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The *International Comet Quarterly (ICQ)* is a journal devoted to news and observation of comets, published by the Smithsonian Astrophysical Observatory in Cambridge, Massachusetts. Regular issues are published 4 times per year (January, April, July, and October), with an annual *Comet Handbook* of ephemerides published normally in the first half of the year as a special fifth issue. An index to each volume normally is published in every other October issue (now in odd-numbered years); the *ICQ* is also indexed in *Astronomy and Astrophysics Abstracts* and in *Science Abstracts Section A*.

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Manuscripts will be reviewed/refereed for possible publication; authors should first obtain a copy of "Information and Guidelines for Authors" from the *ICQ* website or from the Editor. Cometary observations should be sent to the Editor in Cambridge; again, see the *ICQ* website or contact the Editor for the proper format. Those who can send observational data (or manuscripts) in machine-readable form are encouraged to do so [especially through e-mail via the Internet (ICQ@CFA.HARVARD.EDU)]. The *ICQ* has extensive information for comet observers on the World Wide Web, including the Keys to Abbreviations used in data tabulation (see URL <http://www.cfa.harvard.edu/icq/icq.html>). In early 1997, the *ICQ* published a 225-page *Guide to Observing Comets*; this edition is now out of print, but a revised edition is under preparation.

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ICQ WEBSITE

In April, the *ICQ* website address (URL) changed to <http://www.cfa.harvard.edu/icq/icq.html>.

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CORRIGENDA

- In the January 2007 issue, page 27, C/2006 M4, the first observation was by SCH04, not SCH01.
- In the April 2007 issue, page 88, Giclas obituary, third paragraph, line 4, for comparison read comparison

Review of Recent Literature: Research Concerning Comets*

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The past few installments of this series have concentrated on the results from cometary spacecraft missions such as *Stardust* and *Deep Impact*. This installment focuses on exciting results for non-spacecraft-mission comets — including two recent naked-eye comets, C/2004 Q2 (Machholz) and C/2006 P1 (McNaught). Interesting results include the discovery of a never-before-seen atomic iron tail and the identification of the most-carbon-depleted comet.

Tails

Those fortunate enough to observe C/2006 P1 (McNaught) in broad daylight near perihelion, or in its full glory in the night sky after perihelion, will not quickly forget the sight. From a vantage point proceeding and trailing the earth, a pair of recently launched spacecraft named *Solar TERrestrial RELations Observatory (STEREO) A* and *B* observed C/2006 P1 shortly after perihelion. These spacecraft will augment the research being performed by the *Solar and Heliospheric Observatory (SOHO)*. Each *STEREO* spacecraft is equipped with two visible-light wide-field cameras designated HI-1 and HI-2. The HI-1 camera covers wavelengths between 6300 and 7300 Å and has a 20° field-of-view centered 13°65' from the sun. The HI-2 camera covers a wider wavelength range of 4000 to 10000 Å and has a 70° field-of-view centered 53°35' from the sun. Similar to instruments on *SOHO*, the *STEREO* cameras will be an important tool for the study of comets at very small solar elongations.

Fulle *et al.* (2007) used images taken by the HI-1 camera on *STEREO-B* to identify an arch-like tail stretching over 3×10^7 kilometers. The tail was well separated from the main dust tail, and its orientation is consistent with neutral atoms being pushed towards the anti-solar direction by solar radiation pressure. Among expected cometary neutral atoms, only Al and Fe would be expected to display the observed tail orientation. The profile of the tail best fits an ionization lifetime of $(4.1 \pm 0.4) \times 10^4$ seconds, which is consistent with the ionization lifetime of Fe at 0.25 AU from the Sun. Assuming a neutral-atom tail that is composed of Fe, the production rate for Fe was $\sim 10^{-3}$ that of dust. This value agrees with the Fe abundance found in 81P/Wild samples collected during the *Stardust* mission.

Coma Morphology

Three recent published papers utilized variations in coma morphology to estimate the rotation rate and to map activity-source regions for comets 153P/Ikeya-Zhang and C/2004 Q2 (Machholz). Small telescopes in Italy in the 0.2- to 0.4-m size range were used by Manzini *et al.* (2007) to provide near-nightly coverage of 153P. The observations were obtained over 22 nights in 2002 March, April, and May. Variations in the position and appearance of shells, haloes, and jets in the near-nucleus region of the coma were observed. The evolution of these features are consistent with a rotation period of 1.48 ± 0.20 days.

Observations of C/2004 Q2 (Machholz) with the 1-m telescope at Lulin Observatory in Taiwan and the European Southern Observatory (ESO) 3.6-m telescope at La Silla, Chile, were reported by Lin *et al.* (2007). The Lulin telescope was equipped with four filters centered on the C₂($\Delta\nu = 0$) and NH₂($\Delta\nu = 0$) emission features, as well as the red and blue solar continuum. The ESO telescope also used the solar-continuum filters in addition to C₂($\Delta\nu = 0$) and CN($\Delta\nu = 0$) filters. The continuum observations measured an average coma dust color of 4.7% per 1000 Å (meaning that the spectrum has a red slope of 4.7 percent per 1000 Å), which is redder than typical solar colors. Two jets were observed in the gas-emission-filter observations. These jets were not observed in the dust-continuum observations.

Farnham *et al.* (2007) used the NOAO 2.1-m telescope on Kitt Peak to observe C/2004 Q2 (Machholz) in Harris-*R*-broadband and CN-narrowband filters. The two gas jets reported by Lin *et al.* (2007) were also observed by the Farnham group. The jets were found to be located in the mid-latitudes of each hemisphere and are separated from the other by 180° in longitude. Hence, the jets are located on opposite sides of the nucleus. Monitoring the variation in jet position and morphology constrained the rotation state. The nucleus of C/2004 Q2 rotates once every 17.60 ± 0.05 hours about a pole orientated towards $\alpha = 50^\circ$, $\delta = +35^\circ$.

Spectroscopy

Sweden's *Odin* spacecraft was launched on 2001 Feb. 20 to conduct astronomical and terrestrial atmospheric studies at sub-millimeter wavelengths. For astronomical observations, *Odin* uses a 1.1-m-diameter reflector to feed a radiometer

* This is the seventh installment of a semi-regular *ICQ* column; the last installment appeared in the July 2006 issue of the *ICQ*.

centered at 119 and 500 GHz (McDowell 2001). Though primarily for astrophysical applications, such as the study of galactic molecular clouds, Biver *et al.* (2007) used *Odin* to detect H₂O in 11 comets. The ¹⁶O/¹⁸O isotopic ratios in water were estimated from the production-rate ratio of water containing the two different oxygen isotopes. The ¹⁶O/¹⁸O isotopic ratio for C/2001 Q4 (NEAT), C/2002 T7 (LINEAR), C/2004 Q2 (Machholz), and 153P/Ikeya-Zhang averaged ~ 530 and is consistent with the terrestrial ¹⁶O/¹⁸O ratio. The abundance of NH₃ was also observed, though in fewer comets. With a very short photo-dissociative lifetime of 6700 seconds at 1 AU from the sun, NH₃ emission can only be observed in the innermost coma and requires comets to be close to the earth. Ammonia-to-water (NH₃/H₂O) ratios of $0.50 \pm 0.09 \%$ and $0.33 \pm 0.08 \%$ were observed in comets C/2001 Q4 and C/2002 T7, respectively; the abundance ratio is similar to that observed in other comets ($\sim 0.5\%$). In 2008, the European Space Agency will launch the *Herschel Space Observatory*. This spacecraft will be able to observe the full sub-millimeter spectrum of cometary water, greatly improving our knowledge of cometary-water composition.

The 3-m Shane telescope at Lick Observatory was used by Llangland-Shula and Smith (2007) to observe the coma of comet 96P/Machholz. Spectra covering the wavelengths 3000 to 5900 Å show 96P to be extremely depleted in C₂ and C₃ relative to NH and NH₃. Its CN abundance is even more extremely depleted relative to NH and NH₃. Though a member of the carbon-chain-depleted comets that are characterized by significant depletion in carbon molecules, they find that 96P is the most-depleted-known comet in CN.

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Subscription-Rate Increase

Though we increased subscription prices to the *ICQ* two years ago for the first time in 12 years, that increase was way overdue, and because of the dramatic increase in printing costs that occurred at that time, we must now make another increase in subscription prices. We announce the increase in rates at the *ICQ* website some time ago, but since there has been a great delay between the publication of the April 2007 issue and this issue, print readers will unfortunately not have been informed until now.

The new subscription rates are effective immediately: US\$60.00 worldwide at the regular, invoiced rate (this includes the annual *Comet Handbook*, the price being US\$45.00 without the *Handbook*); this price reflects surface-mail delivery outside North America, and first-class delivery in North America. Subscribers who do not wish to be billed, and who will keep track of when their subscription expires, may subscribe at the new special rate of US\$45.00 worldwide (the new special rate without the *Handbook* is US\$30.00); this price reflects surface-mail delivery outside North America, and first-class delivery in North America (those who desire airmail delivery outside of North America will need to add an additional US\$30.00 to these prices). The annual *Comet Handbook* will now cost US\$15.00 to *ICQ* subscribers, and for US\$25.00 to non-subscribers.

We know that the *ICQ* still performs a unique function in the community for those who are seriously interested in comets, and we hope that desire to support the *ICQ* will not abate because of the higher subscription costs. The support of our loyal readers is much appreciated, and any donations to help the work of the *ICQ* to continue its presence are very much appreciated (we gratefully acknowledge the kind donations of some anonymous donors in recent years).

We have received many glowing compliments about the appearance of the April 2007 issue, which was the first issue ever produced with high-quality color reproductions of photographs, and the first-ever issue of the *ICQ* produced in high-quality glossy paper. We are always open to hearing the ideas and suggestions of readers regarding the content of the *ICQ*. It is our goal to move toward increased high-quality publication, with more articles, more reviews of books, software, and instrumentation, and more analyses of observations, but we need the strong financial support of readers to make this goal a reality.

COMETS FOR THE VISUAL OBSERVER IN 2008

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Several short-period comets are expected to become moderately bright during 2008, including three that may reach a peak brightness as high as total visual magnitude $m_1 \sim 7$ or brighter. While at this writing (2007 Sept. 11) there are no long-period comets that are expected to become especially bright during the year, two moderately bright ones — as well as several fainter ones — should be observable.

Long-Period Comets

P/2006 S5 (Hill)

Having recently emerged into the morning sky, there have apparently been no visual observations of this comet as of this writing, and the available CCD observations suggest that it may be somewhat fainter than expected. According to the nominal projections, visual observations may be possible during the last couple of months of 2007 and the first one or two months of 2008. The comet is at opposition in mid-January 2008, and peak brightness (perhaps $m_1 \sim 13$ -14) may be achieved around that time.

C/2005 L3 (McNaught)

This distant comet was visually detectable at $m_1 \sim 14$ around the time of its opposition in mid-June 2007. After conjunction in late 2007, it has a second opposition in May 2008, and should again be visually observable for three or four months around that time; the brightness should be similar to that exhibited at the 2007 opposition.

C/2007 K3 (Siding Spring)

This comet is at opposition in August, four months after perihelion passage. Because of its small orbital inclination (16°), it remains accessible for several months, and should reach a peak brightness of perhaps $m_1 \sim 14$ around June.

C/2006 Q1 (McNaught)

In conjunction with the sun at this writing, this comet emerges into the morning sky in late 2007 and is at opposition in mid-February 2008; at that time, it will be near a declination of -50° (thus favoring southern-hemisphere observers) and perhaps at $m_1 \sim 12$. Over subsequent months, it will travel northward as it heads into the evening sky, becoming more accessible to northern-hemisphere observers; in May, it will be conveniently placed in the evening sky and near a peak brightness of perhaps $m_1 \sim 11$. By about July, it disappears into twilight.

C/2006 OF₂ (Broughton)

Despite being a year away from perihelion, this comet is already visually detectable at this writing at $m_1 \sim 14$. It should brighten by perhaps one magnitude before disappearing into sunlight around January 2008. Following conjunction, it will emerge into the morning sky around May (perhaps at $m_1 \sim 12$) and remain visually accessible to northern-hemisphere observers throughout the remainder of the year. The comet reaches a peak declination of $+61^\circ$ in November and should be near its peak brightness then (perhaps $m_1 \sim 10$); there will likely be little, if any, significant fading before opposition in late December.

C/2007 G1 (LINEAR)

After conjunction in mid-December 2007, this comet enters the morning sky by February and is at opposition in mid-June, probably near its peak brightness ($m_1 \sim 12?$) at that time. Fading should be slow after that, as the comet heads south, and — after being in conjunction (37° south of the sun) around the time of perihelion — enters southern circumpolar skies near the end of the year, perhaps still as bright as $m_1 \sim 13$.

C/2007 N3 (Lulin)

This comet's orbit is almost exactly retrograde to the earth's orbit (inclination 178°). It is in conjunction in early February 2008, and after emerging into the morning sky near the beginning of April is at opposition in late July. It then is accessible in the evening sky until about October. After a second conjunction, it re-emerges into the morning sky near the very end of the year enroute to its peak display in early 2009.

As of this writing, the comet has exhibited only very weak cometary activity, and brightness predictions are necessarily uncertain. A brightness of $m_1 \sim 11$ -12 during the post-opposition viewing season is perhaps not unreasonable, and a brightness of perhaps $m_1 \sim 9$ when it becomes visible late in the year is likewise reasonably possible.

TABLE 1.
PERIHELION INFORMATION FOR POTENTIALLY VISUAL COMETS IN 2008

Designation/Name	T (TT)	q (AU)
29P/Schwassmann-Wachmann	2004 July 10.8	5.72
C/2006 S5 (Hill)	2007 Dec. 9.7	2.63
C/2005 L3 (McNaught)	2008 Jan. 16.0	5.59
C/2005 WY ₃	2008 Jan. 27.0	1.03
8P/Tuttle	2008 Jan. 27.0	1.03
46P/Wirtanen	2008 Feb. 2.5	1.06
110P/Hartley	2008 Feb. 3.5	2.49
26P/Grigg-Skjellerup	2008 Mar. 23.7	1.12
C/2007 K3 (Siding Spring)	2008 Apr. 21.7	2.05
86P/Wild	2008 May 20.0	2.30
180P/NEAT	2008 May 26.7	2.47
15P/Finlay	2008 June 22.6	0.97
C/2006 Q1 (McNaught)	2008 July 3.8	2.76
19P/Borrelly	2008 July 22.3	1.36
6P/d'Arrest	2008 Aug. 15.0	1.35
61P/Shajn-Schaldach	2008 Sept. 6.1	2.11
C/2006 OF ₂ (Broughton)	2008 Sept. 15.7	2.43
147P/Kushida-Muramatsu	2008 Sept. 23.0	2.76
C/2007 G1 (LINEAR)	2008 Nov. 16.3	2.65
P/2001 TU ₈₀ (LINEAR-NEAT)	2008 Dec. 9.6	1.94
85P/Boethin	2008 Dec. 16.4	1.15
C/2007 N3 (Lulin)	2009 Jan. 10.7	1.21
144P/Kushida	2009 Jan. 26.94	1.44
47P/Ashbrook-Jackson	2009 Feb. 1.04	2.80

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Short-Period Comets: Brighter Objects

29P/Schwassmann-Wachmann

This remarkable comet has been unusually active for the past few years, and in fact remained in a state of almost continuous outburst throughout the 2006-2007 viewing season. At this writing it has emerged into the morning sky after conjunction and so far appears to be quiescent.

The comet is at opposition in late December 2007 and is an evening object throughout the first four or five months of 2008. After conjunction in July it emerges again into the morning sky by the end of August, en route to its subsequent opposition in January 2009. Based upon the activity it has maintained in recent years, it would seem likely that several additional outbursts could take place during this time.

8P/Tuttle

This comet has an extremely favorable return in 2008, passing 0.25 AU from the earth on January 1. It spends most of the last three months of 2007 in northern circumpolar skies, but by the latter part of December begins traveling southward rapidly. At the time of closest approach to the earth, it is located high in the evening sky at a declination of $\sim +25^\circ$, traveling southward at 4° per day and perhaps as bright as $m_1 \sim 6$. Following its passage by the earth, it continues southward, reaching declination -40° by the end of January ($m_1 \sim 7$) and entering southern circumpolar skies by the beginning of March ($m_1 \sim 9$), where it remains until fading beyond visual detectability by the end of April.

46P/Wirtanen

At this writing, this comet has already passed opposition and has become an evening-sky object; it should become visually detectable by the last two months of 2007 and be at $m_1 \sim 10-11$ by the beginning of 2008. It remains conveniently accessible in the evening sky throughout the first several months of the year, and should brighten by about one magnitude by the time of perihelion passage. Subsequently it should remain visible until April or May.

26P/Grigg-Skjellerup

After an approach to Jupiter (0.51 AU) in 1999, which increased its perihelion distance by 0.12 AU and its orbital period by 0.2 years, this comet makes its most favorable return in two decades in 2008. Initially the comet is accessible primarily from the southern hemisphere but travels north, becoming accessible from the northern hemisphere in the morning sky by the time of perihelion.

This comet, like 6P/d'Arrest (below), has in the past exhibited a light curve strongly asymmetric with respect to perihelion. If it maintains the same brightness behavior in 2008, it will likely remain too faint for visual observations until shortly before perihelion passage. It should then reach a peak brightness of $m_1 \sim 12$ shortly after perihelion and remain visually detectable for another month.

6P/d'Arrest

This comet's 2008 return is very similar to that of the extremely favorable return in 1976, when it passed 0.15 AU from the earth and reached $m_1 \sim 5$. One key difference is that the current perihelion distance (1.35 AU) is significantly larger than that in 1976 (1.16 AU) and thus the minimum earth distance is correspondingly larger (0.35 AU). The comet is at opposition in mid-July and is conveniently accessible for observations for several months on either side of that time. The post-perihelion phase of the apparition will be better placed for the southern hemisphere, as the comet travels to declination -39° in late September before heading back north.

Throughout its historical returns, this comet has exhibited a distinct asymmetry in its light curve with respect to perihelion (Marsden and Bortle 1976). If this pattern is maintained in 2008, the comet will probably not become visually observable until late June or early July ($m_1 \sim 12-13$). It will then brighten rapidly, reaching a peak brightness of $m_1 \sim 7$ in late August and early September. From that point, it will fade slowly, remaining accessible to visual observers until almost the end of the year.

85P/Boethin

This comet's observational record is somewhat spotty, being well observed at only one return (in 1986) and missed entirely at the most recent return in 1997. The 2008 return is the most favorable one since the comet's original discovery in 1975, with a minimum distance from the earth of 0.87 AU taking place in late December. The comet is at opposition in late July and is conveniently located in the evening sky around the time of perihelion. If the brightness behavior is similar to that in 1986, it should become visually detectable by about August and reach a peak brightness of $m_1 \sim 7-8$ throughout most of December.

Comet 85P/Boethin has recently been selected as the next destination of the Deep Impact spacecraft (which passed by 9P/Tempel in July 2005 and fired a projectile at the nucleus). According to the current mission plan, Deep Impact will pass 500 km from the comet's nucleus on 2008 December 5.

144P/Kushida

This comet is making its second predicted return following its discovery apparition in 1993-1994; the intervening return in 2001 was very unfavorable, and the comet was not visually observed then. The discovery in 1994 took place some four weeks after perihelion passage; at discovery it was moderately bright ($m_1 \sim 11-12$), and over the subsequent month, it brightened by about one magnitude before beginning fading.

The 2008-2009 return is geometrically quite similar to that of 1993-1994. If the comet's light curve is symmetric with respect to perihelion and if the brightness behavior is the same as at the discovery return, it should become visually observable during the latter months of 2008, being at $m_1 \sim 11$ when at opposition in mid-November and reaching a peak brightness about one magnitude brighter near the end of the year. Since it is possible that the 1994 activity was the result of either an outburst or an asymmetric light curve, it is conceivable that the comet could be distinctly fainter than these projections.

Short-Period Comets: Fainter Objects

110P/Hartley

This comet was visually observable at $m_1 \sim 14$ during the previous return in 2000-2001; at the present return the geometry is quite similar (in fact, slightly better). The comet should reach a peak brightness of $m_1 \sim 13-14$ when near opposition in mid-December 2007, and should remain visually detectable for the first one or two months of 2008.

P/2001 TU₈₀ (LINEAR-NEAT)

This comet's 2008-2009 return is essentially identical to its discovery return in 2001-2002, when it was visually observed at $m_1 \sim 14$ two months after perihelion. If the light curve is symmetric with respect to perihelion and if the brightness behavior is the same as at the discovery return, the comet may be detectable at $m_1 \sim 14$ late in 2008 and possibly slightly brighter when at opposition in early 2009.

47P/Ashbrook-Jackson

This comet's 2008-2009 return is similar geometrically to the unfavorable return in 2000-2001, during which it reached $m_1 \sim 13.5$; however, an approach to Jupiter (0.6 AU in February 2004) has increased the perihelion distance by 0.5 AU, and it is unlikely that visual observations will be obtained during this return. Opposition and peak brightness will take place in August 2008, and any visual-observation attempts should be made around that time.

Other comets

Comets 15P/Finlay and 19P/Borrelly have unfavorable returns during 2008 and, while perhaps becoming bright enough for visual observations, these will take place at small elongations and observations will remain difficult. Comet 15P may reach $m_1 \sim 12$ in June and July but will be at elongation between 40° and 45° in the morning sky. Comet 19P

attempts, include: 86P/Wild, which is returning under very favorable geometry (opposition in early June, only two weeks after perihelion passage); 180P/NEAT, making its first predicted return after discovery, which is at opposition 2.5 months before perihelion; 61P/Shajn-Schaldach, at opposition two months after perihelion; and 147P/Kushida-Muramatsu, which is at opposition 3.5 months after perihelion.

Other Objects

2005 WY₃

This object, discovered by Spacewatch in November 2005, has a distinctly cometary orbit ($e = 0.735$, $P = 17.5$ years). It has recently been recovered in the morning sky following its recent conjunction, and to date has exhibited no cometary activity but may conceivably do so as it approaches perihelion. It is at opposition in late February and nearest the earth (0.91 AU) a few days later; even if its light curve is entirely asteroidal it should still reach a peak brightness of $m_v \sim 15$ around that time. Obviously, if it turns out to be a comet, it could conceivably be somewhat brighter than this.

REFERENCES

Marsden, B. G.; and J. E. Bortle (1976). *Sky Telesc.* **52**, 10.

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ADDENDUM.

In the April 2007 issue, page 80, the caption to the photograph by Garradd should have noted that comet C/2006 P1 (with its fan tail) is located just above the cloud bank, while the Small Magellanic Cloud is above center, and the Large Magellanic Cloud is near top left.

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Tabulation of Comet Observations

As noted in page 14 of the January issue, we have been planning to phase out the specific tabulated observations in the printed *ICQ*. Due to our ever-increasing costs in printing and postage, and to the fact we now post all tabulated data at the *ICQ* website (<http://www.cfa.harvard.edu/icq/icqobs.html>), we are beginning immediately to cease the publication in print of the individual observations and instead provide a summary that lists the first and last dates of reported tabulated data (with corresponding magnitudes) for each comet and each observer. This should reduce the number of pages devoted to tabulated observations in each issue by about two-thirds, and also provide a format that will be more appropriate to print form; it is expected that most users who wish to use *ICQ* tabulated data for analyses will either take the data directly from the *ICQ* website or else ask the *ICQ* editor to have such data e-mailed directly. We still divide the tabulated-data summaries by visual and non-visual (CCD) observations. Quite some thought has gone into this whole process, and comments are still welcome from readers. An anticipated near-future goal in this process — not yet implemented due to time constraints — is the inclusion of graphical light curves and perhaps a textual summary for each comet; it is unclear yet as to whether such a summary might *replace* in print the descriptive information (in which case the descriptive information supplied by the observers would have to be posted at the *ICQ* website also, but a standard format for doing so that differs from the current practice in print might be desired).

Previously unpublished descriptive information by Japanese observers, to complement the tabulated data published in the Jan. 2007 issue (mainly concerning observations spanning 2006 Oct.-2007 Jan.) are included in this issue.

Descriptive Information, to complement the Tabulated Data (all times UT):

See the July 2001 issue (page 98) for explanations of the abbreviations used in the descriptive information.

◊ Comet 2P/Encke ⇒ 2007 Feb. 14.82 and Mar. 11.83: mountain location; very clear sky; zodiacal light [GON05]. Feb. 11.83: alt. 10° [GON05]. Mar. 6.42: Guide 8.0 software used for comp.-star mags; comp. star has $B-V = +0.73$ [TSU02]. Mar. 31.82: comet invisible; alt. 8°, solar alt. -12° [GRA04]. Apr. 5.83: moderately condensed object; well visible despite low alt. of only 6° in twilight [BOU]. Apr. 7.80: comet alt. ~ 7°, in twilight [LEH]. Apr. 7.84: difficult obs.; 2P only glimpsed, but detected at correct position; comet appeared about 1.0 mag fainter than HD 14305; alt. 4° and twilight (solar alt. -14°) [GRA04]. Apr. 12.84 and 14.84: comet invisible; alt. 4°, solar alt. -12° [GRA04]. Apr. 13.85 and 17.85: mountain location, very clear sky; astron. twilight [GON05]. Apr. 13.85: alt. 6° [GON05]. Apr. 17.85: alt. 5° [GON05]. May 9.35: comp. stars have $V = 7.71$ ($B-V = +0.07$) and 7.84 ($+0.40$); moonlight [AMO01]. May 23.75: enhanced through Swan Band filter [SEA]. May 26.33: comp. stars have $V = 10.60$ ($B-V = +0.41$) and 10.96 ($+0.77$) [AMO01]. May 27.77: $B-V$ values of comp. stars were +0.45 and +0.48 [KAD02]. July 11.73: CCD exposures w/ 0.5-m Uppsala Schmidt telescope show a tail on either side of a circular coma (tail length 2'0 in p.a. 70°, and 1'6 in p.a. 240°); total mag 15.4; images stacked w/ Astrometrica 4.4.1.364 software (ref: UCAC-2 catalogue); astrometry

reported to Minor Planet Center [R. H. McNaught, Siding Spring Observatory, Coonabarabran, NSW, Australia].

◊ *Comet 4P/Faye* ⇒ 2006 Apr. 20.81: four CCD exposures w/ 0.5-m Uppsala Schmidt telescope yield mag 16.3-17.2 (ref: UCAC-2 catalogue) [R. H. McNaught, Siding Spring Observatory, Coonabarabran, NSW, Australia]. Aug. 17.96, Sept. 5.99, 9.94, 11.88, 13.86, and 2007 Mar. 25.79: moonlight [SRB]. Sept. 5.99: a star of mag 13.2 located 0'65 from the central cond. [SRB]. Sept. 11.88, 13.86, and Nov. 16.77: low alt. [SRB]. Sept. 13.86: a star of mag 13.7 located 3'15 from the central cond. [SRB]. Sept. 23.94: a star of mag 14.0 located 1'75 from the central cond.; bright tail streamer > 6'5 long in p.a. 280° [SRB]. Sept. 24.95: a star of mag 14.9 located 1'9 from the central cond.; bright tail streamer > 7' long in p.a. 283° [SRB]. Sept. 25.90: stars of mag 14.2 and 14.4 located 1'7 and 2'3, respectively, from the central cond.; bright tail streamer > 6' long in p.a. 285° [SRB]. Oct. 25.65, 27.58, 31.57, Nov. 17.53, 21.46, Dec. 15.51, 19.45, and 31.55: **Guide 8.0** software used for comp.-star mags [TSU02]. Oct. 25.65 and 31.57: comp. star has $B-V = +0.44$ [TSU02]. Oct. 27.58: comp. star has $B-V = +0.54$ [TSU02]. Oct. 28.09: **Guide 8.0** software used for comp.-star mags [NAG09]. Oct. 30.97: **Guide 8.0** software used for comp.-star mags [TOT03]. Nov. 12.52, 24.49, Dec. 10.42, and 15.45: **Guide 8.0** software used for comp.-star mags [YOS02]. Nov. 12.56, 20.64, 24.61, Dec. 18.41, 23.54, and 2007 Jan. 10.40: **StellaNavigator (ver. 6.1)** software used for comp.-star mags [NAG08]. Nov. 16.77: haze; a star of mag 11.4 located 1'3 from the central cond. [SRB]. Nov. 17.53 and 21.46: comp. star has $B-V = +0.50$ [TSU02]. Nov. 17.75 and Dec. 19.63: **Guide 8.0** software used for comp.-star mags [NAG04]. Nov. 23.97: comp. stars have $V = 9.19$ ($B-V = +0.37$) and 9.60 ($+0.68$) [AMO01]. Nov. 24.61: $B-V$ values of comp. stars are +0.64, +0.68, and +0.68 [NAG08]. Nov. 24.81: small, faint patch with strong central core surrounded by thin nebulosity; comp.-star mags taken from *Guide 6* software [STR03]. Nov. 27.92: **Guide 7.0** software used for comp.-star mags [SAN07]. Dec. 15.51 and 19.45: comp. star has $B-V = +0.39$ [TSU02]. Dec. 23.40: "comet still easy to see; it seems very diffuse w/ lower magnif., but the central cond. seems strong w/ higher magnification; I could not see it on Dec. 22 because of involvement w/ a star of mag 8.5" [YOS04]. Dec. 23.54: $B-V$ values of comp. stars are +0.62 and +0.62 [NAG08]. Dec. 26.14: bright central cond. [ROB06]. Dec. 31.55: comp. star has $B-V = +0.64$ [TSU02]. 2007 Jan. 5.75: small, circular, quite condensed, and suddenly much brighter in the center (which is quite a prominent point); comp.-star mags taken from *Guide 6* software [COO02]. Jan. 8.51, Feb. 11.54, Mar. 6.45, Apr. 11.45, 23.46, and May 7.46: **Guide 8.0** software used for comp.-star mags [TSU02]. Jan. 8.51: comp. star has $B-V = +0.58$ [TSU02]. Jan. 10.40: $B-V$ values of comp. stars are +0.64, +0.67, and +0.78 [NAG08]. Feb. 4.43: **StellaNavigator (ver. 6.1)** software used for comp.-star mags; $B-V$ values of comp. stars were +0.63, +0.74, and +0.82 [NAG08]. Feb. 11.54: comp. star has $B-V = +1.00$ [TSU02]. Feb. 12.76: comet not positively identified; fainter than GSC-catalogue stars 65951 and 659131; comp.-star mags taken from *Guide 6* software [COO02]. Feb. 20.54: **Guide 8.0** software used for comp.-star mags [YOS02]. Mar. 6.45: comp. star has $B-V = +0.69$ [TSU02]. Mar. 12.78: a star of mag 13.1 located 0'2 from the central cond. [SRB]. Apr. 11.45: comp. star has $B-V = +0.65$ [TSU02]. Apr. 11.81: dense star field [SRB]. Apr. 23.46: comp. star has $B-V = +0.71$ [TSU02]. May 7.46: comp. star has $B-V = +0.53$ [TSU02].

◊ *Comet 8P/Tuttle* ⇒ 2007 July 23.69: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.38$ [TSU02].

◊ *Comet 17P/Holmes* ⇒ 2007 May 13.45 and 14.45: CCD images taken remotely with a 25-cm $f/3.4$ reflector located near Mayhill, NM, U.S.A., show a cond. of mag 15.2-16.1 and a coma nearly 15" in dia., elongated toward p.a. 280° [Ernesto Guido and Giovanni Sostero, Castellammare di Stabia, Italy]. July 14.09: nearby field stars checked via Digitized Sky Survey; comp.-star mags taken from Henden photometry near TX Tri [GON05]. July 17.01: stellar appearance [SRB]. July 23.75: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.66$ [TSU02]. July 25.12: mountain location, very clear sky; nearby field stars checked via Digitized Sky Survey; comp.-star mags taken from Henden photometry near WY Tri [GON05].

◊ *Comet 29P/Schwassmann-Wachmann* ⇒ 2006 Aug. 17.97, Sept. 6.00, 9.96, 11.98, 13.91, 25.88, and 2007 Mar. 25.81: moonlight [SRB]. 2006 Aug. 17.97, Sept. 11.98, 13.91, and 25.88: low alt. [SRB]. Sept. 9.96: a star of mag 16.1 located 0'5 from the central cond. [SRB]. Sept. 23.92: elongated coma in p.a. 269°, a star of mag 16.2 located 0'6 from the central cond. [SRB]. Sept. 24.93: a star of mag 16.1 located 0'3 from the central cond. [SRB]. Sept. 25.88: a star of mag 14.2 located 1'2 from the central cond.; dense star field [SRB]. Nov. 15.08: comp. stars have $V = 11.46$ ($B-V = +1.29$) and 12.17 ($+0.75$) [AMO01]. Nov. 16.75: low alt.; haze; dense star field; stars of mag 12.1 and 12.0 located 0'9 and 1'2, respectively, from the central cond. [SRB]. Nov. 21.54 and Dec. 19.53: **Guide 8.0** software used for comp.-star mags [TSU02]. Nov. 21.54: comp. star has $B-V = +0.59$ [TSU02]. Nov. 24.63: **StellaNavigator (ver. 6.1)** software used for comp.-star mags; $B-V$ values of comp. stars are +0.74 and +0.80 [NAG08]. Dec. 19.53: comp. star has $B-V = +0.67$ [TSU02]. Dec. 22.53: "very faint, near limit, but I could see a faint diffuse object" [YOS04]. Dec. 23.44: "possibly invisible due to a nearby star of mag 14.6" [YOS04]. 2007 Jan. 8.54 and Feb. 11.53: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.89$ [TSU02]. Feb. 4.84: evolving after the recent outburst [GON05]. Feb. 17.81: large, diffuse coma; star of mag 13.0 and 14.7 located 0'85 and 0'9, respectively, from the central cond. [SRB]. Mar. 16.89: new outburst [GON05]. Apr. 11.85: elongated central cond. [SRB]. Apr. 14.86, 15.87, and 25.83: alt. $\sim 10^\circ$ [SRB]. Apr. 14.86: early phase of an outburst [SRB]. Apr. 15.87: a star of mag 15.0 located 0'6 from the central cond. [SRB]. Apr. 25.83: very diffuse coma without central cond. [SRB].

◊ *Comet 50P/Arend* ⇒ 2007 July 17.03: low alt. [SRB]. July 23.73: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.51$ [TSU02].

◊ *Comet 71P/Clark* ⇒ 2006 Oct. 25.48: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.61$ [TSU02].

◊ *Comet 73P/Schwassmann-Wachmann [comp. C (stated or presumed)]* \Rightarrow 2006 Apr. 23.88: almost-stellar central cond.; dia. 1.2' at 290 \times ; tear-drop shaped in p.a. \sim 225 $^\circ$, and traced w/ averted vision to \sim 2'; tail clearly split around 4' from the nucleus, where it is more-or-less 4' in width, with a faint star of mag 14 imbedded on the E edge; brightest part of tail to the NW is \sim 8' long, but w/ averted vision it extends out of the field-of-view in 40-cm T (102 \times) [STR03]. Apr. 23.88 and 28.88: *Guide 6* software used for comp.-star mags [STR03]. Apr. 25.87, May 6.94, and 8.09: *Guide 6* software used for comp.-star mags [COO02]. Apr. 25.87: small and quite condensed; strong, nearly stellar central cond.; elongated coma extending into fan-shaped tail whose center is at p.a. 215 $^\circ$; however, conditions not good after protracted period of cloud [COO02]. Apr. 28.88: more diffuse than previously; coma extends to a soft, hazy fan \sim 30' long in p.a. 230 $^\circ$, split around 6' from the nuclear cond., where it is more-or-less 12' in width [STR03]. May 6.94: coma small and compact, punctuated by stellar central cond., extending into narrow fan-shaped tail [COO02]. May 8.09: "coma less condensed than prev.; more spurious outer coma with strong central cond.; slight haze; in 10 \times 50 B, $m_1 = 7.0$, an elongated patch that is little condensed (DC = 3)" and elongated towards p.a. 231 $^\circ$ [COO02]. May 10.12: much fainter than fragment 'B' and less condensed, the tail slightly longer and narrower; appears as an elongated smudge in 10 \times 50 B; in 20-cm L (83 \times), central cond. less evident and definitely not stellar in appearance [COO02]. May 28.14: in 10 \times 50 B, faint, elongated patch not much condensed; tail is a narrow fan that is bright to 23' and fainter to 36' [COO02]. Oct. 26.63: *Guide 8.0* software used for comp.-star mags; comp. star has $B-V = +0.44$ [TSU02].

◊ *Comet 73P/Schwassmann-Wachmann [comp. B]* \Rightarrow 2006 May 6.94: coma appears as a faint, elongated patch extending into narrow fan-shaped tail; *Guide 6* software used for comp.-star mags [COO02]. May 10.10: coma appears stellar in 20-cm L (83 \times); less condensed in 10 \times 50 B; strong, small, central cond. surrounded by small brightish coma; short, broad tail; tear-drop shaped [COO02]. May 28.12: much faded since last obs. on May 10.10, and much fainter than fragment 'C'; tail is a narrow fan, brightish for first 20', then fainter to 30' [COO02].

◊ *Comet 76P/West-Kohoutek-Ikemura* \Rightarrow 2006 Oct. 25.72, Nov. 21.68, Dec. 19.60, and 31.65: *Guide 8.0* software used for comp.-star mags [TSU02]. Oct. 25.72: comp. star has $B-V = +0.55$ [TSU02]. Nov. 21.68: comp. star has $B-V = +0.60$ [TSU02]. Dec. 19.60: comp. star has $B-V = +0.51$ [TSU02]. Dec. 31.65: comp. star has $B-V = +0.26$ [TSU02]. 2007 Feb. 12.57 and Mar. 6.54: *Guide 8.0* software used for comp.-star mags [TSU02]. Feb. 12.57: comp. star has $B-V = +0.44$ [TSU02]. Mar. 6.54: comp. star has $B-V = +0.56$ [TSU02].

◊ *Comet 84P/Giclas* \Rightarrow 2006 Oct. 25.70, Nov. 21.65, and Dec. 31.62: *Guide 8.0* software used for comp.-star mags [TSU02]. Oct. 25.70: comp. star has $B-V = +0.58$ [TSU02]. Nov. 21.65: comp. star has $B-V = +0.49$ [TSU02]. Dec. 23.60: clouds; "I could not observe it on Dec. 22 because of involvement w/ a star of mag 11.6" [YOS04]. Dec. 31.62: comp. star has $B-V = +0.61$ [TSU02]. 2007 Jan. 9.57: *Guide 8.0* software used for comp.-star mags; comp. star has $B-V = +0.28$ [TSU02].

◊ *Comet 87P/Bus* \Rightarrow 2007 May 7.56: *Guide 8.0* software used for comp.-star mags; comp. star has $B-V = +0.67$ [TSU02].

◊ *Comet 96P/Machholz* \Rightarrow 2007 Apr. 3.4875 and 3.6375: mag 3.4 as measured from SOHO-camera website images [Syuichi Nakano, Sumoto, Japan]. Apr. 9.81: $B-V$ values of comp. stars were +0.44 and +0.74; in bright twilight at low alt., through clouds; astrometry sent to the Minor Planet Center [KAD02]. Apr. 11.11: no object detected close to 96P's predicted position; limiting mag based on the visibility of nearby stars; alt. 5 $^\circ$; solar alt. -11 $^\circ$ [GRA04]. Apr. 13.18, 18.16, and May 9.05: mountain location; very clear sky [GON05]. Apr. 13.18: astron. twilight [GON05]. Apr. 14.10: comet not seen near its ephemeris position; faintest visible stars near comet were the pair HD 225150 and HD 225138; alt. 7 $^\circ$ and solar alt. -12 $^\circ$ [GRA04]. Apr. 14.79: also tails 5.5 long in p.a. 306 $^\circ$ and 2' long in p.a. 185 $^\circ$; $B-V$ values of comp. stars were +0.43, +0.49, and +0.89 [KAD02]. Apr. 14.80: *The Sky (ver. 5)* software used for comp.-star mags [MIT]. Apr. 15.12: comet low (alt. 8 $^\circ$) in twilight [BOU]. Apr. 15.13: very low and difficult due to bright morning sky [DIJ]. Apr. 16.81 and 28.79: *Guide 8.0* software used for comp.-star mags [YOS02]. Apr. 17.09: comet only barely visible, but it was detected at the correct position; nearby stars down to 11th mag were visible; alt. 9 $^\circ$; solar alt. -12 $^\circ$ [GRA04]. Apr. 17.12: w/ 20-cm T (50 \times), surprisingly easy object despite low alt. (11 $^\circ$) and twilight (sun alt. -14 $^\circ$); coma strongly condensed toward center; outer coma rather diffuse; at 80 \times , stellar false nucleus of mag \sim 11.0 [KAM01]. Apr. 18.16: alt. 11 $^\circ$ [GON05]. Apr. 19.12: w/ 20-cm T (50 \times), immediately seen despite low alt. (12 $^\circ$) and twilight (sun alt. -15 $^\circ$); central cond. not as conspicuous as two nights ago; at 111 \times , no false nucleus brighter than mag 11.5 discernible [KAM01]. Apr. 19.79, 28.78, and May 14.70: *Guide 8.0* software used for comp.-star mags [NAG04]. Apr. 19.80, May 14.74, June 19.65, and 23.56: *Guide 8.0* software used for comp.-star mags [TSU02]. Apr. 20.07: faint, but seen at correct position; alt. 9 $^\circ$; astron. twilight (solar alt. -13 $^\circ$) [GRA04]. Apr. 20.12: w/ 20-cm T (50 \times), more difficult than on Apr. 19.12, mainly because of slightly hazy conditions near the horizon; coma a bit less condensed than on Apr. 19.12 [KAM01]. Apr. 25.77, May 2.77, and 19.75: *StellaNavigator (ver. 8)* software used for comp.-star mags [NAG08]. Apr. 26.08: w/ 30-cm T (75 \times), coma significantly condensed toward center; at 242 \times , small knot of material w/o a recognizable stellar false nucleus [KAM01]. Apr. 26.10: low alt.; twilight [SRB]. Apr. 28.76 and 29.76: "much brighter and much more strongly condensed than I had expected (more strongly condensed than comet C/2007 E2); easy to see" [YOS04]. May 2.77: $B-V$ values of comp. stars were +0.57, +0.85 and +0.88 [NAG08]. May 9.05: alt. 15 $^\circ$ [GON05]. May 14.74: comp. star has $B-V = +0.69$ [TSU02]. May 18.01: comet just a fairly large, very diffuse glow [BOU]. May 26.72: seen as a faint, diffuse, nebulous object in a dense area of background stars [YOS04]. June 12.98: dense star field; bright central cond. with diameter 20" and diffuse outer coma [SRB]. June 19.65: another tail 5' long in p.a. 144 $^\circ$; comp. star has $B-V = +0.68$ [TSU02]. July 15.97: low alt.; diffuse with a dim central cond. [SRB]. July 23.56: another 2'-long southward tail visible; comp. star has $B-V = +0.73$ [TSU02].

◊ *Comet 99P/Kowal* \Rightarrow 2007 Apr. 13.64-13.66: 20-sec CCD exposures w/ 0.5-m Uppsala Schmidt telescope show

coma dia. $\sim 20''$ (mag 16.5-16.6) and tail $\sim 1''$ long in p.a. 300° [R. H. McNaught, Siding Spring Observatory, Coonabarabran, NSW, Australia]. May 14.53 and 19.56: **Guide 8.0** software used for comp.-star mags [TSU02]. May 14.53: comp. star has $B-V = +0.59$ [TSU02]. May 19.56: comp. star has $B-V = +0.48$ [TSU02]. July 11.47: CCD exposures w/ 0.5-m Uppsala Schmidt telescope show a circular and diffuse coma of total mag 17.1 with no tail; images stacked w/ **Astrometrica 4.4.1.364** software (ref: UCAC-2 catalogue); astrometry reported to Minor Planet Center [R. H. McNaught, Siding Spring Observatory].

◊ *Comet 112P/Urata-Nijijima* \Rightarrow 2006 Oct. 27.64: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.94$ [TSU02].

◊ *Comet 117P/Helin-Roman-Alu* \Rightarrow 2006 Oct. 26.55: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.67$ [TSU02]. 2007 July 2.82: CCD exposures w/ 0.5-m Uppsala Schmidt telescope, stacked w/ **Astrometrica 4.4.1.364** software, show a straight and fairly narrow tail $30''$ long in p.a. 235° and total mag 16.9 (ref: UCAC-2 catalogue); astrometry reported to Minor Planet Center [R. H. McNaught, Siding Spring Observatory, Coonabarabran, NSW, Australia]. July 10.78: CCD exposures w/ 0.5-m Uppsala Schmidt telescope, stacked w/ **Astrometrica 4.4.1.364** software, show the comet to be nearly asteroidal with a narrow fanning tail $1\frac{1}{5}$ long in p.a. 240° and total mag 16.9 (ref: UCAC-2 catalogue); astrometry reported to MPC [R. H. McNaught, Siding Spring Observatory].

◊ *Comet 125P/Spacewatch* \Rightarrow 2007 May 7.54, 11.48, and July 18.48: **Guide 8.0** software used for comp.-star mags [TSU02]. May 7.54: comp. star has $B-V = +0.49$ [TSU02]. May 11.48: comp. star has $B-V = +0.96$ [TSU02]. July 18.48: comp. star has $B-V = +0.57$ [TSU02].

◊ *Comet 133P/Elst-Pizarro = minor planet (7968)* \Rightarrow 2007 June 13.09: "looks completely asteroidal on a 40-min CCD exp. made w/ the 36-cm f/2 reflector" at Observatori Astronomic de Mallorca, Costitx, Balears, Spain; mag $R = 19.5$ [observers J. L. Ortiz and N. F. Morales; measurers R. Stoss, A. Cikota, and S. Cikota; communicator R. Stoss].

◊ *Comet 136P/Mueller* \Rightarrow 2007 July 21.1: twenty-eight stacked 120-sec CCD exposures taken with a 45-cm f/4.4 L show a coma of total mag "almost" 18.3 and nearly $20''$ in dia., w/ a broad tail nearly $15''$ long toward p.a. 260° ; astrometry publ. on *Minor Planet Suppl.* 1760266 [L. Donato, E. Guido, and G. Sostero, Remanzacco, Italy]. July 22.04-22.07: thirty-five stacked 120-sec CCD exposures, obtained as on July 21.1 (see above), show a coma almost $22''$ in dia. (total mag "nearly" 18.2) and a tail nearly $20''$ long toward the W [Donato *et al.*].

◊ *Comet 173P/Mueller* \Rightarrow 2006 Nov. 21.57: **Guide 8.0** software used for comp.-star mags [TSU02]. Nov. 21.57: comp. star has $B-V = +0.49$ [TSU02]. Dec. 19.55 and 31.59: comp. star has $B-V = +0.44$ [TSU02]. 2007 Jan. 9.54, Feb. 12.44, 15.48, and Mar. 6.49: **Guide 8.0** software used for comp.-star mags [TSU02]. Jan. 9.54: comp. star has $B-V = +0.53$ [TSU02]. Feb. 12.44 and 15.48: comp. star has $B-V = +0.75$ [TSU02]. Mar. 6.49: comp. star has $B-V = +0.55$ [TSU02].

◊ *Comet 177P/2006 M3 (Barnard)* \Rightarrow 2006 July 20.46: very large coma but considerably diffuse; slight central cond. through 40-cm L [MAT08]. July 21.42: appears slightly less conspicuous than on July 20 [MAT08]. Aug. 4.94 and 5.92: very diffuse; twilight, solar alt. -13° [KAR02]. Aug. 5.92: located $2\frac{7}{8}$ SE of M13 [KAR02]. Aug. 17.93: very diffuse, round coma; no central cond.; clear, transparent sky; light pollution of Uppsala, Sweden [WAR01]. Sept. 5.89: stars of mag 9.5 and 11.3 located $0\frac{7}{8}$ and $0\frac{9}{8}$, respectively, from the central cond.; moonlight [SRB]. Sept. 9.81: stars of mag 12.4 and 13.6 located $1\frac{6}{8}$ and $2\frac{0}{8}$, respectively, from the central cond.; moonlight [SRB]. Sept. 11.81: stars of mag 15.1 and 13.2 located $0\frac{9}{8}$ and $1\frac{7}{8}$, respectively, from the central cond.; moonlight [SRB]. Sept. 13.82: a star of mag 12.1 located $1\frac{2}{8}$ from the central cond. [SRB]. Sept. 22.80: **Guide 7.0** software used for comp.-star mags [SAN07]. Sept. 23.84: a star of mag 15.1 located $1'$ from the central cond. [SRB]. Sept. 24.86: a star of mag 12.4 located $0\frac{7}{8}$ from the central cond. [SRB]. Sept. 25.79: stars of mag 12.1 and 10.0 located $0\frac{6}{8}$ and $1\frac{8}{8}$, respectively, from the central cond. [SRB]. Sept. 30.88: **Guide 8.0** software used for comp.-star mags [NAG09]. Oct. 16.49, 25.53, and 27.49: **Guide 8.0** software used for comp.-star mags [TSU02]. Oct. 16.49: comp. star has $B-V = +0.51$ [TSU02]. Oct. 25.53 and 27.49: comp. star has $B-V = +0.39$ [TSU02]. Nov. 11.81: haze [SRB].

◊ *Comet 178P/Hug-Bell* \Rightarrow 2006 Nov. 20.41-20.42: three CCD images w/ a 0.30-m T show a faint tail $\sim 40''$ - $50''$ long in p.a. $\sim 276^\circ$; mag of central cond. 18.5-18.8 (UCAC-2 catalogue apparently used for comp.-star mags); astrometry contributed to Minor Planet Center [G. Hug, Scranton, KS, U.S.A.]. Nov. 21.72: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.60$ [TSU02]. Dec. 1.41-1.42: three CCD images w/ a 0.30-m T show a short tail that is a bit more pronounced (apparently with reference to his Nov. 20 data — see above) — $20''$ - $30''$ long spanning a fan-shaped angle of $\sim 25^\circ$ and centered at roughly p.a. 280° ; mag of central cond. 18.1-19.0 (UCAC-2 catalogue apparently used for comp.-star mags); astrometry contributed to Minor Planet Center [G. Hug, Scranton, KS, U.S.A.].

◊ *Comet 181P/2006 U4 (Shoemaker-Levy)* \Rightarrow 2006 Nov. 21.38, Dec. 19.38, and 31.45: **Guide 8.0** software used for comp.-star mags [TSU02]. Nov. 21.38: comp. star has $B-V = +0.65$ [TSU02]. Nov. 23.96: limiting mag 13.9 [AMO01]. Dec. 19.38: comp. star has $B-V = +0.42$ [TSU02]. Dec. 31.45: comp. star has $B-V = +0.39$ [TSU02].

◊ *Comet 184P/2007 A1 (Lovas)* \Rightarrow 2007 Jan. 15.1: four co-added 80-sec CCD exposures w/ 68-cm Schmidt telescope show a diffuse coma of dia. $16''$ and a possible tapered tail $16''$ long in p.a. 65° ; good seeing and transparency; alt. 30° in twilight [A. R. Gibbs, Catalina Sky Survey]. Feb. 11.42: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.70$ [TSU02].

◊ *Comet 185P/2007 A3 (Petriew)* \Rightarrow 2007 Feb. 11.40, 12.40, 15.40, Mar. 8.41, and Apr. 23.45: **Guide 8.0** software

used for comp.-star mags [TSU02]. Feb. 11.40 and 12.40: comp. star has $B-V = +0.13$ [TSU02]. Feb. 14.80, Mar. 10.83, and 16.85: mountain location; very clear sky; zodiacal light [GON05]. Feb. 14.80: alt. 10° [GON05]. Feb. 15.40: comp. star has $B-V = +1.00$ [TSU02]. Mar. 8.41: comp. star has $B-V = +0.45$ [TSU02]. Mar. 10.83: alt. 12° [GON05]. Mar. 13.42: **StellaNavigator (ver. 8)** software used for comp.-star mags; $B-V$ values of comp. stars were $+0.61$, $+0.64$, and $+0.89$ [NAG08]. Mar. 16.85: alt. 8° [GON05]. Apr. 14.81 and 15.81: alt. $< 10^\circ$; twilight [SRB]. Apr. 15.81: a star of mag 13.8 located $0.5'$ from the central cond. [SRB]. Apr. 23.45: comp. star has $B-V = +0.91$ [TSU02].

◊ *Comet 186P/2007 B3 (Garradd)* \Rightarrow 2007 May 6.61: CCD exposures w/ 0.5-m Uppsala Schmidt telescope show the comet to be almost stellar with a $20''$ tail in p.a. 355° ; images stacked w/ **Astrometrica 4.4.1.364** software; astrometry reported to Minor Planet Center [R. H. McNaught, Siding Spring Observatory, Coonabarabran, NSW, Australia]. May 19.46: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.63$ [TSU02].

◊ *Comet 189P/2007 N2 (NEAT)* \Rightarrow 2007 July 16.00: CCD image taken with 40-cm $f/4.5$ L shows diffuse coma of dia. $\sim 10''$ and tail $\sim 15''$ long in p.a. 135° [G. Lombardi and E. Pettarin, Farra d'Isonzo, Italy]. July 16.16: CCD images w/ 61-cm $f/16$ reflector yield mag 16.0; coma $20'' \times 30''$, elongated in direction of the $30''$ tail (p.a. 120° - 140°) — “fairly broad in width w/ a heavier concentration on the S side” [James W. Young, Table Mountain Observatory, Wrightwood, CA]. July 27.46: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.47$ [TSU02].

◊ *Comet C/2002 VQ₉₄ (LINEAR)* \Rightarrow 2006 Dec. 29.83: **Guide 8.0** software used for comp.-star mags; $B-V$ values of comp. stars are $+0.61$, $+0.65$, and $+0.79$; possible broad tail in p.a. 100° [YOS02]. 2007 Apr. 25.96: moonlight [SRB]. May 7.63 and June 19.59: **Guide 8.0** software used for comp.-star mags [TSU02]. May 7.63: comp. star has $B-V = +0.70$ [TSU02]. June 19.59: comp. star has $B-V = +0.51$ [TSU02].

◊ *Comet C/2003 WT₄₂ (LINEAR)* \Rightarrow 2006 Dec. 21.85: **Guide 8.0** software used for comp.-star mags; $B-V$ values of comp. stars are $+0.73$, $+0.75$, and $+0.96$ [YOS02]. 2007 Feb. 12.65, May 7.58, 15.49, and 19.48: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.38$ [TSU02]. Feb. 12.65: comp. star has $B-V = +0.87$ [TSU02]. Mar. 12.91: fan tail [SRB]. Mar. 25.94 and Apr. 25.92: moonlight [SRB]. May 7.58, 15.49, and 19.48: comp. star has $B-V = +0.38$ [TSU02].

◊ *Comet C/2004 B1 (LINEAR)* \Rightarrow 2005 Dec. 3.76: comet not visible [COO02]. 2006 Aug. 17.96: two stars very close to the central cond. [SRB]. Sept. 9.76: moonlight; low alt. [SRB]. Sept. 23.79: low alt. [SRB]. Dec. 21.88 and 29.85: **Guide 8.0** software used for comp.-star mags; $B-V$ values of comp. stars are $+0.61$, $+0.68$, and $+0.79$ [YOS02].

◊ *Comet C/2005 B1 (Christensen)* \Rightarrow 2006 Sept. 9.92: a star of mag 15.6 located very close to the central cond. [SRB]. Sept. 9.92 and 13.90: moonlight [SRB].

◊ *Comet C/2005 E2 (McNaught)* \Rightarrow 2005 Dec. 3.76: small but compact coma; easily visible; appears like a slightly defocused star; **Guide 6** software used for comp.-star mags [COO02]. 2007 Feb. 12.61: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.48$ [TSU02]. Feb. 19.17-19.21: with 30-cm $f/9.7$ T, CCD images stacked together totalling 30 min of exposure time, revealing a tail $\geq 24'$; astrometry reported to Minor Planet Center [D. T. Durig, Sewanee, TN, U.S.A.]. Apr. 14.73: **The Sky (ver. 5)** software used for comp.-star mags [MIT]. Apr. 16.80, 18.72, and 19.78: **Guide 8.0** software used for comp.-star mags [TSU02].

◊ *Comet C/2005 EL₁₇₃ (LONEOS)* \Rightarrow 2007 Feb. 12.49: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.48$ [TSU02].

◊ *Comet C/2005 L3 (McNaught)* \Rightarrow 2007 May 26.70: “looked similar to a faint star, somewhat fainter than a nearby star of mag 14.6; very tiny” [YOS04]. June 20.05: mountain location; very clear sky; nearby field stars checked via Digitized Sky Survey [GON05]. June 20.05 and July 25.05: comp.-star mags taken from Henden photometry near RS Oph [GON05]. July 15.99: low alt. [SRB]. July 16.93: a star of mag 16.2 located $0.4'$ from the central cond. [SRB]. July 23.64: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.69$ [TSU02].

◊ *Comet P/2005 SB₂₁₆ (LONEOS)* \Rightarrow 2007 Feb. 11.58: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.33$ [TSU02]. Mar. 25.88: moonlight [SRB].

◊ *Comet C/2005 YW (LINEAR)* \Rightarrow 2006 Dec. 29.88: **Guide 8.0** software used for comp.-star mags; $B-V$ values of comp. stars are $+0.47$, $+0.63$, and $+0.69$ [YOS02].

◊ *Comet C/2006 A1 (Pojmanski)* \Rightarrow 2006 Jan. 28.48: low alt. [MAT08]. Feb. 28.77: photo reveals tail $> 8^\circ$ long [MAT08]. Sept. 11.83: moonlight [SRB].

◊ *Comet P/2006 F1 (Kowalski)* \Rightarrow 2007 June 14.0: w/ Konkoly Observatory 0.60-m Schmidt telescope, comet shows a star-like coma (total mag $R = 18.7 \pm 0.2$) and $10''$ tail in p.a. 250° on co-added 480-sec image [SAR02].

◊ *P/2006 HR₃₀ (Catalina)* \Rightarrow 2006 Aug. 17.89, Sept. 5.96, 9.86, 11.86, Nov. 16.73, 2007 Mar. 12.84, 25.90, and Apr. 25.85: stellar appearance [SRB]. 2006 Sept. 5.96, 9.86, 11.86, and 2007 Apr. 25.85: moonlight [SRB]. Sept. 11.86: a star of mag 14.9 located $0.4'$ from the central cond. [SRB]. Oct. 25.50, Nov. 3.45, 21.41, Dec. 15.45, and 31.49: **Guide 8.0** software used for comp.-star mags [TSU02]. Oct. 25.50: comp. star has $B-V = +0.38$ [TSU02]. Nov. 3.45: comp. star has $B-V = +0.55$ [TSU02]. Nov. 16.73: a star of mag 13.9 located $10''$ from the central cond. [SRB]. Nov. 21.41: comp. star has $B-V = +0.50$ [TSU02]. Dec. 15.45: comp. star has $B-V = +0.64$ [TSU02]. Dec. 22.50 and 23.45: “clearly visible w/ 40-cm $f/4.5$ reflector, but it is hard to find it among so many faint stars in the Milky Way; it was too faint to determine if the object was exactly stellar with no cometary activity” [YOS04]. Dec. 31.49: comp. star has $B-V = +0.41$

[TSU02]. 2007 Jan. 9.41: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.70$ [TSU02]. Feb. 12.86: mountain location; very clear sky; motion checked during a 45-min period; comp.-star mags taken from Henden photometry near PQ And [GON05]. Mar. 25.90: strong moonlight [SRB].

◊ *Comet C/2006 K4 (NEAT)* \Rightarrow 2006 Sept. 5.91: moonlight [SRB]. 2007 May 22.83: CCD image taken w/ 0.5-m Uppsala Schmidt telescope shows three separate tails (40'' long in p.a. 345°, 30'' in p.a. 330°, and 25'' in p.a. 300°) and total mag 15.9; images stacked w/ **Astrometrica 4.4.1.364** software (ref: UCAC-2 catalogue); astrometry reported to Minor Planet Center [R. H. McNaught, Siding Spring Observatory, Coonabarabran, NSW, Australia]. June 9.75: CCD exposures w/ 0.5-m Uppsala Schmidt telescope show a strongly curved tail, initially in p.a. 325°, then turning to p.a. 350° at 2'9 from the nuclear cond.; images stacked w/ **Astrometrica 4.4.1.364** software; mag 15.5 (ref: UCAC-2 catalogue); astrometry reported to Minor Planet Center [R. H. McNaught, Siding Spring Observatory]. June 19.70: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.52$ [TSU02].

◊ *Comet C/2006 L1 (Garradd)* \Rightarrow 2006 Oct. 31.08: **Guide 8.0** software used for comp.-star mags [TOT03]. Oct. 31.13: **Guide 7.0** software used for comp.-star mags [SAN07]. Nov. 3.14: "not a particularly difficult comet as seen with large binoc.; pretty large and diffuse ball of light; no central cond. seen; star of mag 12.4 nearby" [KAR02]. Nov. 20.66, 24.66, Dec. 18.42, and 23.63: **StellaNavigator (ver. 6.1)** software used for comp.-star mags [NAG08]. Nov. 21.84 and Dec. 19.67: **Guide 8.0** software used for comp. star mags [NAG04]. Nov. 24.66: $B-V$ values of comp. stars are +0.54, +0.60, and +0.65 [NAG08]. Nov. 24.75, Dec. 19.60, and 31.53: **Guide 8.0** software used for comp.-star mags [TSU02]. Nov. 24.75: comp. star has $B-V = +0.42$ [TSU02]. Dec. 10.44 and 15.51: **Guide 8.0** software used for comp.-star mags [YOS02]. Dec. 19.60: comp. star has $B-V = +0.67$ [TSU02]. Dec. 23.63: $B-V$ values of comp. stars are +0.60, +0.70, and +0.77 [NAG08]. Dec. 31.53: comp. star has $B-V = +0.64$ [TSU02]. 2007 Jan. 8.44, 9.45, Feb. 11.48, and Mar. 8.44: **Guide 8.0** software used for comp.-star mags [TSU02]. Jan. 8.44: comp. star has $B-V = +0.66$ [TSU02]. Jan. 9.45: comp. star has $B-V = +0.72$ [TSU02]. Feb. 11.48: comp. star has $B-V = +0.58$ [TSU02]. Mar. 8.44: comp. star has $B-V = +1.00$ [TSU02].

◊ *Comet C/2006 L2 (McNaught)* \Rightarrow 2006 Dec. 21.87 and 29.87: **Guide 8.0** software used for comp.-star mags; $B-V$ values of comp. stars are +0.61, +0.68, and +0.79 [YOS02]. Dec. 27.85: **StellaNavigator (ver. 6.1)** software used for comp.-star mags; $B-V$ values of comp. stars are +0.68, +0.70, and +0.87 [NAG08]. 2007 Mar. 25.84: moonlight [SRB]. Apr. 5.90: comp. stars taken from Henden sequence of Z UMi [BOU, DIJ].

◊ *Comet C/2006 M1 (LINEAR)* \Rightarrow 2006 Sept. 5.94 and 9.83: moonlight; dense star field [SRB].

◊ *Comet C/2006 M4 (SWAN)* \Rightarrow 2006 July 20.37: very low alt.; twilight interference [MAT08]. Sept. 27.12, Oct. 1.12, 10.74, 25.75, 26.75, 27.75, and 30.75: **Guide 8.0** software used for comp.-star mags [NAG09]. Sept. 29.78: "found the comet with 7×50 B as a bright, very small, condensed object; could not see it for many seconds before clouds covered that part of the sky in UMa"; alt. 12° [KAR02]. Oct. 1.77: faint tail stretching N; alt. 14° [KAR02]. Oct. 5.75, 6.15, 16.74, Nov. 12.76, and Dec. 8.69: **Guide 8.0** software used for comp.-star mags [TOT03]. Oct. 6.75, 7.75, 9.74, 10.74, 12.73, 14.75, 16.75, 17.75, 18.75, 25.73, 26.75, 27.75, 30.72, 31.72, Nov. 26.76, and 27.75: **Guide 7.0** software used for comp.-star mags [SAN07]. Oct. 10.75, 17.75, 25.74, 26.74, 30.73, Nov. 10.72, and 16.71: **Guide 8.0** software used for comp.-star mags [SZA]. Oct. 11.75, 13.75, and 29.78: **Guide 8.0** software used for comp.-star mags [CSO]. Oct. 14.74 and 16.73: **Guide 7.0** software used for comp.-star mags [SAR02]. Oct. 16.40, Dec. 19.38, and 31.42: **Guide 8.0** software used for comp.-star mags [TSU02]. Oct. 16.40: comp. star has $B-V = +0.72$ [TSU02]. Oct. 16.73: **Guide 7.0** software used for comp.-star mags [KAR03]. Oct. 27.75: straight tail; 30 10-sec exposures; 50-mm f/2.8 lens [AND01]. Oct. 27.85: straight, faint, diffuse tail; alt. 18° [WAR01]. Oct. 27.85 and 28.74: round, well-condensed coma w/ small, brighter center [WAR01]. Oct. 27.85, Nov. 22.85, 23.84, 27.83, 28.83, and 29.81: clear, transparent sky [WAR01]. Oct. 28.74: coma bluish in comp. w/ fainter globular cluster M13 located 3° N; straight, homogeneous, diffuse tail extending NNE \approx 40' W of M13; comet easily seen w/ naked eye, but then no tail visible; beautiful sight in 11×80 B [WAR01]. Oct. 28.74: "pseudo-nucleus was of 8th mag as seen with 18×50 'IS' binoc.; straight ion tail crossing the whole field-of-view, ending to the left of M13; coma visible to the naked eye (but not the tail); brightness comparable to 53 Her and 59 Her but fainter than the combined light of ν_1 and ν_2 CrB; the coma possessed a nice brightness gradient" [KAR02]. Oct. 28.75: 0°7 from the nucleus, the straight tail changes direction to p.a. 36°; 135-mm lens, but unknown exp. time [AND01]. Oct. 29.77: round, well-condensed coma with very small brighter center; only inner coma seen; light pollution; clear sky; Uppsala, Sweden [WAR01]. Oct. 31.42, Nov. 12.42, 24.41, Dec. 2.45, 10.40, and 15.41: **Guide 8.0** software used for comp.-star mags [YOS02].

Nov. 2.73: brief look; 89% gibbous moon lit up the sky [KAR02]. Nov. 7.39, 8.40, 12.38, 15.38, 21.39, 24.40, 30.40, Dec. 4.41, 10.38, and 18.38: **StellaNavigator (ver. 6.1)** software used for comp.-star mags [NAG08]. Nov. 10.77: S part of elliptical-shaped coma is brighter; the comet looks like an elliptical galaxy of size 4' × 7', elongated in p.a. 26° [CSU]. Nov. 13.73: coma has an elliptical shape of size 4' × 6', elongated in p.a. 32° [CSU]. Nov. 16.70: inner part of tail > 3' is located in p.a. 64°; dense star field [SRB]. Nov. 21.45: **Guide 8.0** software used for comp.-star mags [NAG04]. Nov. 22.85 and 23.84: round, well-condensed coma with small, much brighter center [WAR01]. Nov. 22.85, 23.84, and 24.89: diffuse coma [WAR01]. Nov. 22.85, 23.84, 24.89, 26.83, 27.83, 28.83, 29.81: obs. from Observatorio del Roque de Los Muchachos, La Palma, Spain (alt. 2300 m) [WAR01]. Nov. 22.85: no tail seen [WAR01]. Nov. 22.95 and 23.95: comp. stars have $V = 7.45$ ($B-V = +0.58$) and 7.97 (+0.09) [AMO01]. Nov. 23.84: comet apparently fainter than last night; faint, diffuse, wide, straight tail [WAR01]. Nov. 24.89: round coma; fainter than yesterday; short, stubby tail extending in a N direction; difficult obs. (comet in center of tight grouping of seven 7th- to 9th-mag stars; est. of dia. and DC not possible); comet low, alt. 16°; sky hazy at horizon and w/ thin cirrus; very windy and gusty from W [WAR01].

Nov. 26.83: small, round coma with brighter center; only 5' NW of star of similar brightness; fainter and smaller than two days ago; crescent Moon 35° to the E interfered slightly; drifting thin cirrus, but clear at comet [WAR01]. Nov. 27.83 and 28.83: small, well-condensed, round coma w/ brighter center [WAR01]. Nov. 27.83: almost-first-quarter Moon 43° to the E interfered slightly [WAR01]. Nov. 28.83: first-quarter moon 51° to the E interfered [WAR01]. Nov. 29.81: small, round coma with brighter center; bright sky due to 9-day moon, 61° to the E [WAR01]. Dec. 4.41: $B-V$ values of comp. stars are +0.66, +0.69, and +0.73 [NAG08]. Dec. 19.38: comp. star has $B-V = +0.50$ [TSU02]. Dec. 23.37: "still bright — large and easy to see w/ 40-cm $f/4.5$ reflector; large and diffuse" [YOS04]. Dec. 31.42: comp. star has $B-V = +0.42$ [TSU02]. 2007 Jan. 8.38: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.96$ [TSU02]. June 15.73: CCD exposures w/ 0.5-m Uppsala Schmidt telescope show a circular coma of dia. 10" (FWHM 6") and total mag 17.3; images stacked w/ **Astrometrica 4.4.1.364** software (ref: UCAC-2 catalogue); astrometry reported to Minor Planet Center [R. H. McNaught, Siding Spring Observatory, Coonabarabran, NSW, Australia].

◊ *Comet C/2006 P1 (McNaught)* ⇒ 2006 Aug. 25.16: "measurement is of a suspect that was initially believed to be the comet; however, the obs. attempt two nights later failed to verify this" [HAL]. Sept. 15.12: very vague suspect, confirmed following night [HAL]. Oct. 12.08, 26.11, and 2007 Jan. 13.02: low alt. [HAL]. Oct. 12.08: "some interference from zodiacal light; the same conditions were extant throughout the Oct. observations" [HAL]. Oct. 26.11: zodiacal light and lingering twilight; crescent moon 15° away [HAL]. Nov. 16.05, Dec. 22.03, 2007 Jan. 1.03, and 5.03: very low alt. [HAL]. Nov. 16.05: twilight; "the comet is nevertheless not too difficult to see" [HAL]. Dec. 22.03, 2007 Jan. 1.03, and 5.03: negative observations all made in bright twilight; the limiting magnitudes are educated guesses; wider-field searches also carried out with 12×50 B [HAL]. 2007 Jan. 9.03: "very low alt., very bright twilight; magnitude measurement an educated guess; bright central cond., w/ beginnings of tail to NNE (sharper along S edge)" [HAL]. Jan. 12.80, 13.76, and 14.81: daylight obs.; comp. object Venus [HAL]. Jan. 12.80: "bright central cond., w/ beginnings of tail structure approximately northward; a couple of short, bright 'spines' in this tail" [HAL]. Jan. 13.02: "very bright twilight; brief obs. (5 minutes) before covered up by clouds; the comet is an impressive object in 12×50 B, w/ some slight curvature seen in the tail (the reported p.a. being approximate)" [HAL]. Jan. 13.76: "distinct inner tail structure is visible, with several 'spines'" [HAL]. Jan. 14.81: "comet seems to be distinctly fainter than during the previous day, and the inner tail structure is less prominent; comet also obs. just before and just after sunset (Jan. 15.02), but alt. extremely low, and little detail visible" [HAL]. May 7.44: "appeared somewhat elongated w/ very faint tail suspected to (possibly) 1° [SEA].

◊ *Comet C/2006 Q1 (McNaught)* ⇒ 2007 Jan. 9.54 and Feb. 15.42: **Guide 8.0** software used for comp.-star mags [TSU02]. 2007 Jan. 9.54: comp. star has $B-V = +0.98$ [TSU02]. Feb. 15.42: comp. star has $B-V = +0.65$ [TSU02].

◊ *Comet P/2006 T1 (Levy)* ⇒ 2006 Oct. 17.11 and 31.15: **Guide 7.0** software used for comp.-star mags [SAN07]. Oct. 18.83: **Guide 8.0** software used for comp.-star mags; comp. star has $B-V = +0.48$ [TSU02].

◊ *Comet P/2006 U1 (LINEAR)* ⇒ 2006 Oct. 31.63, Nov. 24.56, Dec. 15.57, and 19.50: **Guide 8.0** software used for comp.-star mags [TSU02]. Oct. 31.63: comp. star has $B-V = +0.14$ [TSU02]. Nov. 20.36: CCD image taken remotely with a 25-cm $f/3.4$ reflector located near Mayhill, NM, U.S.A., shows the comet to be starlike with a narrow tail 18' long toward p.a. 285° [Ernesto Guido and Giovanni Sostero, Castellammare di Stabia, Italy]. Nov. 24.56: comp. star has $B-V = +0.57$ [TSU02]. Dec. 15.57 and 19.50: comp. star has $B-V = +0.56$ [TSU02].

◊ *Comet C/2006 U6 (Spacewatch)* ⇒ 2007 June 15.77: CCD exposures w/ 0.5-m Uppsala Schmidt telescope show a circular coma of FWHM 6" (total mag 17.1) and a very faint tail extending to 30" in p.a. 300°; images stacked w/ **Astrometrica 4.4.1.364** software (ref: UCAC-2 catalogue); astrometry reported to Minor Planet Center [R. H. McNaught, Siding Spring Observatory, Coonabarabran, NSW, Australia].

◊ *Comet C/2006 VZ₁₃ (LINEAR)* ⇒ 2006 Dec. 1.11 and 2.06: R -band CCD exposures taken w/ the University of Arizona 1.54-m Kuiper reflector in bright moonlight show this object, previously presumed to be asteroidal (see *IAUC* 8781), to be a comet with a very condensed coma 8" in dia. and no visible tail; magnitude measured as 18.7 and 18.6, respectively (presumably using USNO-B1.0 catalogued star magnitudes) [C. W. Hergenrother]. 2007 Apr. 28.77: "near limit of visibility, but a small faint object was visible; I obs. it with higher magnification because it was located near a star of mag 13.8; the comet seemed much fainter than the 13.8-mag star in-focus" [YOS04]. May 26.75: **Guide 8.0** software used for comp.-star mags; $B-V$ values of comp. stars were +0.71, +0.79, and +0.79 [YOS02]. June 4.97: mountain location; very clear sky [GON05]. June 12.23: instrument used was actually a set of 25×100 B, with just one barrel used for the defocussing/obs.; a phone call to "Kevin at Oberwerk" yielded the information that these binoculars are ≈ $f/5.0$, ± 5%; comp.-star magnitudes taken "from the main Tycho catalogue via the **VizieR** website using the "V-T" magnitude (proper *ICQ* Tycho-spacecraft-catalogue code uncertain) [CRE01]. June 12.70, 15.60, July 5.49, and 24.48: **StellaNavigator (ver. 8)** software used for comp.-star mags [NAG08]. June 12.70: $B-V$ values of comp. stars were +0.70, +0.74 and +0.75 [NAG08]. June 12.96, 17.95, July 15.92 and 16.88: dense star field [SRB]. June 15.60: $B-V$ values of comp. stars were +0.66, +0.68 and +0.89 [NAG08]. June 16.68: **Megastar (Ver. 5.0)** software used for comp.-star mags [MUR02]. June 17.95: a star of mag 11.9 located 2' from the central cond. [SRB]. June 19.72, July 19.49, and 23.50: **Guide 8.0** software used for comp.-star mags [TSU02]. June 19.72: comp. star has $B-V = +0.50$ [TSU02]. June 27.75: **Guide 8.0** software used for comp.-star mags [NAG04].

July 6.95: wide and faint outer halo; brighter w/ Lumicon Swan Band Filter [MEY]. July 6.96: "w/ 9×63 B, immediately detected; larger coma w/ moderate cond. towards center" [KAM01]. July 7.67: city light pollution; floating clouds [XU]. July 7.96: comet close to star 27 Dra [BUS01 and SCH04]. July 7.96: eccentric central cond. [COM]. July 11.93: light pollution [HOR03]. July 13.92: w/ 30-cm T (75×), bright but rather diffuse coma with small inner coma that grew significantly brighter toward center, though showing no false nucleus [KAM01]. July 14.94, 14.95, and 17.97: cirrus

~3'

Unfiltered CCD image of comet C/2006 VZ₁₃ taken by L. Donato, E. Guido, and G. Sostero (Remanzacco, Italy) with a 45-cm f/4.4 reflector (from fifteen 15-sec exposures) taken on 2007 July 15.88. The bar at upper right indicates a scale of $\approx 3'$.

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[text continued from page 102]

clouds [HOR03]. July 15.90: w/ 30-cm T (333 \times), "a false nucleus of mag 14 in center possibly glimpsed" [KAM01]. July 15.91 and 15.93: two bright stars in coma [HOR03]. July 18.42 and 19.40: low alt.; clear sky, but some moonlight [SEA]. July 18.42: slightly enhanced using Swan Band filter [SEA]. July 18.91: comp. stars have $V = 7.21$ ($B-V = +0.58$) and 7.50 ($+0.39$) [AMO01]. July 18.94: stars of mag 9.2 and 9.5 in coma [HOR03]. July 19.49: comp. star has $B-V = +0.35$ [TSU02]. July 19.91: comp. stars have $V = 7.23$ ($B-V = +0.46$) and 7.53 ($+0.84$) [AMO01]. July 20.91: comp. stars have $V = 7.53$ ($B-V = +0.84$) and 7.68 ($+0.57$) [AMO01]. July 22.90: clearly fainter than M3 (located $0^{\circ}.5$ away) [MEY]. July 22.95: comet only $23'$ from M3, the latter being clearly brighter [BOU]. July 23.50: comp. star has $B-V = +0.45$ [TSU02]. July 23.95: comp. stars have $V = 7.76$ ($B-V = +0.36$) and 8.18 ($+0.24$); moonlight interference [AMO01]. July 25.92, 27.95, and 28.91: comp. stars have $V = 7.32$ ($B-V = +0.37$) and 7.89 ($+0.20$); moonlight interference [AMO01]. July 26.89: moonlight [HOR02]. July 31.91: comp. stars have $V = 7.79$ ($B-V = +0.18$), 7.90 ($+0.29$), and 8.57 ($+0.81$) [AMO01]. Aug. 1.93: comp. stars have $V = 7.79$ ($B-V = +0.18$) and 7.90 ($+0.29$) [AMO01].

◊ Comet C/2006 WD₄ (Lemmon) \Rightarrow 2007 May 26.48: $B-V$ values of comp. stars were $+0.47$, $+0.94$, and $+0.98$; strong central cond.; four astrometric positions submitted to the Minor Planet Center [KAD02]. June 5.93: mountain location; very clear sky; motion checked during a 25-min period; nearby field stars checked via Digitized Sky Survey [GON05]. June 17.87: twilight; low alt. [SRB].

◊ Comet C/2006 XA₁ (LINEAR) \Rightarrow 2007 Feb. 11.49, Mar. 8.46, and Apr. 11.48: Guide 8.0 software used for comp.-star mags [TSU02]. Feb. 11.49: comp. star has $B-V = +0.55$ [TSU02]. Feb. 17.87: a star of mag 16.6 located $0'.2$ from the central cond. [SRB]. Mar. 8.46: comp. star has $B-V = +0.48$ [TSU02]. Mar. 12.86, Apr. 11.87, 14.88, 15.88, and 25.86: dense star field [SRB]. Mar. 16.91: mountain location; very clear sky; motion checked during a 90-min period; comp.-star mags taken from Henden photometry near RW Per [GON05]. Mar. 25.86: moonlight; a star of mag 14.2 located $0'.6$ from the central cond. [SRB]. Apr. 5.86: comp. stars taken from Henden sequence of Z UMi [BOU, DIJ]. Apr. 11.48: comp. star has $B-V = +0.55$ [TSU02]. Apr. 15.88: stars of mag 13.0 and 14.2 located $0'.3$ and $0'.2$, respectively, from the central cond. [SRB]. Apr. 25.86: stars of mag 14.5 and 14.8 located $0'.15$ and $0'.6$, respectively, from the central cond. [SRB]. Apr. 28.48: "I had to use higher magnification to improve the contrast, because the background was bright due to the moonlight" [YOS04].

◊ Comet C/2007 E1 (Garradd) \Rightarrow 2007 Apr. 4.86: "very difficult obs.; extremely diffuse object; star of mag 9.5 near coma" [BUS01]. Apr. 9.47 and 10.42: "extremely diffuse and indistinct; possibly enhanced with Swan-Band filter, but still very marginal" [SEA]. Apr. 11.51, 19.48, 23.50, May 7.48, and 13.50: Guide 8.0 software used for comp.-star mags [TSU02]. Apr. 11.51: comp. star has $B-V = +0.44$ [TSU02]. Apr. 11.84: very difficult to see; extremely diffuse; close to star of mag 11 [MEY]. Apr. 14.58: The Sky (ver. 5) software used for comp.-star mags [MIT]. Apr. 14.86: w/ 30-cm T (75 \times), difficult object with very low surface brightness; only the central part is clearly visible; at 167 \times , faint, small (about $0'.5$) central cond. w/o a false nucleus [KAM01]. Apr. 15.89: "extremely diffuse object" [SCH04]. Apr. 18.88: w/

30-cm T (75×), still more difficult than on Apr. 14.86; very low surface brightness; only the central part is clearly visible w/o moving the telescope; at 242×, faint, small central cond. w/o a false nucleus [KAM01]. Apr. 19.88: low surface brightness — barely visible, and clearly fainter than galaxy NGC 2903; astron. twilight [GRA04]. Apr. 23.50: comp. star has $B-V = +0.32$ [TSU02]. Apr. 28.49: nearly-full moon located nearby, making comet difficult to obs. (probably only the central part of comet seen) [YOS04]. Apr. 29.48: much easier to see because the moon was further away than on previous night [YOS04]. May 7.48: comp. star has $B-V = +0.35$ [TSU02]. May 13.50: Guide 8.0 software used for comp.-star mags [YOS02]. May 26.47: located low in the evening sky, near Venus, but still bright [YOS04].

◊ *Comet C/2007 E2 (Lovejoy)* ⇒ 2007 Mar. 16.70: comet appeared a little fainter through Swan-band filter; possibly some extension away from sun [SEA]. Mar. 19.34: comp. stars have $V = 9.01$ ($B-V = +0.37$) and 9.90 ($+0.49$) [AMO01]. Mar. 21.08: “very diffuse; does not stand out against bright, slightly hazy sky background; slight sign of cond.” [COO02]. Mar. 22.33 and 23.33: comp. stars have $V = 8.15$ ($B-V = +0.07$) and 8.61 ($+0.54$) [AMO01]. Mar. 26.36: comp. stars have $V = 8.10$ ($B-V = +0.92$) and 8.95 ($+0.56$); twilight [AMO01]. Mar. 27.73: no difference noticed using Swan-Band filter [SEA]. Mar. 31.33: comp. stars have $V = 8.37$ ($B-V = +0.21$) and 9.11 ($+0.27$) [AMO01].

Apr. 9.33: comp. stars have $V = 8.36$ ($B-V = +0.37$) and 8.94 ($+0.14$); moonlight [AMO01]. Apr. 9.81, May 7.75, 13.60, June 19.57, and July 23.46: Guide 8.0 software used for comp.-star mags [TSU02]. Apr. 9.81: comp. star has $B-V = +0.58$ [TSU02]. Apr. 11.79, 14.78, 25.76, 28.60, May 2.71, 7.57, 11.55, 19.72, and June 15.64: *StellaNavigator* (ver. 8) software used for comp.-star mags [NAG08]. Apr. 12.17: mountain location; very clear sky [GON05]. Apr. 14.78: $B-V$ values of comp. stars were $+0.55$, $+0.66$, and $+0.70$ [NAG08]. Apr. 15.11: w/ 9×63 B, not visible (too low); w/ 30-cm T (75×), rather diffuse, large coma, moderately condensed toward center [KAM01]. Apr. 15.12: comet at 13° alt. [SCH04]. Apr. 16.08, 16.09, 17.06, 17.07, 19.01, and 19.02: very low alt. [HOR03]. Apr. 16.35: comp. stars have $V = 8.53$ ($B-V = +1.09$) and 8.97 ($+0.04$) [AMO01]. Apr. 16.67: “a little brighter through Swan-Band filter; somewhat less condensed and more diffuse than earlier obs.” [SEA]. Apr. 17.08: comet appeared faint and ill-defined, but it was definitely seen; formal obs. obtained at alt. 9°, in astron. twilight (sun 13°5 below horizon) [GRA04]. Apr. 17.12: faintly visible in 9×63 B; w/ 30-cm T (75×), same morphology as on Apr. 15.11; at 242×, stellar false nucleus of mag 13.5 [KAM01]. Apr. 17.88: city light pollution and astron. twilight [XU]. Apr. 18.35: comp. stars have $V = 7.28$ ($B-V = +0.61$), 8.10 ($+0.34$), and 8.67 ($+0.14$) [AMO01]. Apr. 19.09: rather well visible in 9×63 B; w/ 30-cm T (242×), stellar false nucleus of mag 13.5 [KAM01]. Apr. 19.73, 28.76, and May 14.67: Guide 8.0 software used for comp.-star mags [NAG04]. Apr. 20.06-20.07: quite faint through 10.0-cm R, but a fairly easy object with the larger instrument; astron. twilight [GRA04]. Apr. 20.67 and 24.67: possible interference from fog [RAE]. Apr. 22.09: some interference from nearby stars; coma dia. $\approx 7'$ in 30.5-cm T (56×) [COM]. Apr. 23.07: strong enhancement w/ a Lumicon Swan Band Filter [MEY]. Apr. 25.74 and 28.75: *The Sky* (ver. 5) software used for comp.-star mags [MIT]. Apr. 25.99: a star of mag 11.1 located 0.8 from the central cond.; dense star field; moonlight [SRB]. Apr. 26.06: a star of mag 12.0 located 1.9 from the central cond.; dense star field [SRB]. Apr. 26.08: w/ 30-cm T (242×), stellar false nucleus of mag 14 [KAM01]. Apr. 28.60: $B-V$ values of comp. stars were $+0.58$, $+0.86$ and $+0.86$ [NAG08]. Apr. 28.78, May 11.57, 13.58, 17.61, and 19.47: Guide 8.0 software used for comp.-star mags [YOS02]. Apr. 30.90: comet easily visible despite bright moonlight [RIE].

May 1.92: almost-full moon, but very clear sky [DIJ]. May 2.71: $B-V$ values of comp. stars were $+0.56$, $+0.61$ and $+0.66$ [NAG08]. May 2.89: despite full moon, easily visible [GIL01]. May 3.89: nearly-full moon behind thick clouds [GIL01]. May 7.75: comp. star has $B-V = +0.42$ [TSU02]. May 8.95: some stars in coma, making it more difficult to estimate [COM]. May 13.85: light pollution [HOR03]. May 17.91: difficult to est. due to star of mag 9.7 near coma [GIL01]. May 17.94: w/ 32-cm f/5 L (72×), coma dia. 4', DC = 1 [PIL01]. May 17.98: comet only 10' from 11th-mag NGC 6015 (comet clearly the brighter of the two) [BOU]. May 18.06: w/ 30-cm T (75×), large coma of rather low surface brightness; at 242×, stellar false nucleus of mag 14.5 [KAM01]. June 12.92: a star of mag 16.9 located 12" from the central cond. [SRB]. June 15.64: $B-V$ values of comp. stars were $+0.63$, $+0.73$ and $+0.79$ [NAG08]. June 19.57: comp. star has $B-V = +0.52$ [TSU02]. July 16.87: stellar appearance [SRB]. July 23.46: comp. star has $B-V = +0.53$ [TSU02].

◊ *Comet C/2007 F1 (LONEOS)* ⇒ 2007 July 16.84: low alt.; twilight [SRB].

◊ *Comet C/2007 G1 (LINEAR)* ⇒ 2007 May 14.56: Guide 8.0 software used for comp.-star mags; comp. star has $B-V = +0.43$ [TSU02]. July 16.90: stellar appearance [SRB].

◊ *Comet P/2007 H1 (McNaught)* ⇒ 2007 June 13.75: CCD exposures w/ 0.5-m Uppsala Schmidt telescope show a straight 3/8 tail in p.a. 250°; images stacked w/ *Astrometrica 4.4.1.364* software; mag 15.1 (ref: UCAC-2 catalogue); astrometry reported to Minor Planet Center [R. H. McNaught, Siding Spring Observatory, Coonabarabran, NSW, Australia]. July 14.11: mountain location; very clear sky; nearby field stars checked via Digitized Sky Survey; comp.-star mags taken from Henden photometry near TX Tri [GON05].

◊ *Comet P/2007 H3 (Garradd)* ⇒ 2007 June 16.45: CCD exposures w/ 0.5-m Uppsala Schmidt telescope; images stacked w/ *Astrometrica 4.4.1.364* software show a tail 20" long in p.a. 80° and total mag 17.0 (ref: UCAC-2 catalogue); astrometry reported to Minor Planet Center [R. H. McNaught, Siding Spring Observatory, Coonabarabran, NSW, Australia].

◊ *Comet C/2007 K5 (Lovejoy)* ⇒ 2007 June 5.38: “very difficult object that actually appeared fainter than the magnitude given here; also seen at 114×, but no estimate made — though by comet’s appearance, at that magnification, it would probably have been estimated a magnitude fainter!” [SEA].

◊ *Comet C/2007 K6 (McNaught)* ⇒ 2007 July 10.67: CCD exposures w/ 0.5-m Uppsala Schmidt telescope, images stacked w/ *Astrometrica 4.4.1.364* software, show an almost asteroidal comet image (FWHM 4"5) of total mag 17.7

Key to observers with observations published in this issue, with 2-digit numbers between Observer Code and Observer's Name indicating source [16 = Japanese observers (via Akimasa Nakamura, Kuma, Ehime); 32 = Hungarian observers (via Krisztián Sárneczky, Budapest); etc.]:

AMD01 35	Alexandre Amorim, Brazil	*MCA	Stephen J. McAndrew, Australia
BOU	Reinder J. Bouma, The Netherlands	MEY 28	Maik Meyer, Germany
BUS01 11	E. P. Bus, The Netherlands	MIC 36	Marco Micheli, Pompiano, Italy
CER01 23	Jakub Černý, Praha, Czech Rep.	MIT 16	Shigeo Mitsuma, Honjo, Japan
CHE03 33	Kazimieras T. Cernis, Lithuania	MOR09	Philippe Morel, France
COM 11	Georg Comello, The Netherlands	MUR02 16	Shigeki Murakami, Niigata, Japan
COO02	Tim P. Cooper, Bredell, S. Africa	NAG04 16	Kazuro Nagashima, Ikoma, Japan
CRE01	Phillip J. Creed, OH, U.S.A.	NAG08 16	Yoshimi Nagai, Gunma, Japan
CSO 32	Tibor Csörgei, Slovak Republic	NAG09 32	Miklós Nagy, Csenger, Hungary
CSU 32	Mátyás Csukás, Salonta, Romania	NEV 42	V. S. Nevski, Vitebsk, Belarus
DIE02	Alfons Diepvens, Belgium	PAR03 18	Mieczyslaw L. Paradowski, Poland
DIJ	Edwin van Dijk, The Netherlands	PEA	Andrew R. Pearce, Australia
GIL01 11	Guus Gilein, The Netherlands	PIL01	Uwe Pilz, Leipzig, Germany
GON05	J. J. Gonzalez, Asturias, Spain	RAE	Stuart T. Rae, New Zealand
GON06	Virgilio Gonano, Udine, Italy	RIE 11	Hermanus Rietveld, Netherlands
GRA04 24	Bjoern Haakon Granslo, Norway	ROB06	Walter R. Robledo, Argentina
HAD01 32	C. Hadházi, Hajdúhadház, Hungary	SAN07 32	G. Sánta, Kisujszállás, Hungary
HAL	Alan Hale, U.S.A.	SAR02 32	Krisztián Sárneczky, Hungary
HAS02	Werner Hasubick, Germany	SCA02	Toni Scarmato, Calabria, Italy
HOR02 23	Kamil Hornoch, Czech Republic	SCH04 11	Alex H. Scholten, The Netherlands
HOR03 23	Petr Horalek, Czech Republic	SEA	David A. J. Seargent, Australia
JON	Albert F. Jones, New Zealand	SHU 42	Sergey E. Shurpakov, Belarus
KAD02 16	Ken-ichi Kadota, Ageo, Japan	SOU01 35	W. C. de Souza, Sao Paulo, Brazil
KAM01	Andreas Kammerer, Germany	SRA 32	Márta Sragner, Pécs, Hungary
KAN05	Ralf Kannenberg, Switzerland	SRB 23	Jiri Srba, Vsetin, Czech Republic
KAR02 21	Timo Karhula, Virsbo, Sweden	STR03 15	Magda Streicher, South Africa
KAR03 32	Ádám Kárp'ati, Hungary	SZA	Sándor Szabó, Sopron, Hungary
KER 32	Ákos Kereszturi, Hungary	TOT03 32	Zoltán Tóth, Hungary
KES01	Sándor Keszthelyi, Pécs, Hungary	TSU02 16	M. Tsumura, Wakayama, Japan
LAB02	C. Labordena, Castellon, Spain	WAR01	Johan Warell, Sweden
LEH	Martin Lehky, Czech Republic	XU	Wentao Xu, Guangzhou, China
LIN04	Michael Linnolt, HI, U.S.A.	YOS02 16	Katsumi Yoshimoto, Hirao, Japan
MAN02 23	Roman Maňák, Lipov, Czech Rep.	YOS04 16	Seiichi Yoshida, Kanagawa, Japan
MAR02 13	Jose Carvajal Martinez, Spain	ZAT01	Flavio Zattera, Malo, Italy
MAT08	Michael Mattiazzo, S. Australia	ZNO 23	Vladimír Znojil, Czech Republic

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NOTE: The tabulated CCD data summary begins on page 112 of this issue.

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Tabulated Visual-Data Summary

As noted on page 96 of this issue, we are beginning with this issue to publish summaries of contributed tabulated data instead of publishing each line of observation that is contributed to the *ICQ*, thus departing from thirty years of data publication due not only to the rise in printing and postage costs, but also to the increase in the amount of data obtained by observers. The following format serves the purpose of summarizing all the comets that had data reported with their observational arcs for each observer.

The tabulation below lists, for each comet, the first and last observation (with associated total visual magnitude estimate) for each observer, listed in alphabetical order of the observers within each comet's listing (the usual 3-letter, 2-digit observer code coming under the column Obs., whose key is provided above). The final column (separated by a slash, /, from the observer code) provides the number of individual 80-character observation records entered into the *ICQ* archive from that observer for the particular comet for this issue; when only one observation was submitted by a specific

observer for a given comet, the last column is left blank (with no slash mark after the observer code). The complete observations in their 80-column form are posted at the ICQ website and can be obtained directly by request from the ICQ Editor.

Comet 2P/Encke

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 05 09.35	7.8	2007 05 26.33	10.5:	AM001/ 2
2007 03 11.80	11.0	2007 04 05.83	8.2	BOU / 3
2007 03 12.81	10.8	2007 04 05.83	8.5	DIJ / 2
2007 02 14.82	13.3	2007 04 17.85	6.7	GON05/ 4
2007 03 31.82	[8.5	2007 04 14.84	[7.0	GRA04/ 5
2007 03 11.80	11.5			LAB02
2007 04 07.80	7.4			LEH
2007 04 06.78	8.2	2007 04 12.78	7.4	NEV / 2
2007 03 13.90	8.1	2007 03 16.90	9.0	PEA / 3
2007 05 23.75	9.6			SEA

Comet 4P/Faye

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 11 23.97	9.4			AM001
2002 02 05.80	12.0	2007 03 12.82	13.0	BOU / 4
2007 03 10.79	13.3	2007 03 13.79	13.1	CER01/ 3
2007 01 05.75	12.4	2007 02 12.76	[12.6	C0002/ 2
2007 01 14.86	11.8			CSD
2007 02 05.80	12.0	2007 03 12.83	12.9	DIJ / 3
2007 02 04.81	11.7	2007 03 10.87	12.7	GON05/ 4
2007 02 12.81	13.0	2007 03 17.86	11.9	LAB02/ 2
2006 10 29.76	10.4			NAGO4
2006 09 24.86	11.0	2006 10 28.09	10.1	NAGO9/ 4
2007 02 07.80	11.8	2007 02 15.72	12.4	NEV / 3
2007 02 09.41	[11.5			RAE
2006 11 23.07	10.2	2007 02 19.04	[12 :	ROB06/ 3
2006 09 21.90	11.0:	2006 11 27.92	9.5	SAN07/ 7
2007 02 11.74	12.5			SHU
2006 11 24.81	12.7			STRO3
2007 02 14.78	12.5			SZA
2006 09 20.91	11.4	2007 02 14.78	12.7	TOTO3/ 5
2007 01 08.50	11.4			TSU02
2007 02 20.54	12.3	2007 03 11.48	12.7	YOS02/ 3

Comet 17P/Holmes

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 07 14.09	[14.5	2007 07 25.12	14.7	GON05/ 2

Comet 29P/Schwassmann-Wachmann

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 11 15.08	[12.1			AM001
2007 02 05.81	12.7	2007 03 12.84	12.6	BOU / 4
2007 02 05.82	12.6	2007 03 12.84	12.9	DIJ / 3
2007 02 04.84	12.5	2007 03 16.89	12.3	GON05/ 3
2007 02 12.81	13.0	2007 03 17.85	12.7	LAB02/ 3
2007 02 07.83	13.2	2007 04 12.79	12.5	NEV / 3
2007 02 11.80	13.9			SHU
2007 02 14.76	13.8			SZA
2006 09 03.02	12.7	2007 02 14.76	13.5	TOTO3/ 7

Comet 41P/Tuttle-Giacobini-Kresák

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 07 20.39	11.0:	2006 07 21.40	10.7	MAT08/ 2

Comet 71P/Clark

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 05 27.56	11.6	2006 09 23.42	13.4	MAT08/ 3
2006 10 17.74	14.2			TOT03

Comet 73P/Schwassmann-Wachmann [component B]

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 05 06.94	9.0	2006 05 28.12	7.5	C0002/ 3

Comet 73P/Schwassmann-Wachmann [component C, stated or presumed]

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 04 25.87	7.8	2006 05 28.14	5.8	C0002/ 5
2006 05 06.96	7.0			MIC
2006 04 23.88	9.5	2006 04 28.88	9.7	STR03/ 2
2006 09 05.12	13.7	2006 10 30.95	15.1	TOT03/ 2

Comet 84P/Giclas

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 01 15.83	16.0			TOT03

Comet 96P/Machholz

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 04 15.12	8.0	2007 04 16.12	8.3	BOU / 2
2007 04 15.13	7.8	2007 04 16.12	7.9	DIJ / 2
2007 04 13.18	7.2	2007 06 26.08	13.7	GON05/ 5
2007 04 11.11	[6.0	2007 04 20.07	9.1	GRA04/ 4
2007 04 17.12	8.0	2007 04 26.09	9.2	KAM01/ 4
2007 04 17.17	7.6	2007 05 13.05	11.4	LAB02/ 2
2007 04 14.80	8.0:			MIT
2007 04 19.79	9.7	2007 05 14.70	12.9	NAG04/ 3
2007 04 25.77	10.3	2007 05 19.75	12.2	NAG08/ 2
2007 05 13.95	12.3			NEV
2007 04 16.13	8.0:			SCH04
2007 04 19.80	8.6			TSU02
2007 04 16.81	8.0:	2007 04 28.79	10.9	YOS02/ 2
2007 04 28.76	10.7	2007 05 26.72	12.8	YOS04/ 3

Comet 117P/Helin-Roman-Alu

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 09 13.83	14.0			TOT03

Comet 177P/Barnard

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 09 23.86	11.2			CSO
2006 09 12.77	10.0			HAD01
2006 08 04.94	9.7:	2006 08 05.92	9.0:	KAR02/ 2
2006 07 20.46	9.0:	2006 07 21.42	9.2	MAT08/ 2
2006 09 30.88	9.8			NAG09
2006 09 22.80	9.7	2006 10 16.78	10.8	SAN07/ 3
2006 09 11.89	10.2			SZA
2006 09 09.82	10.4	2006 10 30.95	12.8	TOT03/ 4
2006 08 17.93	9.0:			WAR01

Comet 181P/Shoemaker-Levy

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 11 23.96	[12.6			AM001
2006 11 23.05	[12 :			ROB06
2006 12 11.70	13.0			TOT03

Comet 185P/Petrew

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 03 11.79	11.1	2007 03 12.80	11.0	BOU / 2
2007 03 12.80	10.9			DIJ
2007 02 12.80	11.8	2007 03 16.85	11.0	GON05/ 4
2007 03 11.81	12.1	2007 03 17.82	11.7	LAB02/ 2

Comet C/2003 WT_42 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 01 15.06	14.9			TOT03

Comet C/2004 B1 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2005 12 03.76	[12.4			C0002

Comet C/2005 E2 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2005 12 03.76	12.9			C0002

Comet C/2005 L3 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 06 20.05	13.8	2007 07 25.05	13.5	GON05/ 3
2007 05 26.70	14.1			YOS04

Comet C/2005 YW (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 04 19.44	12.2	2007 04 21.37	12.5	RAE / 3
2007 02 26.28	[13.0			ROB06

Comet C/2006 A1 (Pojmanski)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 01 06.52	10.5	2006 02 28.77	5.4	MAT08/ 6

Comet P/2006 HR_30 (Siding Spring)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 02 12.86	14.4			GON05
2007 02 11.79	14.3	2007 02 15.73	14.0	NEV / 2
2006 09 11.78	14.8	2007 02 14.79	14.3	SZA / 2
2006 09 09.88	15.4	2007 02 14.79	15.1	TOT03/ 4

Comet C/2006 L1 (Garradd)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 11 03.14	10.4			KAR02
2006 10 28.12	10.5			NAG09
2007 02 07.85	[13.0			NEV
2006 10 31.13	9.8			SAN07
2006 11 19.16	10.8			SZA
2006 10 31.08	9.8	2007 01 12.83	12.7	TOT03/ 2

Comet C/2006 L2 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 03 08.85	12.7	2007 04 05.90	13.7	BOU / 4
2007 03 08.85	12.7	2007 04 05.90	14.0	DIJ / 3
2006 07 20.49	12.4	2006 07 21.40	12.6	MAT08/ 2
2007 02 12.08	13.8			NEV
2006 09 13.78	13.6			TOT03

Comet C/2006 M4 (SWAN)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 11 22.95	7.7	2006 11 23.95	7.5	AMO01/ 2
2006 10 31.82	5.5			BUS01
2006 10 11.75	5.9	2006 10 29.78	5.6	CSO / 3
2006 11 10.77	7.0	2006 11 26.69	8.0	CSU / 4
2006 10 16.71	6.5	2006 10 25.73	4.5	HAD01/ 2
2006 11 02.76	6.3:	2006 11 03.72	6.4:	KAN05/ 2
2006 09 29.78	5.5:	2006 11 02.73	6.0:	KAR02/ 4
2006 10 16.73	5.5			KAR03
2006 10 25.72	4.2			KER
2006 10 27.71	4.9			KES01
2006 07 20.37	11.0:	2006 07 21.37	10.5	MAT08/ 2
2006 09 27.12	6.0	2006 10 30.75	5.4	NAG09/ 7
2006 10 06.75	5.5:	2006 11 27.75	8.6	SAN07/ 16
2006 10 14.74	6.3	2006 10 16.73	6.4	SAR02/ 2
2006 11 22.95	7.5			SOU01
2006 10 17.73	6.5			SRA
2006 10 10.75	5.8	2006 11 16.71	7.2	SZA / 8
2006 10 05.75	6.0	2007 01 15.74	12.0	TOT03/ 6
2006 10 27.85	4.8	2006 11 29.81	8.6	WAR01/ 10
2006 10 17.72	5.9			ZNO

Comet C/2006 P1 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 08 25.16	[14.2	2007 01 14.81	-3 :	HAL / 18
2007 02 13.67	4.6	2007 03 25.68	9.4	JON / 6
2007 05 12.35	10.1			RAE
2007 05 16.99	10.9	2007 07 06.98	12.6	ROB06/ 3
2007 05 07.44	9.4	2007 06 12.42	10.3	SEA / 4

Comet P/2006 T1 (Levy)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 10 17.11	9.0	2006 10 31.15	[10.5	SAN07/ 2
2006 10 17.15	10.1			SZA
2006 10 06.13	10.5			TOT03

Comet C/2006 VZ_13 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 07 18.91	7.5	2007 08 01.93	7.8	AM001/ 10
2007 07 07.95	7.8	2007 07 22.92	7.4	BUS01/ 3
2007 06 19.90	8.9	2007 07 22.90	7.6	CER01/ 3
2007 07 19.92	7.5	2007 07 23.94	7.9:	CHE03/ 2
2007 06 12.23	10.0			CRE01
2007 07 09.98	7.8	2007 07 22.94	7.8	DIE02/ 8
2007 06 04.97	11.7	2007 07 25.02	7.8	GON05/ 17
2007 07 22.85	8.0			GON06
2007 06 08.01	11.1	2007 07 14.93	7.7	HAS02/ 3
2007 07 11.89	7.4	2007 08 01.85	8.3	HOR02/ 9
2007 07 11.93	7.3	2007 07 22.94	7.3	HOR03/ 15
2007 07 06.96	7.9	2007 07 15.90	7.8	KAM01/ 4
2007 05 13.12	13.2	2007 07 23.88	8.1	LAB02/ 8
2007 07 14.92	7.3	2007 07 26.87	7.9	LEH / 10
2007 06 17.41	11.2	2007 07 08.31	7.8	LINO4/ 2
2007 07 19.91	7.4	2007 07 19.92	7.2	MAN02/ 2
2007 07 13.98	7.8	2007 07 17.96	7.4	MAR02/ 3
2007 07 06.95	8.0	2007 07 22.90	7.7	MEY / 8
2007 07 14.94	7.9	2007 07 22.92	8.1	MOR09/ 5
2007 06 16.68	10.7			MUR02
2007 06 27.75	9.7			NAG04
2007 07 05.49	8.5	2007 07 24.48	8.0	NAG08/ 2
2007 07 14.94	7.3	2007 07 31.88	8.4:	PAR03/ 9
2007 07 13.99	7.4	2007 07 15.01	7.7	PILO1/ 2
2007 07 06.89	7.5	2007 07 09.90	7.5	SCA02/ 4
2007 07 07.96	7.8	2007 07 26.87	7.8	SCH04/ 10
2007 07 18.42	7.6	2007 07 19.40	7.6	SEA / 2
2007 07 10.96	8.8	2007 07 19.92	8.4	SHU / 3
2007 07 07.67	7.6			XU
2007 04 28.77	13.3	2007 06 23.68	9.4	YOS04/ 2
2007 07 16.88	7.5			ZNO

Comet C/2006 WD_4 (Lemmon)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 06 05.93	13.2			GON05
2007 05 26.49	[12.2			YOS04

Comet C/2006 XA_1 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 04 05.86	13.4			BOU
2007 04 05.86	13.4			DIJ
2007 03 16.91	13.7			GON05
2007 05 12.86	13.2			LAB02
2007 04 06.83	13.6			NEV
2007 04 28.48	13.5			YOS04

Comet C/2007 E1 (Garradd)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 04 05.88	10.8	2007 04 18.88	9.5	BOU / 7
2007 04 04.86	9.5:	2007 04 18.86	9.4	BUS01/ 6
2007 04 12.85	9.5	2007 04 12.87	9.1:	CHE03/ 2
2007 04 05.88	11.3	2007 04 18.88	9.4	DIJ / 6
2007 04 11.90	9.1	2007 04 15.89	9.2	GIL01/ 2
2007 04 07.88	9.3	2007 05 16.93	10.6	GON05/ 7
2007 04 19.88	9.1			GRA04
2007 04 15.88	9.6	2007 04 19.88	9.9	HOR03/ 5
2007 04 14.86	9.5	2007 04 18.88	10.0	KAM01/ 3
2007 04 17.82	10.5	2007 05 12.87	10.7	LAB02/ 2

Comet C/2007 E1 (Garradd) [cont.]

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 04 11.86	9.4	2007 04 16.84	9.7	LEH / 6
2007 04 15.27	10.7			LIN04
2007 04 07.89	9.1	2007 04 11.84	9.0	MEY / 2
2007 04 14.58	11.1			MIT
2007 04 06.87	9.1	2007 05 13.89	11.7	NEV / 3
2007 04 14.86	11.0	2007 05 17.93	12.1	PIL01/ 2
2007 04 15.37	9.9	2007 04 16.35	10.4	RAE / 2
2007 04 11.88	8.9			RIE
2007 03 15.10	[13 :			ROB06
2007 04 15.88	9.8	2007 04 15.89	9.2	SCH04/ 2
2007 04 09.47	9.6	2007 04 20.41	9.4	SEA / 7
2007 04 12.85	12.0	2007 04 19.87	11.2	SHU / 3
2007 04 19.48	10.9			TSU02
2007 05 13.50	11.1			YOS02
2007 04 28.49	10.9	2007 05 26.47	11.8	YOS04/ 3

Comet C/2007 E2 (Lovejoy)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 03 19.34	9.5	2007 04 18.35	8.0	AMO01/ 10
2007 04 15.11	7.9	2007 04 16.11	7.8	BOU / 2
2007 04 16.11	7.8	2007 05 17.95	8.9	BUS01/ 5
2007 05 21.89	11.0:			CHE03
2007 04 22.09	8.1			COM
2007 03 21.08	8.7			COD02
2007 04 16.10	7.3	2007 04 17.08	7.8	CSU / 2
2007 04 23.12	8.3	2007 05 18.05	10.2	DIE02/ 7
2007 04 15.12	7.7	2007 04 16.10	7.9	DIJ / 2
2007 04 19.11	7.9			GIL01
2007 04 12.17	7.7	2007 06 05.95	11.2	GON05/ 13
2007 04 17.08	8.3	2007 04 20.07	8.2	GRA04/ 3
2007 04 23.09	8.2			HOR02
2007 04 16.08	7.7	2007 05 21.91	10.3	HOR03/ 14
2007 03 20.67	10.8	2007 04 19.69	10.1	JON / 5
2007 04 15.11	7.9	2007 05 18.98	9.2	KAM01/ 6
2007 04 17.15	8.0	2007 07 14.95	12.9	LAB02/ 7
2007 05 06.33	8.8	2007 05 26.45	11.8	LIN04/ 2
2007 04 23.07	7.9			MEY
2007 04 14.73	8.6	2007 04 28.75	8.7	MIT / 3
2007 04 19.73	8.3	2007 05 14.67	10.2	NAG04/ 3
2007 04 11.79	9.2	2007 05 19.72	10.5	NAG08/ 5
2007 04 13.06	9.1	2007 05 13.91	8.8	NEV / 3
2007 03 16.85	9.5	2007 03 17.85	9.6	PEA / 2
2007 05 17.95	10.5	2007 07 15.02	11.8	PIL01/ 3
2007 03 18.64	9.3	2007 04 24.67	7.5:	RAE / 12
2007 04 30.90	8.1	2007 05 05.91	8.2	RIE / 2
2007 03 18.33	9.4	2007 03 31.37	8.5	ROB06/ 2
2007 04 15.12	8.2	2007 05 19.99	10.1	SCH04/ 7
2007 03 16.70	9.1	2007 04 16.67	7.6	SEA / 3
2007 04 16.04	8.6	2007 05 05.86	9.5	SHU / 2
2007 04 19.78	8.6	2007 05 13.60	10.2	TSU02/ 2
2007 04 17.88	8.2			XU
2007 04 16.80	8.3	2007 05 19.47	10.3	YOS02/ 7
2007 04 28.74	8.6	2007 05 26.69	11.3	YOS04/ 3

Comet P/2007 H1 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 07 14.11	14.7			GON05

Comet C/2007 K5 (Lovejoy)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 06 05.38	11.3:			SEA

Tabulated CCD-Data Summary

The tabulation below lists, for each comet, the first and last observation, with associated CCD magnitude measurement and "passband" (the one-letter code following the magnitude being the "magnitude method", which for CCDs has C = unfiltered CCD, k = Cousins R-band, etc.) for each observer, listed in alphabetical order of the observers within each comet's listing (the usual 3-letter, 2-digit observer code coming under the column Obs., whose key is provided above). The final column (separated by a slash, /, from the observer code) provides the number of individual 80-character observation records entered into the *ICQ* archive from that observer for the particular comet for this issue; when only one observation was submitted by a specific observer for a given comet, the last column is left blank (with no slash mark after the observer code). The complete observations in their 80-column form are posted at the *ICQ* website and can be obtained directly by request from the *ICQ* Editor. See the remarks on pages 96 and 105 of this issue for additional information on this new summary tabulation.

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Comet 2P/Encke

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 05 27.77	10.9 C			KAD02
2007 03 06.42	11.4 C			TSU02

Comet 4P/Faye

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 02 04.43	11.9 C			NAG08
2006 08 17.96	12.8 k	2007 04 11.81	15.8 k	SRB / 72
2007 01 08.51	11.6 C	2007 05 07.46	15.5 C	TSU02/ 6

Comet 8P/Tuttle

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 07 23.69	18.8 C			TSU02

Comet 17P/Holmes

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 07 17.01	15.0 k	2007 07 17.01	16.4 k	SRB / 3
2007 07 23.75	15.5 C			TSU02

Comet 29P/Schwassmann-Wachmann

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 08 17.97	[15.3 k	2007 04 25.83	15.4 k	SRB / 79
2007 01 08.54	13.7 C	2007 02 11.53	13.7 C	TSU02/ 2

Comet 50P/Arend

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 07 17.03	[17.4 k			SRB
2007 07 23.73	18.1 C			TSU02

Comet 62P/Tsuchinshan

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2005 03 13.93	14.8 C			ZAT01

Comet 76P/West-Kohoutek-Ikemura

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 02 12.57	17.5 C	2007 03 06.54	17.6 C	TSU02/ 2

Comet 84P/Giclas

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 09 06.04	[17.0 k			SRB
2007 01 09.57	16.2 C			TSU02

Comet 87P/Bus

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 05 07.56	17.0 C			TSU02

Comet 96P/Machholz

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 04 09.81	6.8:C	2007 04 14.79	8.3 C	KAD02/ 2
2007 05 02.77	11.3 C			NAG08
2007 06 19.90	15.3 C			NEV
2007 04 26.10	9.6 k	2007 07 15.97	16.9 k	SRB / 13
2007 05 14.74	11.8 C	2007 07 23.56	14.4 C	TSU02/ 3

Comet 99P/Kowal

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 05 14.53	17.3 C	2007 05 19.56	17.9 C	TSU02/ 2

Comet 125P/Spacewatch

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 05 07.54	18.7 C	2007 07 18.48	16.2 C	TSU02/ 3

Comet 135P/Shoemaker-Levy

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 05 14.61	17.9:C			TSU02

Comet 164P/Christensen

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2005 03 13.95	16.9 C			ZAT01

Comet 173P/Mueller

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 01 09.54	16.8 C	2007 03 06.49	17.2 C	TSU02/ 4

Comet 177P/Barnard

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 08 17.85	12.4 k	2006 11 16.81	[17.5 k	SRB / 48

Comet 182P/LONEOS

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 04 11.98	[17.0 k			SRB

Comet 184P/Lovas

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 02 11.42	17.4 C			TSU02

Comet 185P/Petrew

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 03 13.42	11.7 C			NAG08
2007 04 14.81	11.8 k	2007 04 15.81	15.6 k	SRB / 9
2007 02 11.40	12.5 C	2007 04 23.45	14.6 C	TSU02/ 5

Comet 186P/Garradd

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 05 19.46	17.3 C			TSU02

Comet 189P/NEAT

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 07 26.91	17.1 C			NEV
2007 07 27.46	16.6 C			TSU02

Comet C/2002 VQ_94 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 03 12.92	16.5 k	2007 04 25.96	[16.6 k	SRB / 8
2007 05 07.63	15.6 C	2007 06 19.59	16.8 C	TSU02/ 2

Comet C/2003 WT_42 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 03 12.91	16.0 k	2007 07 07.89	[17.2 k	SRB / 19
2007 02 12.65	15.5 C	2007 05 19.48	16.4 C	TSU02/ 4

Comet P/2004 A1 (LONEOS)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2005 03 13.94	18.1 C			ZAT01

Comet C/2004 B1 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 08 17.96	[16.6 k	2006 09 23.79	17.0 k	SRB / 17

Comet C/2005 B1 (Christensen)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 09 06.03	16.3 k	2006 09 24.91	16.8 k	SRB / 14
2005 03 13.97	17.1 C			ZAT01

Comet C/2005 E2 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 02 17.89	16.0 k	2007 03 12.88	[16.9 k	SRB / 5
2007 02 12.61	16.5 C			TSU02

Comet C/2005 EL_173 (LONEOS)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 02 12.49	15.4 C			TSU02

Comet C/2005 L3 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 06 20.88	15.5 C	2007 07 26.90	14.8 C	NEV / 3
2007 07 15.99	15.2 k	2007 07 16.93	15.6 k	SRB / 9
2007 07 23.64	14.8 C			TSU02

Comet C/2005 S4 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 07 15.95	[16.7 k			SRB

Comet P/2005 SB_216 (LONEOS)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 03 25.88	[16.2 k			SRB
2007 02 11.58	17.6 C			TSU02

Comet C/2006 A1 (Pojmanski)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 09 11.83	[16.9 k			SRB

Comet P/2006 HR_30 (Siding Spring)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 08 17.89	14.2 k	2007 04 25.85	16.1 k	SRB / 43
2007 01 09.41	15.0 C			TSU02

Comet C/2006 K4 (NEAT)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 08 17.86	[16.4 k	2006 09 25.78	[17.0 k	SRB / 3
2007 06 19.70	15.7 C			TSU02

Comet C/2006 L1 (Garradd)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 02 17.79	15.1 k	2007 03 14.81	[15.6 k	SRB / 5
2007 01 08.44	12.9 C	2007 03 08.44	16.6 C	TSU02/ 4

Comet C/2006 L2 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 03 25.84	[16.5 k			SRB

Comet C/2006 M1 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 08 17.91	[17.3 k	2006 09 25.81	[17.0 k	SRB / 4

Comet C/2006 M4 (SWAN)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 11 16.70	8.5 k	2006 11 16.70	12.1 k	SRB / 6
2007 01 08.38	12.0 C			TSU02

Comet C/2006 Q1 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 02 23.51	16.3 C			MCA
2007 01 09.54	16.3 C	2007 02 15.42	15.9 C	TSU02/ 2

Comet P/2006 S1 (Christensen)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 09 25.86	[17.2 k			SRB

Comet C/2006 V1 (Catalina)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 04 11.92	15.3 k	2007 04 14.94	[16.4 k	SRB / 6

Comet C/2006 VZ_13 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 06 12.70	11.6 C	2007 06 15.68	11.7 C	NAG08/ 2
2007 04 26.06	15.4 k	2007 07 16.88	13.3 k	SRB / 26
2007 06 19.72	10.6 C	2007 07 23.50	9.6 C	TSU02/ 3
2007 05 26.75	13.4 C			YOS02

Comet C/2006 VZ_13 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 06 12.70	11.6 C	2007 06 15.68	11.7 C	NAG08/ 2
2007 04 26.06	15.4 k	2007 07 16.88	13.3 k	SRB / 26
2007 06 19.72	10.6 C	2007 07 23.50	9.6 C	TSU02/ 3
2007 05 26.75	13.4 C			YOS02

Comet C/2006 WD_4 (Lemmon)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 05 26.48	14.1 C			KAD02
2007 06 17.87	[16.9 k			SRB

Comet C/2006 XA_1 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 02 17.87	14.9 k	2007 04 25.86	14.8 k	SRB / 26
2007 02 11.49	15.7 C	2007 04 11.48	14.6 C	TSU02/ 3

Comet C/2007 B2 (Skiff)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 03 12.94	[16.8 k			SRB

Comet C/2007 E1 (Garradd)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 04 11.90	12.4 k	2007 04 15.92	15.1 k	SRB / 18
2007 04 11.51	11.9 C	2007 05 07.48	11.3 C	TSU02/ 3

Comet C/2007 E2 (Lovejoy)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 04 14.78	10.0 C	2007 06 15.64	13.0:C	NAG08/ 4
2007 04 25.99	9.5 k	2007 07 16.87	17.6 k	SRB / 24
2007 04 09.81	10.4 C	2007 07 23.46	16.9 C	TSU02/ 5

Comet C/2007 F1 (LONEOS)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 07 16.84	[15.5 k			SRB

Comet C/2007 G1 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 06 25.87	16.9 C	2007 07 22.90	16.3 C	NEV / 2
2007 06 12.94	[17.2 k	2007 07 16.90	17.3 k	SRB / 4
2007 05 14.56	17.7 C			TSU02

Comet P/2007 H1 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 07 26.94	14.8 C			NEV
2007 07 17.05	14.8 k	2007 07 17.05	16.0 k	SRB / 4

Comet C/2007 M3 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 06 25.96	17.0 C			NEV
2007 07 16.99	17.2 k	2007 07 16.99	17.6 k	SRB / 2