Duration is from 4/21 to 6/4. Observing and History: http://meteorshoweronline.com/showers/smay_ophiuchids.html
- 5/14 The Curtiss Cross, an X-shaped illumination effect located between the craters Parry and Gambart, is predicted to begin at 12:13 p.m.
- 5/14 Omicron Cetids meteor shower (daylight activity) peaks 5/14 to 5/25. Duration is from 7th to 27th. Duration is from 5/7 to 6/9. Observing and History: http://meteorshoweronline.com/showers/omicron_cetids.html
- 5/15 Venus is stationary at 1:00 p.m.
- 5/15 Asteroid (2) Pallas is 0.8° north of the Moon, with an occultation occurring in French Polynesia, New Zealand, and part of Antarctica, at 4:00 p.m.
- 5/16 Uranus is 6° south of the Moon at 1:00 p.m.
- 5/16 May Arietids meteor shower (daylight activity) peaks on 16/17. Duration us from 5/4 to

- 6/6. Observing and History: http://meteorshowersonline.com/showers/may_arietids.html
- 5/17 Epsilon Aquilids meteor shower (minor activity) peaks on 17/18. Duration is 4th to 27th. Observing and History: http://meteorshowersonline.com/showers/epsilon_aquilids.html
- 5/18 Northern May Ophiuchids meteor shower (minor activity) peaks on 18/19. Duration is from 4/8 to 6/16. Observing and History: http://meteorshowersonline.com/showers/nmay_ophiuchids.html
- 5/19 The Moon is at apogee, subtending 29 arc minutes from a distance of 406,448 kilometers (252,555 miles), at 12:00 p.m.
- 5/19 Asteroid (3) Juno (magnitude 10.2) is at opposition at 8:00 p.m.
- 5/20 New Moon (lunation 1106) occurs at 7:47 p.m.
- 5/20 An annular solar eclipse occurs in the eastern Asia, the northern Pacific, and the western United States.
- 5/21 NASA's 3rd Annual Lunabotics Mining Competition held through the 26th at Kennedy Space Center, Florida.
- 5/22 Mercury passes 0.4° from Jupiter.
- 5/22 Venus is 5° north of the Moon at 5:00 p.m.
- 5/24 Mercury is at the ascending node today.
- 5/26 Sacrobosco (sunrise) lunar light ray predicted to occur at 10:43 p.m.
- 5/27 Mercury is in superior conjunction at 7:00 a.m.
- 5/27 The Lunar X (also known as the Werner or Purbach Cross), an X-shaped illumination effect involving various rims and ridges between the craters La Caille, Blanchinus, and Purbach, is predicted to begin at 9:44 p.m.
- 5/27 Alpine Valley/Mt Blanc (sunrise) lunar light ray predicted to occur at 9:57 p.m.
- 5/27 Parrot (sunrise) lunar light ray predicted to occur at 11:11 p.m.
- 5/28 First Quarter Moon occurs at 4:16 p.m.
- 5/28 Chi Scorpiids meteor shower (minor activity) peaks from 5/28 to 6/5. Duration is from 5/6 to 7/2. Observing and History: http://meteorshowersonline.com/showers/chi_omega_scorpiids.html
- 5/28 Parry (sunrise) lunar light ray predicted to occur at 10:24 p.m.
- 5/28 Plato (sunrise) lunar light ray predicted to occur at 11:40 p.m.
- 5/29 Mercury is at perihelion today.
- 5/29 Mars is 7° north of the Moon at 7:00 a.m.
- 5/29 Reinhold (sunrise) lunar light ray predicted to occur at 8:52 p.m.
- 5/29 Cichus A (sunrise) lunar light ray predicted to occur at 8:58 p.m. Sunset at 8:29 p.m.
- 5/29 Kies (sunrise) lunar light ray predicted to occur at 10:39 p.m.
- 5/29 Copernicus (sunrise) lunar light ray predicted to occur at 10:56 p.m.
- 5/29 Lagalla (sunrise) lunar light ray predicted to occur at 11:42 p.m.
- 5/30 Longomontanus (sunrise) lunar light ray predicted to occur at 12:20 a.m.
- 5/30 Palus Epidemiarum (sunrise) lunar light ray predicted to occur at 1:40 a.m. Moonset at 2:04 a.m.
- 5/31 Casatus (sunrise) lunar light ray predicted to occur at 9:06 p.m.

Nicolas Lacaille (1713-1762) and Joseph Lockyer (1836-1920) were born this month.

The peak of the Eta Aquarid meteor shower is severely compromised by moonlight this year. Eta Aquarid meteors are debris from the famous periodic comet 1P/Halley.

The Moon is located in Sextans and is 9.7 days old on May 1 at 0:00 UT. The Moon is at its greatest northern declination on May 22 (+21.7 degrees) and its greatest southern declination on May 8 (-21.7 degrees). Longitudinal libration is at maximum (+7.5 degrees) on May 12 and at minimum (-7.4 degrees) on May 27. Latitudinal libration is at maximum (+6.8 degrees) on May 1 and (+6.9 degrees) on May 28 and at minimum (-6.8 degrees) on May 13. The largest Full Moon of 2012 occurs on May 6. Large tides will take place from May 6 through May 9. A difficult-to-observe occultation of the third-magnitude star Zeta Tauri by a very young Moon takes place in much of the western United States on May 22. See <http://www.lunar-occultations.com/iota/iotandx.htm> for additional information on lunar occultations. Visit <http://saberdoesthestars.wordpress.com/2011/07/05/saber-does-the-stars/> for tips on spotting extreme crescent Moons. Times and dates for the lunar light rays predicted to occur this month are available at <http://www.lunar-occultations.com/rlo/rays/rays.htm>

The Sun is located in Aries on May 1. The first solar eclipse of 2012 takes place on May 20. An annular solar eclipse, the fifty-eighth eclipse of Saros 128, can be seen from eastern Asia, the northern Pacific, and the western United States and a partial eclipse from most of Asia, the Pacific, and the western two-thirds of North America. Greatest eclipse occurs at 23:52:47 UT, at

which time the duration of annularity will be five minutes and forth-six seconds. For further information on this event, consult <http://eclipse.gsfc.nasa.gov/SEmono/ASE2012/ASE2012.html> and pages 50 and 51 of the May issue of *Sky & Telescope*.

Brightness, apparent size, illumination, distance from the Earth in astronomical units, and location data for the planets and Pluto on May 1: Mercury (magnitude -0.1, 6.4", 64% illuminated, 1.04 a.u., Pisces), Venus (magnitude -4.7, 37.4", 27% illuminated, 0.45 a.u., Taurus), Mars (magnitude 0.0, 9.9", 91% illuminated, 0.94 a.u., Leo), Jupiter (magnitude -2.0, 32.9", 100% illuminated, 5.99 a.u., Aries), Saturn (magnitude 0.3, 19.0", 100% illuminated, 8.76 a.u., Virgo), Uranus (magnitude 5.9, 3.4", 100% illuminated, 20.89 a.u., Pisces), Neptune (magnitude 7.9, 2.3", 100% illuminated, 30.36 a.u., Aquarius), and Pluto (magnitude 14.0, 0.1", 100% illuminated, 31.68 a.u., Sagittarius).

In the evening, Venus is the northwest, Mars is the southwest, and Saturn is in the southeast. Mars is in the west and Saturn in the south at midnight. Mercury and Uranus can be found in the east and Neptune in southeast at dawn.

Venus sets at 11:00 p.m. local daylight time. Mars sets at 3:00 a.m. local daylight time. Saturn transits at 11:00 p.m. and sets at 5:00 a.m. local time at midmonth, for observers at latitude 40 degrees north.

Mercury reaches superior conjunction on May 27. This apparition favors southern hemisphere observers. The speedy planet brightens from magnitude -0.1 to magnitude -1.5, as it decreases in apparent size from 6.4 to 5.2 arc seconds.

Venus shines at its maximum brilliance early this month. It sets 3.5 hours after the Sun. Venus continues to decline in phase and ends the month less than one per cent illuminated. However, it swells to almost one arc minute in apparent size by that time. Venus is 0.8 degree south of the second-magnitude star Alnath (Beta Tauri) on May 6. A thin crescent Moon passes five degrees south of Venus on the evening of May 22.

Mars begins the month at magnitude 0.0 but fades to magnitude 0.5 by the end of May. It shrinks 20% in apparent size during the course of the month. The Red Planet is six degrees east of the first-magnitude star Regulus (Alpha Leonis) on May 1 but finishes May almost fifteen degrees to the southeast of Leo's lucida. Mars is more than one astronomical unit from the Earth on May 8.

Jupiter is in conjunction with the Sun on May 13 and, as a result, is not visible this month.

Saturn decreases in brightness from magnitude 0.3 to magnitude 0.5. During May, Saturn's ring plane is inclined by 13 degrees. Its rings subtend 43 arc seconds. As Saturn retrogrades through Virgo, it remains within five degrees of the first-magnitude star Spica for the entire month. Eighth-magnitude Titan is due south of Saturn on the evenings of May 4 and May 20. Saturn's brightest satellite is due north of the planet on the evenings of May 12 and May 28. Prior to midnight on May 14, eleventh-magnitude Iapetus is two arc minutes north of Saturn. A star of similar brightness, GSC 4972:631, is situated between Iapetus and Saturn. For further information on Saturn's satellites, browse <http://www.skyandtelescope.com/observing/objects/javascript/3308506.html>

Uranus rises shortly before 3:00 a.m. local daylight time. It travels from Cetus to Pisces during May and can be found one degree northeast of the sixth-magnitude star 44 Piscium by the end of the month.

Neptune is observable during morning twilight by the middle of May. It lies approximately three degrees south of the fourth-magnitude star Theta Aquarii and two degrees east of the fifth-magnitude star e Aquarii (38 Aquarii). Nereid, Neptune's third-largest satellite, was discovered on May 1, 1949 by Gerard Kuiper.

Pluto lies in northern Sagittarius, less than two degrees east of the open cluster M25. The fourteen-magnitude dwarf planet can be found one half of a degree east of the seventh-magnitude star SAO 161665 on May 1 and just three arc minutes south of that same star on the morning of May 31.

Comet C/2009 P1 (Garradd) dims to tenth-magnitude this month as it passes from Lynx into Cancer. It lies than one degree west of the tenth-magnitude spiral galaxy NGC 2683 on the evenings of May 10 and May 11. On the evenings of May 24 and May 25, the comet passes between the fifth-magnitude stars Rho¹ and Rho² Cancri. Visit <http://cometchasing.skyhound.com/> for additional information on this and other comets visible during May.

Asteroid 5 Astraea shines at magnitude 10.9 as it travels southeastward through Leo and Virgo during May. This small main-belt asteroid passes one half of a degree south of the fifth-magnitude star Iota Leonis on the nights of May 11 and May 12 and one half of a degree northwest of the fifth-magnitude star Omega Virginis on the night of May 31. Data on asteroid occultations taking place in May is available at http://www.asteroidoccultation.com/2012_05_si.htm

During May, nine stars (Capella, Pollux, Procyon, Regulus, Spica, Arcturus, Antares, Vega, and Deneb) and three planets (Venus, Mars, and Saturn) with magnitudes brighter than 1.5 are visible in the early part of the night.

A free star map for May can be downloaded at <http://www.skymaps.com/downloads.html>

The famous eclipsing variable star Algol (Beta Persei) is at a minimum, decreasing in magnitude from 2.1 to 3.4, on May 2, 5, 8, 11, 13, 16, 19, 22, 25, 28, and 31. For more on Algol, see <http://stars.astro.illinois.edu/sow/Algol.html> and <http://www.solstation.com/stars2/algol3.htm>

Comet information for: April 21, 2012 (New Moon).

	Constellation	Rises	Transits	Sets
C/2009 P1 (Garradd)	Cancer	10:04 a.m.	6:04 p.m.	2:02 a.m.
29P/ Schwassmann-Wachmann 1	Virgo	3:52 p.m.	9:17 p.m.	2:41 a.m.
C/2011 F1 (LINEAR)	Draco	circumpolar	11:45 p.m.	
C/2006 S3 (LONEOS)	Ophiuchus	8:58 p.m.	2:15 a.m.	7:32 a.m.
C/2011 UF 305 (LINEAR)	Cepheus	circumpolar	9:16 a.m.	
C/2011 Q2 (McNaught)	Andromeda	2:39 a.m.	11:45 a.m.	1:08 p.m.
C/2011 A3 (Gibbs)	Aquarius	2:42 a.m.	7:55 a.m.	1:08 p.m.

For location (40°16'N 76°45'W) Hummelstown, PA, USA:

May 1:

Astronomical twilight starts: 4:22 a.m.
 Nautical twilight starts: 5:00 a.m.
 Civil twilight starts: 5:36 a.m.
 Sunrise: 6:06 a.m.
 Sunset: 8:03 p.m.
 Civil twilight ends: 8:32 p.m.
 Nautical twilight ends: 9:08 p.m.
 Astronomical twilight ends: 9:47 p.m.
 Maximum altitude of sun: Time 1:04 p.m. Altitude 65.1° Azimuth 180°
 Minimum altitude of sun: Time 1:04 a.m. Altitude -34.5° Azimuth 360°

June 1:

Astronomical twilight starts: 3:39 a.m.
 Nautical twilight starts: 4:26 a.m.
 Civil twilight starts: 5:07 a.m.
 Sunrise: 5:39 a.m.
 Sunset: 8:31 p.m.
 Civil twilight ends: 9:03 p.m.
 Nautical twilight ends: 9:44 p.m.
 Astronomical twilight ends: 10:31 p.m.
 Maximum altitude of sun: Time 1:05 p.m. Altitude 71.9° Azimuth 180°
 Minimum altitude of sun: Time 1:05 a.m. Altitude -27.6° Azimuth 0°

For location (40°16'N 76°45'W) Hummelstown, PA, USA:

May 1 planet information (24 hr. clock):

	R.A.	DEC.	DIA."	MAG.	%ILL.	RISE	TRANSIT	SET
Mercury	01:08	+04°09'	6.4	-0.0	64.6	05:09	11:30	17:42
Venus	05:16	+27°46'	37.9	-4.5	26.8	07:50	15:37	23:29
Mars	10:32	+11°28'	9.9	-0.0	91.4	14:16	20:54	03:41
Jupiter	03:12	+17°01'	32.9	-2.0	100.0	06:32	13:32	20:39
Saturn	13:37	-07°06'	19.0	+0.4	100.0	18:16	23:58	05:33
Uranus	00:25	+01°57'	3.3	+5.9	100.0	04:39	10:45	16:59
Neptune	22:20	-10°59'	2.2	+7.9	100.0	03:19	08:40	14:09
Pluto	18:39	-19°15'	0.1	+14.0	100.0	00:08	05:00	09:57

June 1 planet information (24 hr. clock):

	R.A.	DEC.	DIA."	MAG.	%ILL.	RISE	TRANSIT	SET
Mercury	05:03	+24°01'	5.1	-1.7	97.0	05:52	13:25	20:56
Venus	05:10	+24°14'	57.5	-3.9	0.9	06:02	13:26	21:09
Mars	11:06	+06°59'	7.9	+0.5	88.9	12:57	19:23	01:51
Jupiter	03:42	+18°51'	32.9	-2.0	99.9	04:49	12:00	19:10
Saturn	13:30	-06°32'	18.5	+0.5	99.9	16:02	21:50	03:24
Uranus	00:30	+02°27'	3.3	+5.9	99.9	02:40	08:48	15:02
Neptune	22:21	-10°53'	2.2	+7.9	100.0	01:17	06:39	12:08
Pluto	18:37	-19°19'	0.1	+14.0	100.0	22:03	02:56	07:52

The objects listed below are located between 12:00 and 14:00 hours of right ascension.

Eighty binary and multiple stars for May: 1 Bootis, Struve 1782, Tau Bootis, Struve 1785, Struve 1812 (Bootes); 2 Canum Venaticorum, Struve 1624, Struve 1632, Struve 1642, Struve 1645, 7 Canum Venaticorum, Alpha Canum Venaticorum (Cor Caroli), h2639, Struve 1723, 17 Canum Venaticorum, Otto Struve 261, Struve 1730, Struve 1555, h1234, 25 Canum Venaticorum, Struve 1769, Struve 1783, h1244 (Canes Venatici); 2 Comae Berenices, Struve 1615, Otto Struve 245, Struve 1633, 12 Comae Berenices, Struve 1639, 24 Comae Berenices, Oto Struve 253, Struve 1678, 30 Comae Berenices, Struve 1684, Struve 1685, 35 Comae Berenices, Burnham 112, h220, Struve 1722, Beta Comae Berenices, Burnham 800, Otto Struve 266, Struve 1748 (Coma Berenices); h4481, h4489, Struve 1604, Delta Corvi, Burnham 28, h1218, Struve 1669 (Corvus); H N 69, h4556 (Hydra); Otto Struve 244, Struve 1600, Struve 1695, Zeta Ursae Majoris (Mizar), Struve 1770, Struve 1795, Struve 1831 (Ursa Major); Struve 1616, Struve 1627, 17 Virginis, Struve 1648, Struve 1658, Struve 1677, Struve 1682, Struve 1689, Struve 1690, 44 Virginis, Struve 1719, Theta Virginis, 54 Virginis, Struve 1738, Struve 1740, Struve 1751, 81 Virginis, Struve 1764, Struve 1775, 84 Virginis, Struve 1788 (Virgo)

Notable carbon star for May: SS Virginis

One hundred and sixty-five deep-sky objects for May: NGC 5248 (Bootes); M3, M51, M63, M94, M106, NGC 4111, NGC 4138, NGC 4143, NGC 4151, NGC 4214, NGC 4217, NGC 4244, NGC 4346, NGC 4369, NGC 4449, NGC 4485, NGC 4490, NGC 4618, NGC 4631, NGC 4656, NGC 4868, NGC 5005, NGC 5033, NGC 5297, NGC 5353, NGC 5354, Up 1 (Canes Venatici); Mel 111, M53, M64, M85, M88, M91, M98, M99, M100, NGC 4064, NGC 4150, NGC 4203, NGC 4212, NGC 4251, NGC 4274, NGC 4278, NGC 4293, NGC 4298, NGC 4302, NGC 4314, NGC 4350, NGC 4414, NGC 4419, NGC 4448, NGC 4450, NGC 4459, NGC 4473, NGC 4474, NGC 4494, NGC 4559, NGC 4565, NGC 4651, NGC 4689, NGC 4710, NGC 4725, NGC 4874, NGC 5053 (Coma Berenices); NGC 4027, NGC 4038-9, NGC 4361 (Corvus); M68, M83, NGC 4105, NGC 4106, NGC 5061, NGC 5101, NGC 5135 (Hydra); M40, NGC 4036, NGC 4041, NGC 4051, NGC 4062, NGC 4085, NGC 4088, NGC 4096, NGC 4100, NGC 4144, NGC 4157, NGC 4605, NGC 5308, NGC 5322 (Ursa Major); M49, M58, M59, M60, M61, M84, M86, M87, M89, M90, M104, NGC 4030, NGC 4073, NGC 4168, NGC 4179, NGC 4206, NGC 4215, NGC 4216, NGC 4224, NGC 4235, NGC 4260, NGC 4261, NGC 4267, NGC 4281, NGC 4339, NGC 4343, NGC 4365, NGC 4371, NGC 4378, NGC 4380, NGC 4387, NGC 4388, NGC 4402, NGC 4429, NGC 4435, NGC 4438, NGC 4517, NGC 4526, NGC 4535, NGC 4536, NGC 4546, NGC 4550, NGC 4551, NGC 4567, NGC 4568, NGC 4570, NGC 4593, NGC 4596, NGC 4636, NGC 4638, NGC 4639, NGC 4643, NGC 4654, NGC 4666, NGC 4697, NGC 4698, NGC 4699, NGC 4753, NGC 4754, NGC 4760, NGC 4762, NGC 4866, NGC 4900, NGC 4958, NGC 5044, NGC 5054, NGC 5068, NGC 5077, NGC 5084, NGC 5087, NGC 5147, NGC 5170, NGC 5247, NGC 5363, NGC 5364 (Virgo)

Top ten deep-sky objects for May: M3, M51, M63, M64, M83, M87, M104, M106, NGC 4449, NGC 4565

Top ten deep-sky binocular objects for May: M3, M51, M63, M64, M84, M86, M87, M104, M106, Mel 111

Challenge deep-sky object for May: 3C 273 (Virgo)

May 2012 Jupiter Events

Table created using The Planets 2.02. A FREE program available from <http://www.cpac.org.uk>

Jupiter events are calculated for an observer in Hummelstown, PA, USA.

40°16'N 76°45'W

Times are Daylight Saving Time (-4 hrs. U.T.)

Times may differ by a minute or two to those quoted in the Astronomical Almanac. It's suggested that you start observing a few minutes before the event is scheduled. There may also be a slight deviation from my observing site.

Tue	1	May	2012	19:55	Viewing Resumed	- Sun Sets
Tue	1	May	2012	20:36	Viewing Suspended	- Jupiter Sets
Wed	2	May	2012	19:56	Viewing Resumed	- Sun Sets
Wed	2	May	2012	20:33	Viewing Suspended	- Jupiter Sets
Thu	3	May	2012	19:57	Viewing Resumed	- Sun Sets
Thu	3	May	2012	20:30	Viewing Suspended	- Jupiter Sets
Fri	4	May	2012	19:58	Viewing Resumed	- Sun Sets
Fri	4	May	2012	20:28	Viewing Suspended	- Jupiter Sets
Sat	5	May	2012	19:59	Viewing Resumed	- Sun Sets
Sat	5	May	2012	20:16	Eur: Reappears from Eclipse	
Sat	5	May	2012	20:25	Viewing Suspended	- Jupiter Sets
Sun	6	May	2012	20:00	Viewing Resumed	- Sun Sets
Sun	6	May	2012	20:22	Viewing Suspended	- Jupiter Sets
Mon	7	May	2012	20:01	Viewing Resumed	- Sun Sets
Mon	7	May	2012	20:19	Viewing Suspended	- Jupiter Sets
Tue	8	May	2012	20:02	Viewing Resumed	- Sun Sets
Tue	8	May	2012	20:17	Viewing Suspended	- Jupiter Sets
Wed	9	May	2012	20:03	Viewing Resumed	- Sun Sets
Wed	9	May	2012	20:14	Viewing Suspended	- Jupiter Sets
Thu	10	May	2012	20:04	Viewing Resumed	- Sun Sets
Thu	10	May	2012	20:11	Viewing Suspended	- Jupiter Sets
Fri	11	May	2012	20:05	Viewing Resumed	- Sun Sets
Fri	11	May	2012	20:08	Viewing Suspended	- Jupiter Sets
Tue	15	May	2012	05:53	Viewing Resumed	- Jupiter Rises
Tue	15	May	2012	05:54	Viewing Suspended	- Sun Rises
Wed	16	May	2012	05:50	Viewing Resumed	- Jupiter Rises
Wed	16	May	2012	05:53	Viewing Suspended	- Sun Rises
Thu	17	May	2012	05:47	Viewing Resumed	- Jupiter Rises
Thu	17	May	2012	05:52	Viewing Suspended	- Sun Rises
Fri	18	May	2012	05:44	Viewing Resumed	- Jupiter Rises
Fri	18	May	2012	05:51	Viewing Suspended	- Sun Rises
Sat	19	May	2012	05:40	Viewing Resumed	- Jupiter Rises
Sat	19	May	2012	05:50	Viewing Suspended	- Sun Rises
Sun	20	May	2012	05:37	Viewing Resumed	- Jupiter Rises
Sun	20	May	2012	05:50	Viewing Suspended	- Sun Rises
Mon	21	May	2012	05:34	Viewing Resumed	- Jupiter Rises

Mon 21 May 2012 05:49	Viewing Suspended - Sun Rises
Tue 22 May 2012 05:31	Viewing Resumed - Jupiter Rises
Tue 22 May 2012 05:48	Viewing Suspended - Sun Rises
Wed 23 May 2012 05:28	Viewing Resumed - Jupiter Rises
Wed 23 May 2012 05:47	Viewing Suspended - Sun Rises
Thu 24 May 2012 05:24	Viewing Resumed - Jupiter Rises
Thu 24 May 2012 05:47	Viewing Suspended - Sun Rises
Fri 25 May 2012 05:21	Viewing Resumed - Jupiter Rises
Fri 25 May 2012 05:46	Viewing Suspended - Sun Rises
Sat 26 May 2012 05:18	Viewing Resumed - Jupiter Rises
Sat 26 May 2012 05:46	Viewing Suspended - Sun Rises
Sun 27 May 2012 05:15	Viewing Resumed - Jupiter Rises
Sun 27 May 2012 05:45	Viewing Suspended - Sun Rises
Mon 28 May 2012 05:12	Viewing Resumed - Jupiter Rises
Mon 28 May 2012 05:28	GRS: Crosses Central Meridian
Mon 28 May 2012 05:44	Viewing Suspended - Sun Rises
Tue 29 May 2012 05:09	Viewing Resumed - Jupiter Rises
Tue 29 May 2012 05:44	Viewing Suspended - Sun Rises
Wed 30 May 2012 05:05	Viewing Resumed - Jupiter Rises
Wed 30 May 2012 05:43	Viewing Suspended - Sun Rises
Thu 31 May 2012 05:02	Viewing Resumed - Jupiter Rises
Thu 31 May 2012 05:43	Viewing Suspended - Sun Rises

May 2012 Comets

C/2009 P1 (Garradd)

Date	TT	R.	A.	(2000)	Decl.	Delta	r	Elong.	Phase	m1	m2
2012 05 01		08 50	02.5	+38	01 28	2.1900	2.3114	83.9	25.7	9.3	
2012 05 02		08 49	52.5	+37	32 07	2.2154	2.3206	83.1	25.5	9.4	
2012 05 03		08 49	44.9	+37	03 20	2.2408	2.3298	82.3	25.4	9.4	
2012 05 04		08 49	39.5	+36	35 06	2.2663	2.3391	81.4	25.2	9.5	
2012 05 05		08 49	36.1	+36	07 25	2.2918	2.3483	80.6	25.1	9.5	
2012 05 06		08 49	34.7	+35	40 15	2.3174	2.3576	79.8	24.9	9.5	
2012 05 07		08 49	35.3	+35	13 35	2.3430	2.3669	79.0	24.7	9.6	
2012 05 08		08 49	37.6	+34	47 24	2.3687	2.3762	78.1	24.6	9.6	
2012 05 09		08 49	41.5	+34	21 43	2.3943	2.3855	77.3	24.4	9.7	
2012 05 10		08 49	47.2	+33	56 29	2.4201	2.3948	76.5	24.2	9.7	
2012 05 11		08 49	54.3	+33	31 42	2.4458	2.4042	75.7	24.0	9.8	
2012 05 12		08 50	02.9	+33	07 22	2.4715	2.4135	74.9	23.8	9.8	
2012 05 13		08 50	13.0	+32	43 27	2.4973	2.4229	74.0	23.6	9.8	
2012 05 14		08 50	24.3	+32	19 57	2.5230	2.4323	73.2	23.4	9.9	
2012 05 15		08 50	37.0	+31	56 51	2.5487	2.4417	72.4	23.2	9.9	
2012 05 16		08 50	50.9	+31	34 09	2.5744	2.4511	71.6	23.0	9.9	
2012 05 17		08 51	05.9	+31	11 49	2.6001	2.4605	70.8	22.8	10.0	
2012 05 18		08 51	22.1	+30	49 51	2.6257	2.4700	70.0	22.6	10.0	
2012 05 19		08 51	39.3	+30	28 15	2.6514	2.4794	69.2	22.4	10.1	
2012 05 20		08 51	57.6	+30	06 59	2.6769	2.4889	68.4	22.2	10.1	
2012 05 21		08 52	16.8	+29	46 04	2.7025	2.4984	67.6	22.0	10.1	
2012 05 22		08 52	37.0	+29	25 28	2.7279	2.5079	66.8	21.8	10.2	
2012 05 23		08 52	58.1	+29	05 12	2.7534	2.5174	66.0	21.6	10.2	
2012 05 24		08 53	20.0	+28	45 14	2.7787	2.5269	65.2	21.3	10.2	
2012 05 25		08 53	42.7	+28	25 33	2.8040	2.5364	64.4	21.1	10.3	

2012 05 26	08 54 06.2	+28 06 11	2.8292	2.5459	63.6	20.9	10.3
2012 05 27	08 54 30.5	+27 47 05	2.8544	2.5555	62.8	20.7	10.4
2012 05 28	08 54 55.4	+27 28 15	2.8794	2.5650	62.0	20.4	10.4
2012 05 29	08 55 21.1	+27 09 42	2.9044	2.5746	61.2	20.2	10.4
2012 05 30	08 55 47.3	+26 51 24	2.9293	2.5842	60.4	20.0	10.5
2012 05 31	08 56 14.2	+26 33 21	2.9541	2.5937	59.6	19.7	10.5

29P/Schwassmann-Wachmann 1

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1	m2
2012 05 01	12 09 23.4	-11 13 59	5.4088	6.2581	144.7	5.3	15.6	19.1	
2012 05 02	12 09 06.6	-11 11 33	5.4175	6.2581	143.7	5.5	15.6	19.1	
2012 05 03	12 08 50.2	-11 09 09	5.4265	6.2580	142.7	5.6	15.6	19.1	
2012 05 04	12 08 34.3	-11 06 46	5.4357	6.2580	141.7	5.7	15.6	19.1	
2012 05 05	12 08 19.0	-11 04 25	5.4451	6.2579	140.7	5.9	15.6	19.1	
2012 05 06	12 08 04.2	-11 02 06	5.4548	6.2579	139.7	6.0	15.6	19.1	
2012 05 07	12 07 49.8	-10 59 49	5.4647	6.2578	138.7	6.1	15.7	19.1	
2012 05 08	12 07 36.1	-10 57 34	5.4748	6.2578	137.7	6.2	15.7	19.2	
2012 05 09	12 07 22.8	-10 55 21	5.4851	6.2577	136.7	6.4	15.7	19.2	
2012 05 10	12 07 10.1	-10 53 11	5.4956	6.2577	135.7	6.5	15.7	19.2	
2012 05 11	12 06 58.0	-10 51 02	5.5064	6.2576	134.7	6.6	15.7	19.2	
2012 05 12	12 06 46.3	-10 48 57	5.5173	6.2576	133.7	6.7	15.7	19.2	
2012 05 13	12 06 35.3	-10 46 53	5.5284	6.2575	132.7	6.8	15.7	19.2	
2012 05 14	12 06 24.8	-10 44 52	5.5398	6.2575	131.7	6.9	15.7	19.2	
2012 05 15	12 06 14.9	-10 42 54	5.5513	6.2574	130.7	7.0	15.7	19.2	
2012 05 16	12 06 05.5	-10 40 58	5.5630	6.2574	129.7	7.1	15.7	19.2	
2012 05 17	12 05 56.8	-10 39 05	5.5749	6.2573	128.7	7.2	15.7	19.2	
2012 05 18	12 05 48.6	-10 37 15	5.5870	6.2573	127.7	7.3	15.7	19.3	
2012 05 19	12 05 41.0	-10 35 28	5.5992	6.2572	126.7	7.4	15.7	19.3	
2012 05 20	12 05 33.9	-10 33 43	5.6116	6.2572	125.8	7.5	15.7	19.3	
2012 05 21	12 05 27.5	-10 32 02	5.6242	6.2571	124.8	7.6	15.7	19.3	
2012 05 22	12 05 21.7	-10 30 24	5.6369	6.2570	123.8	7.7	15.7	19.3	
2012 05 23	12 05 16.4	-10 28 48	5.6498	6.2570	122.8	7.8	15.7	19.3	
2012 05 24	12 05 11.8	-10 27 16	5.6629	6.2569	121.9	7.9	15.7	19.3	
2012 05 25	12 05 07.7	-10 25 47	5.6761	6.2569	120.9	8.0	15.7	19.3	
2012 05 26	12 05 04.3	-10 24 22	5.6894	6.2568	119.9	8.1	15.7	19.3	
2012 05 27	12 05 01.4	-10 22 59	5.7029	6.2568	119.0	8.1	15.7	19.3	
2012 05 28	12 04 59.2	-10 21 40	5.7165	6.2567	118.0	8.2	15.7	19.3	
2012 05 29	12 04 57.5	-10 20 25	5.7302	6.2566	117.1	8.3	15.8	19.3	
2012 05 30	12 04 56.4	-10 19 12	5.7441	6.2566	116.1	8.4	15.8	19.4	
2012 05 31	12 04 56.0	-10 18 03	5.7580	6.2565	115.1	8.4	15.8	19.4	

C/2011 F1 (LINEAR)

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1	m2
2012 05 01	15 03 29.5	+56 46 01	3.0420	3.4859	107.9	16.0	12.8		
2012 05 02	15 02 05.1	+56 44 33	3.0354	3.4769	107.7	16.0	12.8		
2012 05 03	15 00 40.2	+56 42 42	3.0288	3.4679	107.5	16.1	12.8		
2012 05 04	14 59 14.9	+56 40 28	3.0224	3.4589	107.3	16.2	12.8		
2012 05 05	14 57 49.3	+56 37 52	3.0161	3.4499	107.1	16.2	12.8		
2012 05 06	14 56 23.5	+56 34 53	3.0098	3.4409	106.9	16.3	12.8		
2012 05 07	14 54 57.5	+56 31 31	3.0037	3.4318	106.7	16.4	12.7		
2012 05 08	14 53 31.5	+56 27 46	2.9976	3.4228	106.4	16.4	12.7		
2012 05 09	14 52 05.5	+56 23 38	2.9917	3.4138	106.2	16.5	12.7		
2012 05 10	14 50 39.6	+56 19 07	2.9858	3.4048	106.0	16.6	12.7		

2012 05 11	14 49 13.8	+56 14 12	2.9801	3.3958	105.7	16.6	12.7
2012 05 12	14 47 48.3	+56 08 53	2.9744	3.3868	105.5	16.7	12.7
2012 05 13	14 46 23.2	+56 03 11	2.9688	3.3779	105.2	16.8	12.6
2012 05 14	14 44 58.5	+55 57 05	2.9634	3.3689	105.0	16.8	12.6
2012 05 15	14 43 34.3	+55 50 36	2.9580	3.3599	104.7	16.9	12.6
2012 05 16	14 42 10.8	+55 43 43	2.9527	3.3509	104.4	17.0	12.6
2012 05 17	14 40 47.9	+55 36 26	2.9475	3.3419	104.1	17.1	12.6
2012 05 18	14 39 25.7	+55 28 45	2.9425	3.3329	103.9	17.1	12.6
2012 05 19	14 38 04.4	+55 20 41	2.9375	3.3239	103.6	17.2	12.6
2012 05 20	14 36 44.0	+55 12 13	2.9326	3.3150	103.3	17.3	12.5
2012 05 21	14 35 24.5	+55 03 22	2.9278	3.3060	103.0	17.4	12.5
2012 05 22	14 34 06.1	+54 54 07	2.9230	3.2970	102.7	17.4	12.5
2012 05 23	14 32 48.9	+54 44 30	2.9184	3.2880	102.4	17.5	12.5
2012 05 24	14 31 32.8	+54 34 29	2.9139	3.2791	102.1	17.6	12.5
2012 05 25	14 30 17.9	+54 24 05	2.9094	3.2701	101.8	17.7	12.5
2012 05 26	14 29 04.4	+54 13 19	2.9051	3.2611	101.5	17.7	12.4
2012 05 27	14 27 52.2	+54 02 10	2.9008	3.2522	101.1	17.8	12.4
2012 05 28	14 26 41.4	+53 50 39	2.8966	3.2432	100.8	17.9	12.4
2012 05 29	14 25 32.1	+53 38 46	2.8925	3.2343	100.5	17.9	12.4
2012 05 30	14 24 24.3	+53 26 32	2.8885	3.2253	100.1	18.0	12.4
2012 05 31	14 23 18.1	+53 13 56	2.8846	3.2164	99.8	18.1	12.4

C/2006 S3 (LONEOS)

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1	m2
2012 05 01	17 33 08.6	-13 10 15	4.3539	5.1322	136.5	7.8	12.3		
2012 05 02	17 31 53.9	-13 09 12	4.3413	5.1324	137.8	7.6	12.3		
2012 05 03	17 30 38.0	-13 08 09	4.3290	5.1326	139.0	7.4	12.3		
2012 05 04	17 29 21.2	-13 07 06	4.3170	5.1328	140.2	7.2	12.3		
2012 05 05	17 28 03.3	-13 06 02	4.3053	5.1330	141.5	7.0	12.3		
2012 05 06	17 26 44.5	-13 04 58	4.2940	5.1332	142.7	6.8	12.3		
2012 05 07	17 25 24.7	-13 03 53	4.2831	5.1334	144.0	6.6	12.3		
2012 05 08	17 24 04.0	-13 02 48	4.2725	5.1337	145.2	6.4	12.3		
2012 05 09	17 22 42.3	-13 01 43	4.2622	5.1339	146.4	6.2	12.3		
2012 05 10	17 21 19.8	-13 00 37	4.2524	5.1342	147.7	6.0	12.2		
2012 05 11	17 19 56.4	-12 59 31	4.2429	5.1345	148.9	5.8	12.2		
2012 05 12	17 18 32.1	-12 58 25	4.2339	5.1347	150.2	5.6	12.2		
2012 05 13	17 17 07.1	-12 57 18	4.2252	5.1350	151.4	5.4	12.2		
2012 05 14	17 15 41.2	-12 56 11	4.2169	5.1353	152.6	5.2	12.2		
2012 05 15	17 14 14.6	-12 55 04	4.2090	5.1357	153.8	5.0	12.2		
2012 05 16	17 12 47.3	-12 53 56	4.2015	5.1360	155.0	4.8	12.2		
2012 05 17	17 11 19.3	-12 52 48	4.1944	5.1363	156.3	4.5	12.2		
2012 05 18	17 09 50.7	-12 51 40	4.1878	5.1367	157.4	4.3	12.2		
2012 05 19	17 08 21.5	-12 50 32	4.1816	5.1370	158.6	4.1	12.2		
2012 05 20	17 06 51.7	-12 49 23	4.1758	5.1374	159.8	3.9	12.2		
2012 05 21	17 05 21.3	-12 48 15	4.1704	5.1378	161.0	3.7	12.2		
2012 05 22	17 03 50.4	-12 47 06	4.1655	5.1382	162.1	3.5	12.2		
2012 05 23	17 02 19.1	-12 45 57	4.1610	5.1386	163.2	3.3	12.2		
2012 05 24	17 00 47.4	-12 44 49	4.1570	5.1390	164.2	3.1	12.2		
2012 05 25	16 59 15.3	-12 43 40	4.1534	5.1394	165.3	2.9	12.2		
2012 05 26	16 57 42.9	-12 42 31	4.1502	5.1399	166.2	2.7	12.2		
2012 05 27	16 56 10.1	-12 41 22	4.1475	5.1403	167.2	2.5	12.2		
2012 05 28	16 54 37.2	-12 40 13	4.1453	5.1408	168.0	2.4	12.2		
2012 05 29	16 53 04.0	-12 39 05	4.1435	5.1413	168.7	2.2	12.2		
2012 05 30	16 51 30.6	-12 37 56	4.1421	5.1418	169.3	2.1	12.2		
2012 05 31	16 49 57.2	-12 36 48	4.1412	5.1423	169.8	2.0	12.2		

C/2011 Q2 (McNaught)

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1	m2
2012 05 01		01 39 31.1	+36 03 37	2.8591	1.9837	24.2	12.0	15.3	
2012 05 02		01 42 19.0	+36 17 45	2.8688	1.9935	24.3	12.0	15.3	
2012 05 03		01 45 06.3	+36 31 39	2.8785	2.0033	24.3	12.0	15.3	
2012 05 04		01 47 53.1	+36 45 19	2.8882	2.0131	24.4	11.9	15.3	
2012 05 05		01 50 39.5	+36 58 45	2.8978	2.0230	24.4	11.9	15.4	
2012 05 06		01 53 25.3	+37 11 57	2.9075	2.0329	24.5	11.9	15.4	
2012 05 07		01 56 10.6	+37 24 55	2.9171	2.0428	24.5	11.8	15.4	
2012 05 08		01 58 55.4	+37 37 40	2.9267	2.0527	24.6	11.8	15.5	
2012 05 09		02 01 39.7	+37 50 12	2.9363	2.0626	24.7	11.8	15.5	
2012 05 10		02 04 23.4	+38 02 31	2.9459	2.0726	24.8	11.8	15.5	
2012 05 11		02 07 06.7	+38 14 36	2.9554	2.0826	24.9	11.8	15.5	
2012 05 12		02 09 49.3	+38 26 29	2.9648	2.0926	24.9	11.7	15.6	
2012 05 13		02 12 31.4	+38 38 09	2.9743	2.1026	25.0	11.7	15.6	
2012 05 14		02 15 12.9	+38 49 36	2.9836	2.1127	25.1	11.7	15.6	
2012 05 15		02 17 53.9	+39 00 51	2.9930	2.1228	25.2	11.7	15.6	
2012 05 16		02 20 34.3	+39 11 54	3.0023	2.1329	25.3	11.7	15.7	
2012 05 17		02 23 14.0	+39 22 45	3.0115	2.1430	25.5	11.7	15.7	
2012 05 18		02 25 53.2	+39 33 23	3.0207	2.1531	25.6	11.7	15.7	
2012 05 19		02 28 31.8	+39 43 50	3.0298	2.1632	25.7	11.7	15.8	
2012 05 20		02 31 09.7	+39 54 06	3.0389	2.1734	25.8	11.7	15.8	
2012 05 21		02 33 47.0	+40 04 09	3.0479	2.1835	26.0	11.7	15.8	
2012 05 22		02 36 23.7	+40 14 02	3.0569	2.1937	26.1	11.7	15.8	
2012 05 23		02 38 59.7	+40 23 43	3.0657	2.2039	26.3	11.7	15.9	
2012 05 24		02 41 35.0	+40 33 13	3.0746	2.2141	26.4	11.7	15.9	
2012 05 25		02 44 09.7	+40 42 32	3.0833	2.2243	26.6	11.8	15.9	
2012 05 26		02 46 43.7	+40 51 40	3.0920	2.2346	26.8	11.8	15.9	
2012 05 27		02 49 17.0	+41 00 38	3.1006	2.2448	26.9	11.8	16.0	
2012 05 28		02 51 49.6	+41 09 25	3.1091	2.2551	27.1	11.8	16.0	
2012 05 29		02 54 21.5	+41 18 02	3.1175	2.2654	27.3	11.9	16.0	
2012 05 30		02 56 52.6	+41 26 29	3.1259	2.2756	27.5	11.9	16.0	
2012 05 31		02 59 23.1	+41 34 46	3.1342	2.2859	27.7	11.9	16.1	

C/2011 UF305 (LINEAR)

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1	m2
2012 05 01		21 38 01.0	+70 46 34	2.4786	2.3435	70.5	23.9	14.7	
2012 05 02		21 41 11.5	+71 28 40	2.4755	2.3388	70.4	23.9	14.7	
2012 05 03		21 44 32.4	+72 10 43	2.4727	2.3342	70.3	24.0	14.6	
2012 05 04		21 48 05.0	+72 52 42	2.4702	2.3296	70.1	24.0	14.6	
2012 05 05		21 51 50.7	+73 34 34	2.4680	2.3250	70.0	24.1	14.6	
2012 05 06		21 55 51.2	+74 16 19	2.4660	2.3205	69.9	24.1	14.6	
2012 05 07		22 00 08.5	+74 57 53	2.4643	2.3161	69.7	24.1	14.6	
2012 05 08		22 04 44.8	+75 39 15	2.4628	2.3117	69.5	24.1	14.6	
2012 05 09		22 09 42.9	+76 20 22	2.4617	2.3073	69.3	24.2	14.6	
2012 05 10		22 15 06.1	+77 01 12	2.4608	2.3030	69.1	24.2	14.6	
2012 05 11		22 20 58.0	+77 41 40	2.4601	2.2987	68.9	24.2	14.6	
2012 05 12		22 27 23.4	+78 21 44	2.4597	2.2945	68.7	24.2	14.6	
2012 05 13		22 34 27.7	+79 01 17	2.4596	2.2904	68.5	24.2	14.6	
2012 05 14		22 42 17.8	+79 40 16	2.4598	2.2862	68.2	24.2	14.5	
2012 05 15		22 51 01.6	+80 18 32	2.4602	2.2822	68.0	24.2	14.5	
2012 05 16		23 00 49.0	+80 55 58	2.4608	2.2781	67.7	24.2	14.5	
2012 05 17		23 11 52.0	+81 32 23	2.4617	2.2742	67.4	24.2	14.5	
2012 05 18		23 24 24.8	+82 07 35	2.4628	2.2703	67.2	24.2	14.5	

2012 05 19	23 38 44.5 +82 41 17	2.4642	2.2664	66.9	24.2	14.5
2012 05 20	23 55 10.6 +83 13 08	2.4658	2.2626	66.6	24.2	14.5
2012 05 21	00 14 04.4 +83 42 44	2.4677	2.2588	66.3	24.2	14.5
2012 05 22	00 35 47.2 +84 09 32	2.4698	2.2551	65.9	24.2	14.5
2012 05 23	01 00 36.1 +84 32 55	2.4721	2.2514	65.6	24.2	14.5
2012 05 24	01 28 37.3 +84 52 10	2.4746	2.2478	65.3	24.2	14.5
2012 05 25	01 59 37.4 +85 06 33	2.4773	2.2443	64.9	24.1	14.5
2012 05 26	02 32 56.4 +85 15 23	2.4802	2.2407	64.6	24.1	14.5
2012 05 27	03 07 26.4 +85 18 15	2.4834	2.2373	64.2	24.1	14.5
2012 05 28	03 41 43.6 +85 15 03	2.4867	2.2339	63.9	24.0	14.5
2012 05 29	04 14 27.0 +85 06 04	2.4903	2.2306	63.5	24.0	14.5
2012 05 30	04 44 36.3 +84 51 55	2.4940	2.2273	63.1	23.9	14.5
2012 05 31	05 11 39.8 +84 33 21	2.4980	2.2240	62.7	23.9	14.5

C/2011 A3 (Gibbs)

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1	m2
2012 05 01	22 21 08.7 -13 54 07	2.9905	2.7899	68.8	19.7	16.8			
2012 05 02	22 22 29.7 -13 54 35	2.9842	2.7957	69.5	19.7	16.8			
2012 05 03	22 23 49.8 -13 55 08	2.9778	2.8016	70.2	19.8	16.8			
2012 05 04	22 25 09.2 -13 55 46	2.9714	2.8074	70.9	19.8	16.8			
2012 05 05	22 26 27.7 -13 56 31	2.9650	2.8133	71.5	19.9	16.9			
2012 05 06	22 27 45.5 -13 57 20	2.9586	2.8193	72.2	19.9	16.9			
2012 05 07	22 29 02.4 -13 58 16	2.9521	2.8252	72.9	20.0	16.9			
2012 05 08	22 30 18.6 -13 59 18	2.9456	2.8312	73.6	20.0	16.9			
2012 05 09	22 31 33.9 -14 00 25	2.9390	2.8372	74.3	20.0	16.9			
2012 05 10	22 32 48.3 -14 01 39	2.9324	2.8432	75.0	20.1	16.9			
2012 05 11	22 34 02.0 -14 02 59	2.9258	2.8493	75.7	20.1	16.9			
2012 05 12	22 35 14.8 -14 04 25	2.9192	2.8553	76.4	20.1	16.9			
2012 05 13	22 36 26.7 -14 05 58	2.9125	2.8614	77.1	20.1	16.9			
2012 05 14	22 37 37.8 -14 07 37	2.9058	2.8675	77.8	20.2	16.9			
2012 05 15	22 38 48.0 -14 09 24	2.8991	2.8737	78.5	20.2	16.9			
2012 05 16	22 39 57.3 -14 11 17	2.8923	2.8798	79.2	20.2	16.9			
2012 05 17	22 41 05.7 -14 13 17	2.8856	2.8860	79.9	20.2	16.9			
2012 05 18	22 42 13.3 -14 15 24	2.8788	2.8922	80.7	20.2	16.9			
2012 05 19	22 43 19.9 -14 17 38	2.8720	2.8984	81.4	20.2	16.9			
2012 05 20	22 44 25.6 -14 19 59	2.8652	2.9047	82.1	20.2	16.9			
2012 05 21	22 45 30.4 -14 22 28	2.8583	2.9109	82.8	20.2	16.9			
2012 05 22	22 46 34.3 -14 25 04	2.8515	2.9172	83.6	20.2	16.9			
2012 05 23	22 47 37.2 -14 27 48	2.8447	2.9235	84.3	20.2	16.9			
2012 05 24	22 48 39.2 -14 30 40	2.8378	2.9299	85.1	20.1	16.9			
2012 05 25	22 49 40.2 -14 33 39	2.8310	2.9362	85.8	20.1	16.9			
2012 05 26	22 50 40.3 -14 36 45	2.8242	2.9426	86.6	20.1	16.9			
2012 05 27	22 51 39.4 -14 40 00	2.8173	2.9490	87.3	20.1	16.9			
2012 05 28	22 52 37.5 -14 43 22	2.8105	2.9554	88.1	20.0	17.0			
2012 05 29	22 53 34.7 -14 46 53	2.8037	2.9618	88.8	20.0	17.0			
2012 05 30	22 54 30.8 -14 50 31	2.7969	2.9683	89.6	20.0	17.0			
2012 05 31	22 55 26.0 -14 54 18	2.7901	2.9748	90.4	19.9	17.0			