

April 2008 Calendar by Dave Mitsky
Some information supplied and/or added by Tony Donnangelo

All times are Eastern 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>.

- 4/1 Asteroid (22) Kalliope (magnitude 10.9) is at opposition.
- 4/1 Pluto is stationary at 8:00 p.m.
- 4/2 Mercury is 1.6° south of Uranus at 3:00 a.m.
- 4/2 Neptune is 0.002° south of the Moon - an occultation takes place in the Middle East, central Africa, and central South America - at 5:00 a.m.
- 4/2 14th Annual Stargaze Star Party being held through the 6th near Queen Anne, Maryland.
- 4/4 Uranus is 3° south of the Moon at 6:00 a.m.
- 4/4 15th Annual Great Moonbuggy Race being held through the 5th in Huntsville, Alabama.
- 4/4 Venus is 5° south of the Moon at 9:00 p.m.
- 4/5 Mars is at its greatest heliocentric latitude north today.
- 4/5 A double Galilean shadow transit begins at 2:58 a.m.
- 4/5 Delta Pavonidis meteor shower (minor activity) peaks on 5/6. Duration is from 3/21 to 4/8.
- 4/5 New Moon (lunation 1055) occurs at 11:55 p.m.
- 4/6 Asteroid (7) Iris (magnitude 9.4) is at opposition.
- 4/6 A minimum lunar libration of 6.2° occurs at 3:00 a.m.
- 4/7 Asteroid (88) Thisbe (magnitude 11.0) is at opposition.
- 4/7 24th National Space Symposium being held through the 10th in Colorado Springs, Colorado.
- 4/7 Workshop on "Transits - Exoplanet and Stellar Astrophysics" being held through the 11th in Pasadena, California.
- 4/7 The Moon is at perigee, subtending 33'06" from a distance of 361,080 km (224,365 miles), at 3:30 p.m.
- 4/7 April Virginids meteor shower (minor activity) peaks on 7/8. Duration is from 1st to 16th.
- 4/7 Alpha Virginis meteor shower (minor activity) peaks through the 18th. Duration is from 3/10 through 5/6.
- 4/8 Asteroid (5) Astrea (magnitude 9.5) is at opposition.
- 4/8 Comet C/2006 Q1 (McNaught) is at closest approach to Earth at 2.240 A.U.
- 4/8 The Moon is 1.0° north of the open cluster M45 (the Pleiades) in Taurus at 10:00 p.m.
- 4/10 Comet C/2007 B2 (Skiff) is at closest approach to Earth at 2.287 A.U.
- 4/10 Jupiter reaches western quadrature today.
- 4/11 A maximum lunar libration of 7.1° occurs at 2:00 a.m.
- 4/11 The lunar illumination event known as the Purbach Cross or the Werner X begins to appear at 8:00 p.m.
- 4/11 Gemma Frisius (sunrise) lunar light ray predicted to occur at 11:22 p.m.
- 4/11 Sacrobosco (sunrise) lunar light ray predicted to occur at 11:48 p.m.
- 4/12 Mars is 1.2° south of the Moon - an occultation takes place in northern Scandinavia, Iceland, Greenland, and northeastern Canada - at 2:00 a.m.
- 4/12 Meton (sunrise) lunar light ray predicted to occur at 1:42 a.m. Moonset at 2:31 a.m.
- 4/12 First Quarter Moon occurs at 2:32 p.m.
- 4/12 Yuri's Night 2008. The world space party.
- 4/12 Alpine Valley/Mt Blanc (sunrise) lunar light ray predicted to occur at 7:14 p.m.
- 4/12 Parrot (sunrise) lunar light ray predicted to occur at 11:24 p.m.
- 4/13 Goldschmidt (sunrise) lunar light ray predicted to occur at 2:23 a.m. Moonset at 3:12 a.m.
- 4/13 Reaumur (sunrise) lunar light ray predicted to occur at 3:05 a.m. Moonset at 3:12 a.m.

4/13 Maginus (sunrise) lunar light ray predicted to occur at 8:54 p.m.
4/13 The Moon is 0.1° north of the bright open cluster M44 (the Beehive Cluster or Praesepe) in Cancer at 4:00 p.m.
4/13 Plato (sunrise) lunar light ray predicted to occur at 8:20 p.m.
4/13 Epigenes (sunrise) lunar light ray predicted to occur at 10:01 p.m.
4/14 Lecture on "Voyager's Journey to the Edge of Interstellar Space" being held in Boulder, Co.
4/14 Gamma Virginids meteor shower (minor activity) peaks on 14/15. Duration is from 5th through 21st.
4/14 Reinhold (sunrise) lunar light ray predicted to occur at 8:52 p.m.
4/14 Copernicus (sunrise) lunar light ray predicted to occur at 10:34 p.m.
4/14 Cichus A (sunrise) lunar light ray predicted to occur at 11:02 p.m.
4/15 Asteroid (41) Daphne (magnitude 9.3) is at opposition.
4/15 Kies (sunrise) lunar light ray predicted to occur at 12:08 a.m.
4/15 Lagalla (sunrise) lunar light ray predicted to occur at 2:37 a.m.
4/15 Longomontanus (sunrise) lunar light ray predicted to occur at 3:47 a.m. Moonset at 4:11 a.m.
4/15 The Moon is 0.9° south of the first magnitude star Regulus (Alpha Leonis) - an occultation takes place in Madagascar and part of Antarctica - at 10:00 a.m.
4/15 Lecture on "Extraterrestrials in Our Future? An Astronomer's View" being held in, Fullerton, California.
4/15 2008 Astrobiology Science Conference (AbSciCon 2008) being held through the 17th in Santa Clara, California.
4/15 Saturn is 3° north of the Moon at 2:00 p.m.
4/16 Comet C/2008 C1 (Chen-Gao) reaches perihelion at 1.262 A.U.
4/16 Scheiner (sunrise) lunar light ray predicted to occur at 1:10 a.m.
4/16 Mercury is in superior conjunction with the Sun at 3:00 a.m.
4/16 A minimum lunar libration of 6.0° occurs at 6:00 p.m.
4/17 Jupiter is at the descending node today.
4/17 Casatus (sunrise) lunar light ray predicted to occur at 1:03 a.m.
4/17 Mersenius P (sunrise) lunar light ray predicted to occur at 3:05 a.m.
4/17 Clausius (sunrise) lunar light ray predicted to occur at 3:06 a.m.
4/17 Librids meteor shower (minor activity) peaks on 17/18 . Duration is from 3/11 through 5/5.
4/17 Babbage (sunrise) lunar light ray predicted to occur at 8:50 p.m.
4/18 Asteroid (3) Juno is stationary today.
4/18 Vieta (sunrise) lunar light ray predicted to occur at 2:08 a.m.
4/18 Phocylides (sunrise) lunar light ray predicted to occur at 11:16 p.m.
4/19 April Ursids meteor shower (minor activity) peaks on 19/20. Duration is from 3/18 to 5/9.
4/20 Mercury is at ascending node.
4/20 Full Moon, known as the Egg or Grass Moon, occurs at 6:25 a.m.
4/22 Lyrids meteor shower (major activity - 20/hr.) peaks at 12:00 a.m. Duration is 16th to 25th.
4/22 A maximum lunar libration of 6.6° occurs at 5:00 a.m.
4/23 Endymion (sunset) lunar light ray predicted to occur at 2:58 a.m.
4/23 The Moon is at apogee, subtending $29'26''$ from a distance of 405,943 km (252,241 miles.), at 5:34 a.m.
4/23 The Moon is 0.3° south of the first magnitude star Antares (Alpha Scorpii) - an occultation takes place in Polynesia, New Zealand, and southern Australia - at 1:00 p.m.
4/23 Pi Puppis meteor shower (minor activity) peaks on 23/24. Duration is from 18th to 25th.
4/24 Mercury is at perihelion today.
4/26 Aristoteles (sunset) lunar light ray predicted to occur at 4:03 a.m.
4/26 A double Galilean shadow transit begins at 4:29 p.m.
4/27 Jupiter is 3° north of the Moon at 1:00 a.m.
4/27 Fernelius (sunset) lunar light ray predicted to occur at 4:11 a.m.
4/28 2008 Phenomenology Symposium being held through the 30th in Madison, Wisconsin.
4/28 Last Quarter Moon occurs at 10:12 a.m.
4/28 Mars is 5° south of the first magnitude star Pollux (Beta Geminorum) at 3:00 p.m.
4/29 ASTRO 2008 Conference on "Harnessing Space to Address Global Issues" being held through May 1st in Montreal, Canada.
4/29 Planetary Dunes Workshop on "A Record of Climate Change" being held through May 2nd in Alamogordo, New Mexico.

4/29 Asteroid (7934) Sinatra is at closest approach to Earth at 1.504 A.U. Did you know "old blue eyes" had an asteroid named after him?
4/29 Neptune is 0.3° south of the Moon - an occultation takes place in Hawaii, northern Australasia, and most of Indonesia - at 3:00 p.m.

The zodiacal light is visible from a dark site in the early evening during the first week of April.

On the morning of April 22, the peak of the Lyrid meteor shower is compromised by the light from a waning gibbous Moon. They are the longest known meteor shower, dating back at least 2600 years. There can be an outburst of about 100 meteors an hour for no known reason. Further history can be read at: <http://meteorshoweronline.com/lyrids.html> At the end of the month, some early Eta Aquarid meteors may be visible.

At approximately 9:45 p.m. EDT on April 8, the three-day-old crescent Moon occults some of the stars (Pleiads) in the northern portion of the Pleiades. The occultation is visible from eastern Canada and the northeastern United States. The Moon is 24.3 days old at 0:00 UT on April 1. It's at its greatest southern declination of -28 degrees on April 24 and its greatest northern declination of +28 degrees on April 10.

The Sun is located in Pisces on April 1. The first photograph of the Sun was taken on April 2, 1845.

During April, Mercury is located in the west at month's end, Mars is in the southwest, and Saturn is in the southeast during the evening. Look for Mars in the west and Saturn in the southwest at midnight. In the morning, Jupiter can be seen in the southeast and Uranus in the east.

Mercury is not visible until the end of April for northern hemisphere observers. It can be seen low in the west-northwest during evening twilight.

On April 1, Venus rises little more than a half hour before the Sun for observers in the Northern Hemisphere. By mid-month, Venus rises about 30 minutes after the Sun and its current morning apparition comes to an end.

Mars shrinks from 7 to 6 arc seconds during April and decreases in magnitude from 0.8 to 1.2. It is one degree east of third magnitude Epsilon Geminorum as the month begins and passes five degrees south of equally bright Pollux by April 28. In the middle of April, Mars sets around 2:00 a.m. EDT.

The king of the planets rises about 3:00 a.m. EDT on April 1, at about the same time that Mars sets on April 15, and around 1:00 a.m. EDT on April 30. It brightens by 0.2 magnitude and grows in apparent size from 37 to 41 arc seconds during this time. Jupiter is 90 degrees to the west of the Sun on April 10, a condition known as western quadrature. As a result, Jupiter's shadow falls well to the west of the planet. Click on http://skyandtelescope.com/observing/objects/planets/article_107_1.asp to determine transits of the central meridian by the Great Red Spot. Data on the Galilean satellites is available at <http://skytonight.com/observing/objects/javascript/3307071>

At the middle of the month, Saturn culminates at approximately 10:00 p.m. and sets in the west-northwest prior to 5:00 a.m. EDT. Saturn's rings open to 9.9 degrees by late April. The ring tilt angle then begins to decrease as the rings become increasingly edge-on. Saturn continues its westward or retrograde motion towards Regulus by almost a degree during April. Eighth magnitude Titan, Saturn's brightest satellite, passes north of the planet on the nights of April 10 and April 26 and south of Saturn on the nights of April 2 and April 18. Two-faced Iapetus is due east or west of Saturn by the listed separations on the following dates: April 2 (35" east), April 8 (40" east), April 16 (33" east), April 20 (25" east), April 24 (14" east), April 28 (2" east), and April 30 (4" west). On the night of April 28, Iapetus is positioned to the immediate south of Saturn. For further information on Saturn's satellites, browse <http://skytonight.com/observing/objects/javascript/3308506.html>

Uranus remains a very difficult morning target this month.

Neptune lies in northeastern Capricornus, 2.4 degrees north of the third magnitude star Delta Capricorni and is also too low in the sky to observe readily.

The dwarf planet Pluto is located in northwestern Sagittarius.

Comet 46P/Wirtanen continues to fade as it passes through Auriga and into Gemini. It shines at only 12th magnitude when it nears the fourth magnitude star Theta Geminorum in mid-April.

The ninth magnitude asteroid 5 Astraea heads on a northwesterly course through the star-sparse constellation of Virgo this month. It does pass

For location (40°16'N 76°45'W) Hummelstown, PA, USA:
April 1 planet information (24 hr. clock):

	R.A.	DEC.	DIA."	MAG.	%ILL.	RISE	TRANSIT	SET
Mercury	23:53	-03°08'	5.2	-0.6	89.3	06:21	12:14	18:05
Venus	23:40	-03°48'	10.5	-3.9	95.2	06:10	12:00	17:50
Mars	06:48	+25°16'	7.0	+0.8	89.9	11:29	19:06	02:45
Jupiter	19:27	-21°53'	37.4	-2.2	99.1	03:03	07:46	12:31
Saturn	10:21	+12°17'	19.6	+0.4	99.9	04:07	22:41	18:39
Uranus	23:24	-04°39'	3.3	+5.9	100.0	05:59	11:42	17:34
Neptune	21:44	-13°59'	2.2	+8.0	100.0	04:45	10:02	15:14
Pluto	18:04	-17°04'	0.1	+14.0	100.0	01:14	06:35	11:20

May 1 planet information (24 hr. clock):

	R.A.	DEC.	DIA."	MAG.	%ILL.	RISE	TRANSIT	SET
Mercury	03:38	+21°19'	5.9	-0.9	74.7	06:37	14:01	21:17
Venus	01:56	+10°33'	9.9	-3.9	98.4	05:39	14:01	21:17
Mars	07:51	+22°52'	5.8	+1.2	90.6	10:46	18:11	01:41
Jupiter	19:36	-21°37'	41.1	-2.4	99.2	01:13	05:57	10:43
Saturn	10:17	+12°33'	18.7	+0.5	99.7	13:45	20:40	03:18
Uranus	23:30	-04°05'	3.3	+5.9	100.0	04:04	09:50	15:43
Neptune	21:46	-13°47'	2.2	+7.9	100.0	02:21	08:06	12:52
Pluto	18:03	-17°03'	0.1	+13.9	100.0	23:20	04:24	09:26

Comet information for April 6 (New Moon):

	<u>Constellation</u>	<u>Rises</u>	<u>Transits</u>	<u>Sets</u>
17P/Holmes	Perseus	8:10 a.m.	4:50 p.m.	1:30 a.m.
C/2007 W1 (Boattini)	Corvus	7:09 p.m.	12:06 a.m.	5:03 a.m.
29P/Schwassmann-Wachman	Taurus	10:11 a.m.	6:04 p.m.	1:56 a.m.
C/2007 B2 (Skiff)	Virgo	6:07 p.m.	12:22 a.m.	6:38 a.m.
93/Lovas 1	Auriga	9:24 a.m.	5:35 p.m.	1:45 a.m.
26P/Grigg-Skjellerup	Aquila	1:56 a.m.	7:25 a.m.	12:53 p.m.
46P/Wirtanen	Auriga	9:53 a.m.	6:25 p.m.	2:56 a.m.
C/2008 C1 (Chen-Gao)	Auriga	9:12 a.m.	5:15 p.m.	1:15 a.m.
C/2007 G1 (LINEAR)	Serpens Cauda	12:46 a.m.	6:27 a.m.	12:08 p.m.
C/2007 T1 (McNaught)	Monoceros	12:42 p.m.	6:24 p.m.	12:06 a.m.

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

March 31:

Astronomical twilight starts: 5:19 a.m.

Nautical twilight starts: 5:52 a.m.

Civil twilight starts: 6:24 a.m.

Sunrise: 6:52 a.m.

Sunset: 7:31 p.m.

Civil twilight ends: 7:58 p.m.

Nautical twilight ends: 8:31 p.m.

Astronomical twilight ends: 9:04 p.m.

April 30:

Astronomical twilight starts: 4:23 a.m.

Nautical twilight starts: 5:02 a.m.

Civil twilight starts: 5:38 a.m.

Sunrise: 6:07 a.m.

Sunset: 8:02 p.m.

Civil twilight ends: 8:31 p.m.

Nautical twilight ends: 9:07 p.m.

Astronomical twilight ends: 9:46 a.m.

The objects listed above are located between 10:00 and 12:00 hours of right ascension.

Seventy-five binary and multiple stars for April: h4481 (Corvus); Aitken 1774, Gamma Crateris, Jacob 16, Struve 3072, h4456, Burnham 1078 (Crater); h4311, Burnham 219, N Hydrae, h4455, h4465 (Hydra); 31 Leonis, Alpha Leonis (Regulus), h2520, Struve 1417, 39 Leonis, Struve 1421, Gamma Leonis (Algieba), Otto Struve 216, 45 Leonis, Struve 1442, Struve 1447, 49 Leonis, Struve 1482, 54 Leonis, Struve 1506, Chi Leonis, 65 Leonis, Struve 1521, Struve 1527, Struve 1529, Iota Leonis, 81 Leonis, 83 Leonis, Tau Leonis, 88 Leonis, 90 Leonis, Struve 1565, Struve 1566, 93 Leonis, h1201, S Leonis (Leo); h2517, Struve 1405, Struve 1432, 33 Leo Minoris, Struve 1459, 40 Leo Minoris, Struve 1492 (Leo Minor); Struve 1401, Struve 1441, Struve 1456, Struve 1464, 35 Sextantis, 40 Sextantis, 41 Sextantis (Sextans); Struve 1402, Struve 1415, Struve 1427, Struve 1462, Struve 1486, Struve 1495, Struve 1510, Struve 1520, Xi Ursae Majoris, Nu Ursae Majoris, Struve 1541, 57 Ursae Majoris, Struve 1544, Struve 1553, Struve 1561, Struve 1563, 65 Ursae Majoris, Otto Struve 241 (Ursa Major)

Challenge binary star for April: Gamma Sextantis

Notable variable star for April: S Ursae Majoris (Ursa Major)

Notable carbon star for April: V Hydrae (Hydra)

One hundred deep-sky objects for April: NGC 4024, NGC 4027 (Corvus); NGC 3511, NGC 3513, NGC 3672, NGC 3887, NGC 3892, NGC 3955, NGC 3962, NGC 3981 (Crater); NGC 3091, NGC 3109, NGC 3145, NGC 3203, NGC 3242, NGC 3309, NGC 3585, NGC 3621, NGC 3717, NGC 3904, NGC 3936 (Hydra); M65, M66, M95, M96, M105, NGC 3098, NGC 3162, NGC 3177, NGC 3185, NGC 3190, NGC 3226, NGC 3227, NGC 3300, NGC 3346, NGC 3367, NGC 3377, NGC 3384, NGC 3389, NGC 3412, NGC 3437, NGC 3489, NGC 3495, NGC 3507, NGC 3521, NGC 3593, NGC 3607, NGC 3608, NGC 3626, NGC 3628, NGC 3630, NGC 3640, NGC 3646, NGC 3655, NGC 3681, NGC 3684, NGC 3686, NGC 3691, NGC 3810, NGC 3842, NGC 3872, NGC 3900, NGC 4008 (Leo); NGC 3245, NGC 3254, NGC 3277, NGC 3294, NGC 3344, NGC 3414, NGC 3432, NGC 3486, NGC 3504 (Leo Minor); NGC 2990, NGC 3044, NGC 3055, NGC 3115, NGC 3156, NGC 3166, NGC 3169, NGC 3246, NGC 3423 (Sextans); IC 750, M97, M108, M109, NGC 3079, NGC 3184, NGC 3198, NGC 3310, NGC 3359, NGC 3610, NGC 3665, NGC 3675, NGC 3738, NGC 3877, NGC 3898, NGC 3941, NGC 3953, NGC 3998, NGC 4026 (Ursa Major)

Top ten deep-sky objects for April: M65, M66, M95, M96, M97, M105, M108, NGC 3115, NGC 3242, NGC 3628

Top ten binocular deep-sky objects for April: M65, M66, M95, M96, M97, M105, M108, M109, NGC 3115, NGC 3242

Challenge deep-sky object for April: Leo I (Leo)

April 2008 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 Eastern Standard Time (-5 hrs. U.T.). Daylight Saving time begins on March 9th at 2:00 a.m. (-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.

"SST" indicates a triple event. 2 shadow-transits and 1 moon-transit

Tue	1	Apr	2008	03:10	Viewing Resumed - Jupiter Rises
Tue	1	Apr	2008	06:52	Viewing Suspended - Sun Rises
Wed	2	Apr	2008	03:07	Viewing Resumed - Jupiter Rises
Wed	2	Apr	2008	03:10	Cal: Disappears into Occultation
Wed	2	Apr	2008	03:34	Eur: Shadow Transit Begins S
Wed	2	Apr	2008	06:08	Eur: Transit Begins ST
Wed	2	Apr	2008	06:16	Eur: Shadow Transit Ends T
Wed	2	Apr	2008	06:28	Cal: Reappears from Occultation T
Wed	2	Apr	2008	06:51	Viewing Suspended - Sun Rises
Thu	3	Apr	2008	03:03	Viewing Resumed - Jupiter Rises
Thu	3	Apr	2008	06:49	Viewing Suspended - Sun Rises
Fri	4	Apr	2008	03:00	Viewing Resumed - Jupiter Rises
Fri	4	Apr	2008	03:09	Eur: Reappears from Occultation
Fri	4	Apr	2008	04:24	GRS: Crosses Central Meridian
Fri	4	Apr	2008	05:06	Io : Disappears into Eclipse
Fri	4	Apr	2008	06:47	Viewing Suspended - Sun Rises
Sat	5	Apr	2008	02:56	Viewing Resumed - Jupiter Rises
Sat	5	Apr	2008	02:57	Gan: Shadow Transit Begins SS
Sat	5	Apr	2008	03:32	Io : Transit Begins SST
Sat	5	Apr	2008	04:30	Io : Shadow Transit Ends ST
Sat	5	Apr	2008	05:49	Io : Transit Ends S
Sat	5	Apr	2008	05:58	Gan: Shadow Transit Ends
Sat	5	Apr	2008	06:46	Viewing Suspended - Sun Rises
Sun	6	Apr	2008	02:53	Viewing Resumed - Jupiter Rises
Sun	6	Apr	2008	03:07	Io : Reappears from Occultation
Sun	6	Apr	2008	06:02	GRS: Crosses Central Meridian
Sun	6	Apr	2008	06:44	Viewing Suspended - Sun Rises
Mon	7	Apr	2008	02:49	Viewing Resumed - Jupiter Rises
Mon	7	Apr	2008	06:43	Viewing Suspended - Sun Rises
Tue	8	Apr	2008	02:46	Viewing Resumed - Jupiter Rises
Tue	8	Apr	2008	06:41	Viewing Suspended - Sun Rises
Wed	9	Apr	2008	02:42	Viewing Resumed - Jupiter Rises
Wed	9	Apr	2008	03:32	GRS: Crosses Central Meridian
Wed	9	Apr	2008	06:08	Eur: Shadow Transit Begins S
Wed	9	Apr	2008	06:40	Viewing Suspended - Sun Rises
Thu	10	Apr	2008	02:38	Viewing Resumed - Jupiter Rises
Thu	10	Apr	2008	06:38	Viewing Suspended - Sun Rises
Fri	11	Apr	2008	02:35	Viewing Resumed - Jupiter Rises
Fri	11	Apr	2008	05:10	GRS: Crosses Central Meridian
Fri	11	Apr	2008	05:46	Eur: Reappears from Occultation
Fri	11	Apr	2008	06:37	Viewing Suspended - Sun Rises
Sat	12	Apr	2008	02:31	Viewing Resumed - Jupiter Rises
Sat	12	Apr	2008	04:08	Io : Shadow Transit Begins S
Sat	12	Apr	2008	05:26	Io : Transit Begins ST
Sat	12	Apr	2008	06:23	Io : Shadow Transit Ends T
Sat	12	Apr	2008	06:35	Viewing Suspended - Sun Rises

Sun 13 Apr 2008 02:28 Viewing Resumed - Jupiter Rises
 Sun 13 Apr 2008 05:01 Io : Reappears from Occultation
 Sun 13 Apr 2008 06:34 Viewing Suspended - Sun Rises
 Mon 14 Apr 2008 02:24 Viewing Resumed - Jupiter Rises
 Mon 14 Apr 2008 02:40 GRS: Crosses Central Meridian
 Mon 14 Apr 2008 06:32 Viewing Suspended - Sun Rises
 Tue 15 Apr 2008 02:20 Viewing Resumed - Jupiter Rises
 Tue 15 Apr 2008 06:31 Viewing Suspended - Sun Rises
 Wed 16 Apr 2008 02:17 Viewing Resumed - Jupiter Rises
 Wed 16 Apr 2008 04:19 GRS: Crosses Central Meridian
 Wed 16 Apr 2008 05:23 Gan: Reappears from Occultation
 Wed 16 Apr 2008 06:29 Viewing Suspended - Sun Rises
 Thu 17 Apr 2008 02:13 Viewing Resumed - Jupiter Rises
 Thu 17 Apr 2008 06:28 Viewing Suspended - Sun Rises
 Fri 18 Apr 2008 02:09 Viewing Resumed - Jupiter Rises
 Fri 18 Apr 2008 02:58 Eur: Disappears into Eclipse
 Fri 18 Apr 2008 05:57 GRS: Crosses Central Meridian
 Fri 18 Apr 2008 06:26 Viewing Suspended - Sun Rises
 Sat 19 Apr 2008 02:06 Viewing Resumed - Jupiter Rises
 Sat 19 Apr 2008 06:01 Io : Shadow Transit Begins S
 Sat 19 Apr 2008 06:25 Viewing Suspended - Sun Rises
 Sun 20 Apr 2008 02:02 Viewing Resumed - Jupiter Rises
 Sun 20 Apr 2008 03:16 Eur: Transit Ends
 Sun 20 Apr 2008 03:21 Io : Disappears into Eclipse
 Sun 20 Apr 2008 06:23 Viewing Suspended - Sun Rises
 Mon 21 Apr 2008 01:58 Viewing Resumed - Jupiter Rises
 Mon 21 Apr 2008 02:45 Io : Shadow Transit Ends T
 Mon 21 Apr 2008 03:27 GRS: Crosses Central Meridian
 Mon 21 Apr 2008 04:04 Io : Transit Ends
 Mon 21 Apr 2008 06:22 Viewing Suspended - Sun Rises
 Tue 22 Apr 2008 01:54 Viewing Resumed - Jupiter Rises
 Tue 22 Apr 2008 06:20 Viewing Suspended - Sun Rises
 Wed 23 Apr 2008 01:51 Viewing Resumed - Jupiter Rises
 Wed 23 Apr 2008 04:01 Gan: Reappears from Eclipse
 Wed 23 Apr 2008 05:05 GRS: Crosses Central Meridian
 Wed 23 Apr 2008 06:05 Gan: Disappears into Occultation
 Wed 23 Apr 2008 06:19 Viewing Suspended - Sun Rises
 Thu 24 Apr 2008 01:47 Viewing Resumed - Jupiter Rises
 Thu 24 Apr 2008 06:18 Viewing Suspended - Sun Rises
 Fri 25 Apr 2008 01:43 Viewing Resumed - Jupiter Rises
 Fri 25 Apr 2008 05:34 Eur: Disappears into Eclipse
 Fri 25 Apr 2008 06:16 Viewing Suspended - Sun Rises
 Sat 26 Apr 2008 01:39 Viewing Resumed - Jupiter Rises
 Sat 26 Apr 2008 02:34 GRS: Crosses Central Meridian
 Sat 26 Apr 2008 06:15 Viewing Suspended - Sun Rises
 Sun 27 Apr 2008 01:36 Viewing Resumed - Jupiter Rises
 Sun 27 Apr 2008 03:02 Eur: Transit Begins ST
 Sun 27 Apr 2008 03:14 Eur: Shadow Transit Ends T
 Sun 27 Apr 2008 04:10 Cal: Transit Begins TT
 Sun 27 Apr 2008 05:14 Io : Disappears into Eclipse TT
 Sun 27 Apr 2008 05:46 Eur: Transit Ends T
 Sun 27 Apr 2008 06:14 Viewing Suspended - Sun Rises
 Mon 28 Apr 2008 01:32 Viewing Resumed - Jupiter Rises
 Mon 28 Apr 2008 02:23 Io : Shadow Transit Begins S
 Mon 28 Apr 2008 03:39 Io : Transit Begins ST
 Mon 28 Apr 2008 04:13 GRS: Crosses Central Meridian
 Mon 28 Apr 2008 04:39 Io : Shadow Transit Ends T
 Mon 28 Apr 2008 05:56 Io : Transit Ends
 Mon 28 Apr 2008 06:12 Viewing Suspended - Sun Rises
 Tue 29 Apr 2008 01:28 Viewing Resumed - Jupiter Rises
 Tue 29 Apr 2008 03:12 Io : Reappears from Occultation

Tue 29 Apr 2008 06:11 Viewing Suspended - Sun Rises
 Wed 30 Apr 2008 01:24 Viewing Resumed - Jupiter Rises
 Wed 30 Apr 2008 04:57 Gan: Disappears into Eclipse
 Wed 30 Apr 2008 05:51 GRS: Crosses Central Meridian
 Wed 30 Apr 2008 06:10 Viewing Suspended - Sun Rises

April 2008 Comets

C/2007 W1 (Boattini)										
Date	TT	R. A.	(2000) Decl.	Delta	r	Elong.	Phase	m1	m2	
2008 04 01		12 15.02	-17 20.9	0.701	1.687	165.6	8.5	11.0		
2008 04 02		12 13.14	-17 29.4	0.688	1.674	165.1	8.8	10.9		
2008 04 03		12 11.21	-17 37.9	0.675	1.661	164.5	9.3	10.8		
2008 04 04		12 09.21	-17 46.4	0.663	1.647	163.8	9.7	10.8		
2008 04 05		12 07.15	-17 54.9	0.651	1.634	163.0	10.3	10.7		
2008 04 06		12 05.02	-18 03.4	0.639	1.621	162.2	10.9	10.6		
2008 04 07		12 02.84	-18 11.8	0.627	1.608	161.2	11.6	10.5		
2008 04 08		12 00.59	-18 20.3	0.616	1.595	160.2	12.3	10.5		
2008 04 09		11 58.28	-18 28.7	0.605	1.581	159.1	13.1	10.4		
2008 04 10		11 55.91	-18 37.1	0.594	1.568	158.0	13.9	10.3		
2008 04 11		11 53.48	-18 45.5	0.583	1.555	156.8	14.7	10.2		
2008 04 12		11 50.99	-18 53.9	0.573	1.542	155.6	15.6	10.2		
2008 04 13		11 48.43	-19 02.3	0.562	1.529	154.3	16.5	10.1		
2008 04 14		11 45.82	-19 10.6	0.552	1.516	153.0	17.5	10.0		
2008 04 15		11 43.15	-19 19.0	0.542	1.503	151.6	18.5	9.9		
2008 04 16		11 40.41	-19 27.3	0.533	1.490	150.3	19.5	9.9		
2008 04 17		11 37.62	-19 35.7	0.523	1.477	148.9	20.6	9.8		
2008 04 18		11 34.77	-19 44.0	0.514	1.464	147.5	21.7	9.7		
2008 04 19		11 31.86	-19 52.3	0.505	1.451	146.0	22.8	9.6		
2008 04 20		11 28.89	-20 00.6	0.496	1.438	144.5	23.9	9.6		
2008 04 21		11 25.86	-20 08.9	0.487	1.425	143.1	25.1	9.5		
2008 04 22		11 22.78	-20 17.2	0.478	1.412	141.6	26.3	9.4		
2008 04 23		11 19.64	-20 25.5	0.470	1.399	140.0	27.5	9.3		
2008 04 24		11 16.44	-20 33.8	0.462	1.386	138.5	28.7	9.2		
2008 04 25		11 13.19	-20 42.1	0.454	1.373	136.9	30.0	9.2		
2008 04 26		11 09.87	-20 50.5	0.446	1.360	135.4	31.3	9.1		
2008 04 27		11 06.51	-20 58.8	0.438	1.347	133.8	32.6	9.0		
2008 04 28		11 03.08	-21 07.2	0.431	1.335	132.2	34.0	8.9		
2008 04 29		10 59.60	-21 15.5	0.423	1.322	130.6	35.3	8.8		
2008 04 30		10 56.06	-21 23.9	0.416	1.309	129.0	36.7	8.8		

29P/Schwassmann-Wachman

Date	TT	R. A.	(2000) Decl.	Delta	r	Elong.	Phase	m1	m2
2008 04 01		05 56.02	+28 37.4	6.144	6.010	77.6	9.3	15.7	19.5
2008 04 02		05 56.46	+28 36.1	6.160	6.010	76.8	9.3	15.7	19.5
2008 04 03		05 56.91	+28 34.8	6.176	6.011	75.9	9.3	15.7	19.5
2008 04 04		05 57.38	+28 33.6	6.192	6.011	75.0	9.2	15.7	19.5
2008 04 05		05 57.85	+28 32.3	6.207	6.011	74.1	9.2	15.8	19.5
2008 04 06		05 58.33	+28 31.0	6.223	6.011	73.2	9.2	15.8	19.5
2008 04 07		05 58.82	+28 29.8	6.239	6.012	72.4	9.1	15.8	19.5
2008 04 08		05 59.32	+28 28.5	6.254	6.012	71.5	9.1	15.8	19.5
2008 04 09		05 59.83	+28 27.3	6.270	6.012	70.6	9.0	15.8	19.5

2008 04 10	06 00.35	+28 26.0	6.285	6.013	69.8	9.0	15.8	19.5
2008 04 11	06 00.88	+28 24.8	6.301	6.013	68.9	8.9	15.8	19.5
2008 04 12	06 01.41	+28 23.5	6.316	6.013	68.0	8.9	15.8	19.5
2008 04 13	06 01.96	+28 22.3	6.331	6.014	67.2	8.8	15.8	19.5
2008 04 14	06 02.51	+28 21.1	6.346	6.014	66.3	8.8	15.8	19.5
2008 04 15	06 03.07	+28 19.8	6.361	6.014	65.5	8.7	15.8	19.5
2008 04 16	06 03.64	+28 18.6	6.376	6.015	64.6	8.7	15.8	19.5
2008 04 17	06 04.21	+28 17.4	6.391	6.015	63.8	8.6	15.8	19.5
2008 04 18	06 04.80	+28 16.2	6.405	6.015	62.9	8.5	15.8	19.5
2008 04 19	06 05.39	+28 14.9	6.420	6.016	62.1	8.5	15.8	19.5
2008 04 20	06 05.99	+28 13.7	6.434	6.016	61.3	8.4	15.8	19.5
2008 04 21	06 06.59	+28 12.5	6.448	6.016	60.4	8.4	15.8	19.5
2008 04 22	06 07.21	+28 11.3	6.463	6.016	59.6	8.3	15.8	19.5
2008 04 23	06 07.83	+28 10.0	6.477	6.017	58.7	8.2	15.9	19.5
2008 04 24	06 08.45	+28 08.8	6.491	6.017	57.9	8.1	15.9	19.5
2008 04 25	06 09.09	+28 07.6	6.505	6.017	57.1	8.1	15.9	19.5
2008 04 26	06 09.73	+28 06.4	6.518	6.018	56.3	8.0	15.9	19.5
2008 04 27	06 10.38	+28 05.1	6.532	6.018	55.4	7.9	15.9	19.5
2008 04 28	06 11.03	+28 03.9	6.545	6.018	54.6	7.8	15.9	19.5
2008 04 29	06 11.69	+28 02.7	6.559	6.019	53.8	7.8	15.9	19.5
2008 04 30	06 12.36	+28 01.4	6.572	6.019	53.0	7.7	15.9	19.5

C/2007 B2 (Skiff)

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1	m2
2008 04 01	12 23.64	+04 35.5	2.300	3.288	169.7	3.1	13.0		
2008 04 02	12 22.86	+04 31.0	2.297	3.284	168.9	3.4	13.0		
2008 04 03	12 22.09	+04 26.3	2.295	3.279	168.0	3.6	13.0		
2008 04 04	12 21.32	+04 21.6	2.293	3.275	167.1	3.9	13.0		
2008 04 05	12 20.55	+04 16.8	2.291	3.271	166.2	4.2	12.9		
2008 04 06	12 19.78	+04 11.9	2.290	3.267	165.2	4.5	12.9		
2008 04 07	12 19.02	+04 06.9	2.288	3.263	164.3	4.8	12.9		
2008 04 08	12 18.27	+04 01.9	2.288	3.259	163.3	5.1	12.9		
2008 04 09	12 17.52	+03 56.7	2.287	3.255	162.2	5.4	12.9		
2008 04 10	12 16.78	+03 51.5	2.287	3.251	161.2	5.7	12.9		
2008 04 11	12 16.04	+03 46.1	2.287	3.248	160.2	6.0	12.9		
2008 04 12	12 15.31	+03 40.7	2.287	3.244	159.1	6.3	12.9		
2008 04 13	12 14.60	+03 35.2	2.288	3.240	158.1	6.6	12.9		
2008 04 14	12 13.89	+03 29.6	2.289	3.236	157.0	6.9	12.9		
2008 04 15	12 13.19	+03 23.8	2.290	3.232	156.0	7.3	12.9		
2008 04 16	12 12.50	+03 18.0	2.291	3.228	154.9	7.6	12.9		
2008 04 17	12 11.83	+03 12.2	2.293	3.225	153.9	7.9	12.9		
2008 04 18	12 11.16	+03 06.2	2.295	3.221	152.8	8.2	12.9		
2008 04 19	12 10.51	+03 00.1	2.297	3.217	151.8	8.5	12.9		
2008 04 20	12 09.87	+02 53.9	2.299	3.213	150.7	8.8	12.9		
2008 04 21	12 09.24	+02 47.7	2.302	3.210	149.7	9.1	12.9		
2008 04 22	12 08.63	+02 41.3	2.305	3.206	148.6	9.4	12.9		
2008 04 23	12 08.03	+02 34.9	2.308	3.202	147.6	9.7	12.9		
2008 04 24	12 07.45	+02 28.4	2.311	3.199	146.5	10.0	12.9		
2008 04 25	12 06.88	+02 21.7	2.315	3.195	145.5	10.3	12.9		
2008 04 26	12 06.33	+02 15.0	2.319	3.192	144.4	10.6	12.9		
2008 04 27	12 05.80	+02 08.2	2.323	3.188	143.4	10.8	12.9		
2008 04 28	12 05.28	+02 01.4	2.327	3.185	142.4	11.1	12.9		
2008 04 29	12 04.78	+01 54.4	2.332	3.181	141.3	11.4	12.9		
2008 04 30	12 04.30	+01 47.3	2.337	3.178	140.3	11.7	12.9		

93P/Lovas 1

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1	m2
2008 04 01	05	14.17	+32 06.2	2.138	2.008	68.9	27.7	15.7	22.4
2008 04 02	05	16.83	+32 03.7	2.152	2.013	68.5	27.5	15.7	22.4
2008 04 03	05	19.49	+32 01.1	2.166	2.019	68.1	27.4	15.8	22.4
2008 04 04	05	22.15	+31 58.3	2.180	2.024	67.7	27.2	15.8	22.4
2008 04 05	05	24.79	+31 55.4	2.194	2.029	67.3	27.1	15.8	22.5
2008 04 06	05	27.43	+31 52.4	2.208	2.034	66.8	26.9	15.8	22.5
2008 04 07	05	30.07	+31 49.3	2.222	2.039	66.4	26.7	15.9	22.5
2008 04 08	05	32.69	+31 46.1	2.236	2.044	66.0	26.6	15.9	22.5
2008 04 09	05	35.31	+31 42.7	2.250	2.050	65.6	26.4	15.9	22.5
2008 04 10	05	37.92	+31 39.2	2.264	2.055	65.1	26.3	16.0	22.5
2008 04 11	05	40.52	+31 35.6	2.278	2.060	64.7	26.1	16.0	22.5
2008 04 12	05	43.11	+31 31.9	2.292	2.066	64.3	25.9	16.0	22.6
2008 04 13	05	45.70	+31 28.1	2.307	2.071	63.9	25.8	16.1	22.6
2008 04 14	05	48.28	+31 24.2	2.321	2.076	63.4	25.6	16.1	22.6
2008 04 15	05	50.84	+31 20.1	2.335	2.082	63.0	25.4	16.1	22.6
2008 04 16	05	53.40	+31 16.0	2.350	2.087	62.6	25.3	16.1	22.6
2008 04 17	05	55.95	+31 11.7	2.364	2.093	62.2	25.1	16.2	22.6
2008 04 18	05	58.50	+31 07.3	2.378	2.098	61.7	24.9	16.2	22.6
2008 04 19	06	01.03	+31 02.8	2.393	2.104	61.3	24.8	16.2	22.7
2008 04 20	06	03.55	+30 58.3	2.407	2.109	60.9	24.6	16.3	22.7
2008 04 21	06	06.07	+30 53.6	2.421	2.115	60.4	24.4	16.3	22.7
2008 04 22	06	08.58	+30 48.8	2.436	2.120	60.0	24.2	16.3	22.7
2008 04 23	06	11.07	+30 43.8	2.450	2.126	59.6	24.1	16.4	22.7
2008 04 24	06	13.56	+30 38.8	2.465	2.131	59.1	23.9	16.4	22.7
2008 04 25	06	16.04	+30 33.7	2.479	2.137	58.7	23.7	16.4	22.7
2008 04 26	06	18.51	+30 28.5	2.493	2.143	58.3	23.5	16.4	22.7
2008 04 27	06	20.97	+30 23.2	2.508	2.148	57.8	23.4	16.5	22.8
2008 04 28	06	23.42	+30 17.8	2.522	2.154	57.4	23.2	16.5	22.8
2008 04 29	06	25.86	+30 12.3	2.537	2.160	57.0	23.0	16.5	22.8
2008 04 30	06	28.29	+30 06.7	2.551	2.165	56.5	22.8	16.6	22.8

17P/Holmes

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1	m2
2008 04 01	04	36.00	+36 46.9	3.447	3.110	62.2	16.5	20.1	22.0
2008 04 02	04	37.56	+36 45.0	3.464	3.114	61.6	16.4	20.1	22.0
2008 04 03	04	39.13	+36 43.1	3.480	3.119	60.9	16.3	20.1	22.1
2008 04 04	04	40.70	+36 41.2	3.496	3.123	60.3	16.1	20.1	22.1
2008 04 05	04	42.27	+36 39.3	3.512	3.127	59.6	16.0	20.2	22.1
2008 04 06	04	43.85	+36 37.5	3.528	3.132	59.0	15.9	20.2	22.1
2008 04 07	04	45.43	+36 35.6	3.544	3.136	58.3	15.8	20.2	22.1
2008 04 08	04	47.02	+36 33.8	3.559	3.140	57.7	15.6	20.2	22.1
2008 04 09	04	48.60	+36 31.9	3.575	3.144	57.0	15.5	20.2	22.1
2008 04 10	04	50.20	+36 30.1	3.591	3.149	56.4	15.4	20.2	22.1
2008 04 11	04	51.79	+36 28.2	3.606	3.153	55.8	15.2	20.3	22.1
2008 04 12	04	53.39	+36 26.4	3.622	3.157	55.1	15.1	20.3	22.1
2008 04 13	04	54.99	+36 24.5	3.637	3.162	54.5	15.0	20.3	22.1
2008 04 14	04	56.59	+36 22.7	3.652	3.166	53.8	14.8	20.3	22.1
2008 04 15	04	58.19	+36 20.8	3.668	3.170	53.2	14.7	20.3	22.1
2008 04 16	04	59.80	+36 19.0	3.683	3.174	52.6	14.5	20.4	22.2
2008 04 17	05	01.41	+36 17.1	3.698	3.179	51.9	14.4	20.4	22.2
2008 04 18	05	03.02	+36 15.3	3.713	3.183	51.3	14.3	20.4	22.2
2008 04 19	05	04.64	+36 13.4	3.728	3.187	50.7	14.1	20.4	22.2
2008 04 20	05	06.25	+36 11.5	3.742	3.192	50.0	14.0	20.4	22.2
2008 04 21	05	07.87	+36 09.6	3.757	3.196	49.4	13.8	20.4	22.2
2008 04 22	05	09.49	+36 07.7	3.772	3.200	48.8	13.7	20.5	22.2
2008 04 23	05	11.11	+36 05.8	3.786	3.204	48.2	13.5	20.5	22.2

2008 04 24	05 12.73	+36 03.9	3.801	3.209	47.5	13.4	20.5	22.2
2008 04 25	05 14.35	+36 02.0	3.815	3.213	46.9	13.2	20.5	22.2
2008 04 26	05 15.97	+36 00.0	3.829	3.217	46.3	13.1	20.5	22.2
2008 04 27	05 17.60	+35 58.1	3.843	3.221	45.7	12.9	20.5	22.2
2008 04 28	05 19.22	+35 56.1	3.857	3.226	45.1	12.8	20.6	22.2
2008 04 29	05 20.85	+35 54.1	3.871	3.230	44.4	12.6	20.6	22.2
2008 04 30	05 22.48	+35 52.1	3.885	3.234	43.8	12.5	20.6	22.2

26P/Grigg-Skjellerup

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1	m2
2008 04 01	18 59.70	-14 44.3	0.565	1.122	87.0	62.8	12.8	17.7	
2008 04 02	19 03.19	-13 51.8	0.566	1.123	87.0	62.7	12.8	17.7	
2008 04 03	19 06.61	-12 59.5	0.568	1.125	87.1	62.6	12.8	17.8	
2008 04 04	19 09.94	-12 07.3	0.570	1.126	87.2	62.5	12.8	17.8	
2008 04 05	19 13.20	-11 15.4	0.571	1.128	87.2	62.4	12.9	17.8	
2008 04 06	19 16.37	-10 23.7	0.573	1.130	87.3	62.2	12.9	17.8	
2008 04 07	19 19.48	-09 32.4	0.575	1.132	87.4	62.1	13.0	17.8	
2008 04 08	19 22.51	-08 41.3	0.577	1.134	87.5	61.9	13.0	17.8	
2008 04 09	19 25.46	-07 50.7	0.580	1.136	87.6	61.7	13.0	17.8	
2008 04 10	19 28.35	-07 00.4	0.582	1.139	87.8	61.5	13.1	17.8	
2008 04 11	19 31.16	-06 10.6	0.584	1.141	87.9	61.3	13.1	17.8	
2008 04 12	19 33.91	-05 21.2	0.587	1.144	88.0	61.1	13.2	17.8	
2008 04 13	19 36.58	-04 32.3	0.589	1.147	88.2	60.9	13.2	17.8	
2008 04 14	19 39.19	-03 43.9	0.592	1.150	88.4	60.7	13.3	17.8	
2008 04 15	19 41.73	-02 55.9	0.595	1.153	88.5	60.4	13.3	17.8	
2008 04 16	19 44.21	-02 08.5	0.598	1.156	88.7	60.2	13.4	17.9	
2008 04 17	19 46.63	-01 21.7	0.600	1.160	88.9	59.9	13.5	17.9	
2008 04 18	19 48.98	-00 35.4	0.603	1.163	89.1	59.7	13.5	17.9	
2008 04 19	19 51.27	+00 10.4	0.606	1.167	89.3	59.4	13.6	17.9	
2008 04 20	19 53.50	+00 55.6	0.609	1.171	89.5	59.1	13.7	17.9	
2008 04 21	19 55.67	+01 40.2	0.612	1.175	89.8	58.8	13.7	17.9	
2008 04 22	19 57.78	+02 24.2	0.615	1.179	90.0	58.5	13.8	17.9	
2008 04 23	19 59.83	+03 07.6	0.619	1.183	90.2	58.2	13.9	17.9	
2008 04 24	20 01.82	+03 50.5	0.622	1.187	90.5	57.9	13.9	17.9	
2008 04 25	20 03.75	+04 32.7	0.625	1.191	90.7	57.6	14.0	17.9	
2008 04 26	20 05.63	+05 14.4	0.628	1.196	91.0	57.3	14.1	17.9	
2008 04 27	20 07.45	+05 55.5	0.632	1.200	91.3	57.0	14.2	18.0	
2008 04 28	20 09.21	+06 35.9	0.635	1.205	91.6	56.7	14.3	18.0	
2008 04 29	20 10.92	+07 15.8	0.638	1.210	91.9	56.3	14.3	18.0	
2008 04 30	20 12.57	+07 55.1	0.642	1.215	92.2	56.0	14.4	18.0	

46P/Wirtanen

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1	m2
2008 04 01	05 50.00	+34 49.0	1.105	1.308	76.7	48.0	11.0	20.6	
2008 04 02	05 55.11	+34 54.5	1.114	1.315	76.7	47.7	11.0	20.6	
2008 04 03	06 00.18	+34 59.2	1.123	1.323	76.8	47.4	11.1	20.6	
2008 04 04	06 05.23	+35 03.0	1.133	1.330	76.9	47.1	11.1	20.7	
2008 04 05	06 10.24	+35 05.9	1.142	1.338	76.9	46.8	11.2	20.7	
2008 04 06	06 15.22	+35 08.1	1.152	1.345	77.0	46.5	11.2	20.7	
2008 04 07	06 20.15	+35 09.5	1.161	1.353	77.1	46.2	11.3	20.7	
2008 04 08	06 25.05	+35 10.2	1.171	1.360	77.1	45.8	11.3	20.8	
2008 04 09	06 29.90	+35 10.1	1.182	1.368	77.1	45.5	11.4	20.8	
2008 04 10	06 34.72	+35 09.3	1.192	1.376	77.1	45.2	11.5	20.8	
2008 04 11	06 39.48	+35 07.9	1.202	1.384	77.2	44.9	11.5	20.8	
2008 04 12	06 44.21	+35 05.7	1.213	1.391	77.2	44.6	11.6	20.8	

2008 04 13	06 48.88	+35 02.9	1.224	1.399	77.2	44.3	11.6	20.9
2008 04 14	06 53.51	+34 59.5	1.235	1.407	77.2	44.0	11.7	20.9
2008 04 15	06 58.09	+34 55.4	1.246	1.415	77.1	43.7	11.7	20.9
2008 04 16	07 02.62	+34 50.8	1.257	1.423	77.1	43.4	11.8	20.9
2008 04 17	07 07.10	+34 45.6	1.269	1.431	77.1	43.1	11.9	21.0
2008 04 18	07 11.53	+34 39.9	1.280	1.439	77.1	42.8	11.9	21.0
2008 04 19	07 15.91	+34 33.6	1.292	1.447	77.0	42.5	12.0	21.0
2008 04 20	07 20.24	+34 26.8	1.304	1.455	76.9	42.3	12.0	21.0
2008 04 21	07 24.52	+34 19.6	1.316	1.464	76.9	42.0	12.1	21.1
2008 04 22	07 28.75	+34 11.9	1.328	1.472	76.8	41.7	12.1	21.1
2008 04 23	07 32.93	+34 03.8	1.341	1.480	76.7	41.4	12.2	21.1
2008 04 24	07 37.05	+33 55.2	1.353	1.488	76.7	41.1	12.2	21.1
2008 04 25	07 41.13	+33 46.2	1.366	1.496	76.6	40.8	12.3	21.2
2008 04 26	07 45.16	+33 36.9	1.379	1.505	76.5	40.6	12.4	21.2
2008 04 27	07 49.13	+33 27.1	1.392	1.513	76.4	40.3	12.4	21.2
2008 04 28	07 53.06	+33 17.0	1.405	1.521	76.2	40.0	12.5	21.2
2008 04 29	07 56.93	+33 06.6	1.418	1.530	76.1	39.7	12.5	21.3
2008 04 30	08 00.76	+32 55.9	1.431	1.538	76.0	39.5	12.6	21.3

C/2007 G1 (LINEAR)

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1	m2
2008 04 01		18 21.07	-05 40.7	3.303	3.545	95.7	16.3	13.6	
2008 04 02		18 21.05	-05 46.9	3.280	3.539	96.7	16.3	13.6	
2008 04 03		18 21.02	-05 53.2	3.257	3.532	97.6	16.3	13.5	
2008 04 04		18 20.96	-05 59.6	3.234	3.526	98.6	16.3	13.5	
2008 04 05		18 20.88	-06 06.1	3.212	3.519	99.6	16.3	13.5	
2008 04 06		18 20.78	-06 12.8	3.189	3.513	100.6	16.3	13.5	
2008 04 07		18 20.66	-06 19.5	3.166	3.506	101.5	16.2	13.5	
2008 04 08		18 20.52	-06 26.4	3.144	3.500	102.5	16.2	13.4	
2008 04 09		18 20.35	-06 33.5	3.121	3.494	103.5	16.2	13.4	
2008 04 10		18 20.16	-06 40.7	3.098	3.487	104.5	16.1	13.4	
2008 04 11		18 19.95	-06 48.0	3.076	3.481	105.5	16.1	13.4	
2008 04 12		18 19.71	-06 55.4	3.054	3.474	106.5	16.1	13.3	
2008 04 13		18 19.45	-07 03.0	3.031	3.468	107.5	16.0	13.3	
2008 04 14		18 19.16	-07 10.8	3.009	3.462	108.6	15.9	13.3	
2008 04 15		18 18.85	-07 18.7	2.987	3.455	109.6	15.9	13.3	
2008 04 16		18 18.51	-07 26.8	2.965	3.449	110.6	15.8	13.2	
2008 04 17		18 18.14	-07 35.0	2.943	3.443	111.7	15.7	13.2	
2008 04 18		18 17.75	-07 43.4	2.921	3.436	112.7	15.6	13.2	
2008 04 19		18 17.34	-07 52.0	2.899	3.430	113.8	15.5	13.2	
2008 04 20		18 16.89	-08 00.8	2.878	3.424	114.9	15.4	13.1	
2008 04 21		18 16.42	-08 09.7	2.856	3.418	115.9	15.3	13.1	
2008 04 22		18 15.92	-08 18.8	2.835	3.411	117.0	15.2	13.1	
2008 04 23		18 15.39	-08 28.1	2.814	3.405	118.1	15.1	13.1	
2008 04 24		18 14.83	-08 37.6	2.793	3.399	119.2	15.0	13.0	
2008 04 25		18 14.24	-08 47.3	2.772	3.393	120.3	14.8	13.0	
2008 04 26		18 13.63	-08 57.2	2.751	3.386	121.4	14.7	13.0	
2008 04 27		18 12.98	-09 07.3	2.731	3.380	122.5	14.5	13.0	
2008 04 28		18 12.30	-09 17.6	2.710	3.374	123.6	14.4	12.9	
2008 04 29		18 11.59	-09 28.0	2.690	3.368	124.8	14.2	12.9	
2008 04 30		18 10.85	-09 38.7	2.670	3.362	125.9	14.0	12.9	

C/2008 C1 (Chen-Gao)

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1	m2
2008 04 01		04 49.43	+34 38.3	1.350	1.285	64.3	44.5	11.7	

2008 04 02	04 53.09	+33 52.0	1.355	1.283	63.9	44.4	11.7
2008 04 03	04 56.68	+33 05.7	1.360	1.280	63.5	44.4	11.7
2008 04 04	05 00.21	+32 19.4	1.366	1.278	63.2	44.3	11.7
2008 04 05	05 03.67	+31 33.3	1.372	1.275	62.8	44.2	11.7
2008 04 06	05 07.08	+30 47.2	1.378	1.273	62.4	44.1	11.7
2008 04 07	05 10.43	+30 01.3	1.384	1.271	62.0	44.0	11.7
2008 04 08	05 13.72	+29 15.5	1.390	1.270	61.6	43.9	11.8
2008 04 09	05 16.96	+28 29.9	1.397	1.268	61.2	43.8	11.8
2008 04 10	05 20.15	+27 44.5	1.403	1.267	60.9	43.7	11.8
2008 04 11	05 23.29	+26 59.3	1.410	1.265	60.5	43.6	11.8
2008 04 12	05 26.38	+26 14.3	1.417	1.264	60.1	43.4	11.8
2008 04 13	05 29.42	+25 29.5	1.424	1.264	59.8	43.3	11.8
2008 04 14	05 32.41	+24 45.0	1.432	1.263	59.4	43.1	11.8
2008 04 15	05 35.37	+24 00.7	1.439	1.263	59.1	43.0	11.8
2008 04 16	05 38.27	+23 16.8	1.447	1.262	58.7	42.8	11.8
2008 04 17	05 41.14	+22 33.1	1.455	1.262	58.4	42.6	11.8
2008 04 18	05 43.97	+21 49.6	1.463	1.262	58.1	42.5	11.8
2008 04 19	05 46.76	+21 06.5	1.471	1.263	57.7	42.3	11.9
2008 04 20	05 49.51	+20 23.7	1.479	1.263	57.4	42.1	11.9
2008 04 21	05 52.23	+19 41.2	1.487	1.264	57.1	41.9	11.9
2008 04 22	05 54.91	+18 59.0	1.495	1.265	56.8	41.7	11.9
2008 04 23	05 57.56	+18 17.2	1.504	1.266	56.5	41.5	11.9
2008 04 24	06 00.18	+17 35.6	1.513	1.267	56.2	41.3	11.9
2008 04 25	06 02.76	+16 54.4	1.521	1.268	55.9	41.0	11.9
2008 04 26	06 05.32	+16 13.6	1.530	1.270	55.6	40.8	12.0
2008 04 27	06 07.85	+15 33.0	1.539	1.272	55.3	40.6	12.0
2008 04 28	06 10.35	+14 52.8	1.548	1.274	55.0	40.4	12.0
2008 04 29	06 12.83	+14 12.9	1.557	1.276	54.7	40.1	12.0
2008 04 30	06 15.28	+13 33.4	1.566	1.278	54.5	39.9	12.0

C/2007 T1 (McNaught)

Date	TT	R. A. (2000)	Decl.	Delta	r	Elong.	Phase	m1	m2
2008 04 01	06 14.57	-09 13.9	1.854	2.011	83.9	29.6	14.9		
2008 04 02	06 15.35	-08 37.1	1.881	2.023	83.2	29.4	14.9		
2008 04 03	06 16.13	-08 01.4	1.909	2.035	82.5	29.1	15.0		
2008 04 04	06 16.92	-07 26.7	1.936	2.048	81.8	28.9	15.0		
2008 04 05	06 17.72	-06 53.1	1.963	2.060	81.0	28.7	15.1		
2008 04 06	06 18.52	-06 20.4	1.991	2.072	80.3	28.4	15.2		
2008 04 07	06 19.33	-05 48.7	2.018	2.085	79.6	28.2	15.2		
2008 04 08	06 20.15	-05 17.9	2.046	2.097	78.9	27.9	15.3		
2008 04 09	06 20.97	-04 48.0	2.074	2.109	78.1	27.7	15.3		
2008 04 10	06 21.79	-04 18.9	2.101	2.122	77.4	27.4	15.4		
2008 04 11	06 22.62	-03 50.6	2.129	2.134	76.7	27.2	15.4		
2008 04 12	06 23.46	-03 23.2	2.157	2.146	75.9	26.9	15.5		
2008 04 13	06 24.30	-02 56.5	2.185	2.159	75.2	26.7	15.5		
2008 04 14	06 25.14	-02 30.6	2.213	2.171	74.4	26.4	15.6		
2008 04 15	06 25.99	-02 05.3	2.241	2.183	73.7	26.2	15.6		
2008 04 16	06 26.84	-01 40.8	2.269	2.195	72.9	25.9	15.7		
2008 04 17	06 27.70	-01 16.9	2.297	2.208	72.2	25.7	15.7		
2008 04 18	06 28.55	-00 53.7	2.325	2.220	71.5	25.4	15.8		
2008 04 19	06 29.42	-00 31.1	2.353	2.232	70.7	25.1	15.8		
2008 04 20	06 30.28	-00 09.2	2.381	2.244	70.0	24.9	15.9		
2008 04 21	06 31.15	+00 12.2	2.409	2.257	69.2	24.6	15.9		
2008 04 22	06 32.02	+00 33.1	2.436	2.269	68.5	24.3	16.0		
2008 04 23	06 32.90	+00 53.4	2.464	2.281	67.7	24.1	16.0		
2008 04 24	06 33.77	+01 13.1	2.492	2.293	67.0	23.8	16.1		
2008 04 25	06 34.65	+01 32.4	2.520	2.306	66.2	23.5	16.1		
2008 04 26	06 35.54	+01 51.1	2.548	2.318	65.4	23.3	16.2		
2008 04 27	06 36.42	+02 09.4	2.575	2.330	64.7	23.0	16.2		

2008 04 28	06 37.31	+02 27.1	2.603	2.342	63.9	22.7	16.3
2008 04 29	06 38.20	+02 44.5	2.630	2.354	63.2	22.4	16.3
2008 04 30	06 39.09	+03 01.4	2.658	2.366	62.4	22.2	16.4