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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>). The *ICQ* published a 225-page *Guide to Observing Comets* in early 1997 that is now out of print; a revised edition is in preparation.

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2008/2009 COMET HANDBOOK

Due in part to family illnesses during the past year, the *ICQ's 2008 Comet Handbook* was not published at the end of 2007 on schedule. That long-delayed publication has now been realized as the 120-page *2008-2009 Comet Handbook*, containing ephemerides for comets observable during 2008 (for the historical record) and the first half of 2009 (for planning purposes). (Note that, on page H119, the last two numbered comets were inadvertently left out of the index; the ephemeris for 211P/Hill appears on page H94, and that for 212P/NEAT is on page H77. Also, on page 120, for P/2007 T1 read C/2007 T1.) We are now planning to publish the *2009-2010 Comet Handbook* in July 2009, including ephemerides into the first few months of 2010.

Corrigendum. In the *2007 Comet Handbook*, page H118, for 73D/Kohoutek read 75D/Kohoutek

COMETS FOR THE VISUAL OBSERVER IN 2009

Alan Hale

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There are no especially bright short-period comets expected to be visible during 2009, although a handful should become bright enough to be visible in small telescopes, and several others should be detectable in larger instruments. One long-period comet may reach faint naked-eye visibility, and a few additional such objects should also be detectable visually.

Long-Period Comets

C/2007 N3 (Lulin)

This comet became detectable visually around May 2008, and had brightened to total visual magnitude (m_1) \sim 9-10 by the time it disappeared into sunlight in October. After conjunction with the sun, it emerges into the morning by the end of 2008, probably at $m_1 \sim$ 8-9.

The comet's orbit is almost exactly retrograde (inclination 178°) and shortly after its emergence begins to travel rapidly westward along the ecliptic. C/2007 N3 is at opposition and also nearest the earth ($\Delta = 0.41$ AU) in late February, at which point it is traveling 5° per day, and should be near a peak brightness of $m_1 \sim$ 5-6. The comet will probably fade fairly rapidly after that, being at $m_1 \sim$ 11-12 when it disappears into evening twilight near the end of May.

C/2006 Q1 (McNaught)

After reaching $m_1 \sim$ 11-12 during the first few months of 2008, this comet has been hidden in sunlight since shortly after mid-year and was in conjunction in mid-October. C/2006 Q1 emerges into the morning sky near the end of 2008 (perhaps at $m_1 \sim$ 13) and may remain visually detectable for the next several months, probably fading beyond visual range by the time it is at opposition in late May.

C/2006 OF₂ (Broughton)

At this writing (Nov. 2008), this comet is some two months past perihelion and is presumably near its peak brightness of $m_1 \sim$ 11. It is at opposition in late December 2008 and accessible in the evening sky for the first several months of 2009, probably fading to $m_1 \sim$ 13-14 by the time it disappears into evening twilight around the latter part of May. Northern-hemisphere observers are favored, as it moves in late 2008 from northern circumpolar skies near $\delta \sim +60^\circ$, dropping southward to $\delta \sim +30^\circ$ by May.

C/2006 W3 (Christensen)

This intrinsically-bright-but-distant comet became visually detectable in late 2007, a year-and-a-half before perihelion passage. At this writing, C/2006 W3 is a month-and-a-half past opposition, in northern circumpolar skies ($\delta \sim +60^\circ$) and near $m_1 \sim$ 11. By the beginning of 2009 it will be located in the northern hemisphere's northwestern evening sky, and is in conjunction with the sun (44° north of it) in late February.

Following conjunction, the comet is well placed for observation during the middle months of 2009, being at opposition in early August and probably at $m_1 \sim$ 10 or brighter for several months on either side of that time. Traveling southward, the comet should remain detectable in the evening sky until about December, fading to perhaps $m_1 \sim$ 11-12 by the time it disappears into evening twilight.

C/2008 T2 (Cardinal)

This comet passes within one degree of the north celestial pole in early December 2008 and should become visually detectable ($m_1 \sim$ 13-14) by around the end of that month. It remains in northern circumpolar skies for the first several months of 2009, although it begins traveling southward and becomes more accessible from the southern hemisphere by the latter part of May, by which time it may have brightened to $m_1 \sim$ 9-10 and its elongation will have decreased to $\sim 45^\circ$. The comet remains at a fairly small elongation for the next several months as it continues traveling southward, reaching $\delta \sim -55^\circ$ and fading to $m_1 \sim$ 12-13 by early October.

C/2008 Q3 (Garradd)

This comet may become visually detectable ($m_1 \sim$ 13-14) by late April and reach a peak brightness about a magnitude brighter in early June when it is nearest the earth ($\Delta = 0.94$ AU). It remains in southern circumpolar skies during this time (peak southerly declination $\delta \sim -68^\circ$ in late May) but begins heading northward after that, perhaps becoming briefly accessible from the northern hemisphere (at $m_1 \sim$ 13) around July before disappearing into evening twilight by the end of August.

C/2007 Q3 (Siding Spring)

This writer picked up this comet visually at $m_1 \sim 13.5$ in early October 2008, but it is now primarily accessible only from the southern hemisphere. It reaches a peak southerly declination of -54° in mid-December and is also near opposition; it becomes accessible from the northern hemisphere again by about February 2009 (perhaps at $m_1 \sim 12$) and it may brighten an additional magnitude by the time it enters evening twilight around May or June.

Following conjunction with the sun in August, the comet re-emerges into the morning sky by the end of October, perhaps near $m_1 \sim 10$. It should maintain something close to this brightness for the next few months, fading to perhaps $m_1 \sim 12$ by the time it is at opposition (and at a peak northerly declination of $+64^\circ$) in May 2010.

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TABLE 1.
PERIHELION INFORMATION FOR POTENTIALLY VISUAL COMETS IN 2009

Designation/Name	T (TT)	q (AU)
29P/Schwassmann-Wachmann	2004 July 10.8	5.72
C/2006 Q1 (McNaught)	2008 July 3.9	2.76
C/2006 OF ₂ (Broughton)	2008 Sept. 15.7	2.43
204P/LINEAR-NEAT	2008 Dec. 9.3	1.94
209P/2003 K2 (Christensen)	2008 Dec. 20.0	0.53
C/2007 N3 (Lulin)	2009 Jan. 10.6	1.21
144P/Kushida	2009 Jan. 26.9	1.44
67P/Churyumov-Gerasimenko	2009 Feb. 28.4	1.25
199P/Shoemaker	2009 Apr. 9.8	2.94
209P/2004 CB (LINEAR)	2009 Apr. 16.0	0.91
22P/Kopff	2009 May 25.4	1.58
C/2008 T2 (Cardinal)	2009 June 13.2	1.20
C/2008 Q3 (Garradd)	2009 June 23.1	1.80
C/2006 W3 (Christensen)	2009 July 6.7	3.13
77P/Longmore	2009 July 7.8	2.31
116P/Wild	2009 July 18.9	2.17
C/2008 P1 (Garradd)	2009 July 22.9	3.90
P/2004 X1 (LINEAR)	2009 Sept. 3.3	0.78
(3552) Don Quixote	2009 Sept. 8.6	1.21
P/2001 MD ₇ (LINEAR)	2009 Sept. 9.0	1.22
C/2008 N1 (Holmes)	2009 Sept. 25.9	2.78
C/2007 Q3 (Siding Spring)	2009 Oct. 7.3	2.25
88P/Howell	2009 Oct. 12.5	1.36
107P/Wilson-Harrington	2009 Oct. 22.0	0.99
169P/NEAT	2009 Nov. 30.3	0.61
118P/Shoemaker-Levy	2010 Jan. 2.3	1.98
81P/Wild	2010 Feb. 22.7	1.60
(20898) Fountainhills	2010 Apr. 16.4	2.27

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Short-Period Comets: Brighter Objects*29P/Schwassmann-Wachmann*

After emerging into the morning sky in August 2008, this comet underwent an unusually large outburst in late September, becoming as bright as $m_1 \sim 10$ -11 and still remaining visually detectable at this writing two months later.

The comet is at opposition in late January 2009 and thereafter remains accessible in the evening sky until approximately mid-June. Following conjunction with the sun it re-emerges into the morning sky in September en route to its next opposition in mid-February 2010. In addition to the September 2008 event, the comet has been unusually active for the past several years, and it seems likely that additional outbursts will take place during 2009.

144P/Kushida

Although it remained extremely faint throughout most of 2008 this comet began brightening rapidly and became visually detectable at $m_1 \sim 12$ around the time that it was at opposition in mid-November; it has brightened slightly further since then.

Little is known about this comet's brightness behavior; at its discovery return in 1993-1994, it was not discovered until almost a month past perihelion and then remained at almost a constant brightness of $m_1 \sim 10-11$ for the next two months before fading abruptly. It is thus difficult to predict what to expect at the current return; a reasonable scenario might suggest a peak brightness of $m_1 \sim 11$ during January and February 2009, with fading thereafter, but this must be regarded as somewhat uncertain.

22P/Kopff

This comet has a moderately favorable return in 2009, being at opposition in early September, 3.5 months after perihelion passage. It should become visually detectable ($m_1 \sim 13$) around January or February and reach a peak brightness near $m_1 \sim 9$ between May and July, before fading beyond visual range around November.

P/2001 MD₇ (LINEAR)

This comet makes its first predicted return to perihelion in 2009, following its discovery in 2001. At that return, it remained moderately well placed for observation and reached a peak brightness of $m_1 \sim 12$. The geometry in 2009 is slightly better than that in 2001, with the comet passing 0.58 AU from the earth when near perihelion in early September and remaining in the morning sky until going through opposition in mid-December. If the brightness behavior remains the same as in 2001, the comet should reach a peak brightness of $m_1 \sim 11$ around the time of perihelion passage.

88P/Howell

This comet's 2009 return is fairly similar to (although slightly inferior to) that of 1998, when it reach a peak brightness of $m_1 \sim 10$. It is at opposition in early April and remains in the evening sky thereafter; based upon its behavior in 1998, it should become visually detectable ($m_1 \sim 13$) around July and should peak at $m_1 \sim 11$ around the time of perihelion in mid-October. Its elongation continues to decrease after that, and the comet will disappear into evening twilight around the end of the year.

169P/NEAT

This comet, which has the second-shortest orbital period (4.2 years) of all known short-period comets, was not recognized as being cometary until the previous return in 2005, despite having been discovered 3.5 years earlier, when only eight months after its prior perihelion passage. In 2005, the comet appeared almost entirely asteroidal until shortly before perihelion, but for a brief time thereafter appeared as a more "normal" cometary object near $m_1 \sim 11-12$ (albeit at a fairly small elongation).

If the same behavior repeats in 2009, the comet will probably remain asteroidal in appearance until perhaps early November, when it will be at an elongation of 45° in the evening sky. It is at inferior conjunction (35° south of the sun) in late December en route to passing 0.19 AU from the earth in mid-January 2010, and may reach a peak brightness of $m_1 \sim 12$ at the very end of the year. Observations will likely be restricted to the southern hemisphere, as — in addition to passing south of the sun — the comet will be in southern circumpolar skies by year's end and will reach a peak southerly declination of $\delta \sim -71^\circ$ in early January 2010.

81P/Wild

In 2010, this comet has its most favorable return since its original discovery in 1978 and should reach a peak brightness of $m_1 \sim 9$. It may become visually detectable at $m_1 \sim 13-14$ by September or October 2009 and should reach $m_1 \sim 10-11$ by the end of the year.

Short-Period Comets: Fainter Objects

204P/LINEAR-NEAT

This comet's 2008-2009 return is essentially identical to its discovery return in 2001-2002, when it was visually observed at $m_1 \sim 14$ at 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 $m_1 \sim 14$ around the time of opposition in late January 2009. As of this writing (mid/late November 2008), 204P is still very faint.

210P/2003 K2 (Christensen)

In 2009, this comet makes its first predicted return following its discovery in 2003, when it wasn't discovered until over 1.5 months past perihelion. Its pre-perihelion brightness behavior is thus poorly understood.

The comet disappears into evening twilight in early January 2009 and is at inferior conjunction late that month. It then emerges into the morning sky at the beginning of February and passes 0.33 from the earth a few days later. The 2003 brightness suggests its could be as bright as $m_1 \sim 9$ around that time, although fading rapidly (to $m_1 \sim 13$ by mid-March), but at this time these brightness projections must be regarded as quite uncertain.

67P/Churyumov-Gerasimenko

This comet was at opposition as long ago as August 2008 and has become visually detectable as a very faint object ($m_1 \sim 14$), as of this writing. It remains in the evening sky and should brighten slowly, perhaps reaching $m_1 \sim 13$ around the time of perihelion passage, at which time its elongation will be 47° ; the comet continues to approach evening twilight after that and probably will not remain visible for much longer.

116P/Wild

As of this writing, this comet has not yet become visually detectable but may reach $m_1 \sim 14$ by the end of 2008. It is at opposition in early February 2009 and should remain accessible until it disappears into evening twilight around August; a peak brightness of $m_1 \sim 12.5$ -13 between March and May is expected, based upon the comet's behavior at previous returns.

P/2004 X1 (LINEAR)

As with several of the other comets described herein, this object makes its first predicted return to perihelion in 2009; as is also true for those other comets, brightness predictions for this one must be considered as quite uncertain. It passes 0.19 AU from the earth in mid-August, around which time it may be $m_1 \sim 13$ and observable from the southern hemisphere; after inferior conjunction later that month, the comet emerges into the morning sky in early September and may still be briefly accessible from the northern hemisphere at $m_1 \sim 14$.

107P/Wilson-Harrington

This dual-designated comet/minor planet passes 0.38 AU from the earth in mid-November, its closest approach since its re-discovery return in 1979. Unless there is a repeat of the weak cometary activity that it briefly exhibited at its discovery return in 1949, 107P will likely remain entirely asteroidal throughout its period of visibility; it may possibly reach " m_1 " ~ 15 during mid- to late November.

118P/Shoemaker-Levy

This comet's 2009-2010 return is essentially identical to that in 1996-1997, when it reached a peak brightness of $m_1 \sim 12$. It is at opposition shortly before mid-December 2009 and should reach its peak brightness around that time; visual detectability should extend from perhaps October 2009 until February 2010.

Other comets

Additional comets that might be worth visual-observation attempts in 2009 include the recent long-period discoveries C/2008 N1, which will be at opposition in early July (near a declination of $\delta \sim +55^\circ$), and C/2008 P1, which is at opposition in late September; the first-return periodic object 209P/2004 CB, which passes 0.26 AU from the earth in early April (and which will pass by a much-closer 0.05 AU at the subsequent return in 2014); and 77P/Longmore, which has never had a favorable return but which is moderately well placed in 2009, being at opposition in late March a little over three months prior to perihelion passage. There is also 199P/Shoemaker, which underwent a significant outburst in August 2008, reaching $m_1 \sim 14$ and which at this writing is near solar conjunction; it is at opposition again in early August 2009 (near $\delta \sim -40^\circ$), but it will likely have subsided from its outburst brightness by then and thus be beyond the range of visual observations.

Other objects

Two "cometary" minor planets may become bright enough for visual observations in 2009. Minor planet (3552) Don Quixote passes 0.75 AU from the earth shortly after mid-September and should reach " m_1 " ~ 15 between August and October; initially it is primarily visible from the southern hemisphere, being at $\delta \sim -56^\circ$ in late August but traveling far enough north to be accessible from the northern hemisphere by early October. The object (20898) Fountainhills should be brightest when near opposition at the end of January 2010 but should be visible at " m_1 " ~ 15 in December 2009.

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Unpublished Observations of the Eclipse Comet, C/1948 V1

F. Lancaster Hiett,[†] Michael Saladyga[‡], and Thomas R. Williams^{}*

While researching for the writing of a centennial history of the American Association of Variable Star Observers (AAVSO), the second and third authors (MS and TRW) of this note found mention in the AAVSO records of an independent discovery of comet 1948 ℓ (= 1948 XI; new-style designation C/1948 V1) having been made by long-time variable-star observer F. Lancaster Hiett of Arlington, Virginia.

[†]Martinsburg, WV, U.S.A. (b. 1915 May 6, d. 2004 July 26).

[‡]AAVSO, Cambridge, MA, U.S.A. ^{*}Houston, TX, U.S.A. Some background information to this note regarding the comet has been added by D. W. E. Green, who put together the material sent via e-mail by Saladyga and Williams.

Hiett, who died five years ago, included mention of his observations of this comet in a letter dated 1948 Nov. 11 and in his variable-star report form for the same month — in both cases addressing Leon Campbell at Harvard College Observatory (where the AAVSO was then located). Hiett was living in Martinsburg, West Virginia, at the time, though he later moved to Arlington, where he was a junior-high-school science teacher. Hiett contributed 115,909 observations to the AAVSO during more than six decades (1936-1998), and was presented with the AAVSO's twenty-seventh Merit Award. Active in local astronomy clubs, he had served in the U.S. Army in World War II.

In Hiett's letter of 1948 Nov. 11, he wrote: "Dear Dr. Campbell:

"I had the pleasure of observing the new comet which was discovered in South Africa and has been termed Comet-1948-L, I understand.

"I first observed this new comet at 5:24 A. M. [inserted in pen: (Nov. 11th)] just as the first light from the oncoming sun was beginning to appear in the southeastern sky. It was easily visible to my unaided eyes and I judge it to be of second magnitude with a tail of from 15 to 18 degrees in length extending in a southwesterly direction. I will give its approximate location when I first observed it this morning. It appeared to be located (the nucleus) at about 30 degrees south and almost in a straight line with γ and ϵ Corvi which would be Right Ascension 1200 hours. If this information can be of any use would you please, Dr. Campbell, relay it to the proper authorities at Harvard.

"Very sincerely, F. Lancaster Hiett"

Hiett's comments on his variable-star report form for the same month, which were addressed also to Campbell, were as follows: "... My visual observation of Comet L differs with what positions are given by Harvard Computations.¹ I saw it in the morning of Nov. 15th. It was still very conspicuous of mag. 2.5 to 3.0. Thanks for receipt of computations. Regards, L. Hiett".

C/1948 V1 was first seen as a bright comet with a long tail by observers in Africa during the total solar eclipse of 1948 Nov. 1; airplane pilots and ground-based observers began discovering the comet visually during Nov. 4-7,² though news of this apparently did not reach astronomers at the astronomical telegram bureaus in the northern hemisphere until Nov. 8,³ and the news of the comet being visible during the eclipse did not reach the Central Bureau in Copenhagen until more than a week after totality. Leland E. Cunningham at Berkeley soon confirmed that orbital elements produced from ground-based astrometry placed the comet at the observed position at totality on Nov. 1 (IAUC 1189). Given the many independent discoveries, C/1948 V1 carries only the simple name "Eclipse Comet", making it the last confirmed comet to have never been given the name of a discoverer (or a discovery program/project). In early January, ground-based observers estimated the comet's brightness to range from mag perhaps -4 to $+1$, and the tail length to be as long as 20° . The comet slowly faded to mag 4-5 by the end of November.

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Tabulation of Comet Observations

As noted in the last issue on page 124 (though the practice of removal was not followed therein), we have now moved descriptive information regarding (a) the listing of non-primary "amateur" software sources of comparison-star magnitudes and (b) the listing of $B-V$ values of comparison stars to the ICQ website in plain ASCII text form. (We plan to make this tabulated in the near future.) The exception here is where $B-V$ colors of comparison stars are $\geq +1.0$, translating to a difference of $\Delta(m_v - V) \simeq 0.2$ mag or more between the visual and photoelectric V bandpasses (see *ICQ Guide to Observing Comets*, equations 4.1), and such $B-V$ will continue to appear here in print (though hopefully only rarely, as observers are strongly discouraged from using red stars in their visual brightness estimates).

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 6P/d'Arrest \Rightarrow 2008 Aug. 1.95: "clearly brighter than a week ago; large, diffuse outer coma surrounding the central cond. area" [GON05]. Aug. 2.64 and 3.51: "diffuse, but already easy to see; it looks very large with a clear sky" [YOS04]. Aug. 3.97: clouds [PAR03]. Aug. 8.89: dense star field [BRE03]. Aug. 19.41: weather conditions were problematic; obs. rather hurried [SEA]. Aug. 28.00: several stars inside coma, the brightest being of mag 10.2 (Tycho-2) [GON05]. Aug. 28.93: comp. stars have $V = 9.01$ ($B-V = +1.16$) and 9.60 ($+0.31$) [AMO01]. Sept. 2.54: broad, fan-shaped coma expands toward N-SW [TSU02]. Sept. 6.94 and 7.95: moonlight [AMO01]. Sept. 7.95: comp. stars have $V = 9.21$ ($B-V = +1.10$) and 9.83 ($+1.24$); moonlight [AMO01]. Sept. 9.48: near the bright moon, hard to see [YOS04]. Sept. 24.97: alt. 7° [GON05]. Oct. 1.86 and 3.86: alt. 8° [GON05]. Oct. 19.90: alt. 11° ; moonlight interference [GON05]. Oct. 25.99: alt. 5° [GON05]. Oct. 30.49: coma expands toward the NW [TSU02].

¹The "Harvard Computations" probably referred to the orbital elements and ephemeris for this comet published on *Harvard College Observatory Announcement Card* No. 955 (dated 1948 Nov. 13), which also may have been received by Hiett by way of telegram. — Ed.

²G. Kronk (2009), *Cometography* 4, 311 (Cambridge University Press).

³H. Shapley (1948), *Harvard College Observatory Announcement Card* 952, dated Nov. 8; J. M. Vinter Hansen (1948), *IAU Circular* 1186, dated Nov. 9.

◊ *Comet 7P/Pons-Winnecke* \Rightarrow 2008 Aug. 23.86: end of astron. twilight; alt. 14° [GON05]. Sept. 19.82: astron. twilight; alt. 10° [GON05]. Sept. 24.82: astron. twilight; alt. 8° ; mountain location, very clear sky [GON05].

◊ *Comet 15P/Finlay* \Rightarrow 2008 Aug. 1.03: twilight; alt. 13° [PAR03]. Aug. 2.12: alt. 13° [GON05]. Aug. 3.76: "tough to see due to the low alt., but the comet is still bright" [YOS04]. Sept. 9.79: has faded much in last month [YOS04].

◊ *Comet 19P/Borrelly* \Rightarrow 2008 Aug. 2.15: mountain location, very clear sky; alt. 9° [GON05]. Aug. 2.15, Sept. 17.18, 29.20 and Oct. 9.19: zodiacal light [GON05]. Sept. 9.80: "not easy to see due to the dim sky in the morning" [YOS04]. Sept. 17.18: elongated coma; comet close to star of mag 8.8 (Tycho-2) [GON05].

◊ *Comet 29P/Schwassmann-Wachmann* \Rightarrow 2008 Sept. 21.18: CCD images taken with a 20-cm $f/9$ C show a starlike comet in apparent outburst ($m_2 = 11.3$, or 3.5 mag brighter than when last obs. with same instrumentation on Sept. 15.18); ref. for comp.-star mags apparently USNO-A2.0 cat. (used for the astrometric data sent to the Minor Planet Center) [J. A. Henriquez, Tenerife, Spain]. Sept. 22.81: CCD images w/ 25-cm $f/5$ L show comet to be starlike in appearance, total mag 11.4 (ref. Tycho-2 cat.); astrometry sent to Minor Planet Center [K. Kadota, Ageo, Japan]. Sept. 25.10: evolving after the recent outburst; some moonlight interference (moon's alt. 8°) [GON05]. Oct. 4.76: "first obs. since the major outburst on Sept. 21; my first time to see such a bright and huge 29P; looks round, like a planetary nebula" [YOS04]. Oct. 26.11: several stars inside coma, the brightest being of mag 11.8 (Tycho-2) [GON05].

◊ *Comet 33P/Daniel* \Rightarrow 2008 Sept. 4.02: five unfiltered 300-sec CCD images (limiting mag 21.0) taken w/ a Takahashi FRC-300 30-cm $f/7.8$ telescope (+ Apogee Alta U9000 CCD camera) at Kazan State University's (KSU) Astrotel Observatory (Karachay-Cherkessia, Russia) by T. Kryachko, S. Korotkiy, and B. Satovskiy yield total mag 19.0 ± 0.4 with a $16''$ coma and $DC = 3$; astrometry publ. in *MPCs*, submitted as recovery of the comet (astrometric obs. were also made five nights earlier by M. Jäger at Stixendorf, Austria, which constituted the first astrometry of comet 33P since Apr. 2001) [Stanislav Korotkiy, Moscow, Russia].

◊ *Comet 47P/Ashbrook-Jackson* \Rightarrow 2008 Aug. 6.02: nearby field stars checked via Digitized Sky Survey; comp.-star mags taken from Henden photometry near GRB 030723; mountain location, very clear sky [GON05].

◊ *Comet 51P/Harrington* \Rightarrow 2008 Sept. 7.15: nearby field stars checked via Digitized Sky Survey; comp.-star mags taken from Henden photometry near IK Tau; mountain location, very clear sky [GON05]. Sept. 9.75: sky clear [YOS04].

◊ *Comet 67P/Churyumov-Gerasimenko* \Rightarrow 2008 Aug. 6.04 and Oct. 1.91: nearby field stars checked via Digitized Sky Survey; comp.-star mags taken from Henden photometry near GRB 030723 [GON05]. Oct. 1.91: mountain location, very clear sky [GON05].

◊ *Comet 190P/2007 O2 (Mueller)* \Rightarrow 2007 July 26.09: recovery of P/1998 U2 (astrometry publ. on *IAUC* 8859); CCD images taken by L. Buzzi and F. Luppi with a 60-cm $f/4.6$ L show the object to be slightly diffuse ($m_2 = 19.5$; ref. USNO-B1.0 catalogue) [Luca Buzzi, Varese, Italy].

◊ *Comet 199P/Shoemaker* \Rightarrow 2008 Aug. 3.9: ten co-added 60-sec *R*-band CCD exposures taken w/ a 30-cm T shows 199P to be in outburst at mag 14.6 ± 0.1 in a box of (apparently) size $10'' \times 10''$, the coma dia. being $15''$ (his previous obs. from July 14 had shown the comet in a similar aperture to be at mag 17.9); mag ref. presumably USNO-A2.0 cat.; astrometry contributed to Minor Planet Center [Gustavo Muler, Lanzarote, Spain]. Aug. 3.9: original FITS images obtained by Gustavo Muler were given to G. Sostero for photometric analysis, who used well-calibrated solar-type (Hipparcos-Tycho catalogue) stars as references; Johnson-*V*-band and Cousins-*R*- and *I*-band images show this comet to be some 4 mag brighter than at Muler's previous obs. from 2008 July 14.94 (when it was at mag ~ 17.5); [Giovanni Sostero, Remanzacco, Italy]. Aug. 3.91: clearly in outburst at "nuclear" mag 14.6, vs. $m_2 = 18.8$ on May 2 and 18.4 on June 25; (MPC archival data suggest that outburst of some three mag occurred sometime between July 14 and Aug. 3 — Ed.), w/ a round coma at least $25''$ in dia., slightly diffuse toward the E; CCD astrometry w/ a 36-cm $f/7.6$ L (publ. in *MPCs*) [Luca Buzzi, Varese, Italy]. Aug. 4.16 and 4.18: thirty co-added 60-sec CCD exposures taken remotely with a 25-cm $f/3.4$ reflector near Mayhill, NM, U.S.A., confirm the outburst announced by G. Muler, revealing a bright featureless star-like object of mag 14.7 (comp.-star ref. appears to be UCAC-2; astrometry contributed to Minor Planet Center) [E. Guido and G. Sostero, Castellammare di Stabia, Italy]. Aug. 4.88: CCD astrometry (publ. in *MPCs*) w/ a 60-cm $f/4.6$ L yields $m_2 = 14.3$ (see obs. for Aug. 3.19, above) [Luca Buzzi, Varese, Italy]. Aug. 4.92: "in outburst"; nearby field stars checked via Digitized Sky Survey; comp.-star mags taken from Henden photometry near AR Ser; mountain location, very clear sky [GON05]. Aug. 6.9: additional images by Muler showed a decrease from $R = 13.7$ on Aug. 3.9 (see notes above) to 14.5 tonight, while the *R-I* color has been nearly constant (within the uncertainty) at $+0.5 \pm 0.3$ (*i.e.*, nearly solar colors) [Giovanni Sostero, Remanzacco, Italy].

◊ *Comet 200P/2008 L1 (Larsen)* \Rightarrow 2008 Sept. 2.66: Guide 8.0 software used for comp.-star mags; comp. star has $B-V = +1.10$ [TSU02].

◊ *Comet 205P/2008 R6 (Giacobini)* \Rightarrow 2008 Sept. 11.07: est. made after moonset; nearby field stars checked via Digitized Sky Survey; rural dark-sky location (elevation 850 m, near Palencia, Spain) [GON05]. Sept. 19.83: before moonrise; mountain location, very clear sky [GON05]. Sept. 24.92: exceptionally clear sky [GON05]. Sept. 25.33-25.35: CCD images were taken by N. Teamo with a 35-cm $f/2$ T at Punaauia, Tahiti, showing three components of comet 205P; comp. 'A' was of mag 15.2 (apparently stellar in appearance), comp. 'B' was of total mag 19.2-19.3 (coma dia. $12''$), and comp. 'C' was of total mag 20.1-20.4 (notably more diffuse, with diameter $\sim 20''$); USNO-B1.0 catalogue apparently used

for astrometry (reported to Minor Planet Center) and photometry [measured/reported by S. F. Hoenig, Germany]. Oct. 4.42: obs. from Kita-karuizawa, Gunma, Japan; difficult to see due to the poor sky condition; somewhat condensed at the center, w/ outer faint coma; difficult to determine the DC value [YOS04]. Oct. 30.47: comp. star has $B-V = +1.02$ [TSU02].

◊ *Comet 207P/2008 T5 (NEAT)* \implies 2008 Oct. 15.78: CCD images w/ 25-cm $f/5$ L show coma dia. 0'.6 w/ central cond. and no tail, total mag 16.4 (ref. Tycho-2 cat.); astrometry sent to Minor Planet Center [K. Kadota, Ageo, Japan]. Oct. 17.80: CCD images w/ 25-cm $f/5$ L show coma dia. 0'.5 w/ no tail in somewhat-poor conditions; total mag 16.5 (ref. Tycho-2 cat.); astrometry sent to Minor Planet Center [K. Kadota, Ageo, Japan].

◊ *Comet C/2005 L3 (McNaught)* \implies 2008 Aug. 3.49: looks cometary now and brighter than when it appeared starlike about half-a-year ago [YOS04]. Aug. 18.86: moonlight [BRE03]. Sept. 6.93: comet close to star of mag 12.5 (GSC) [GON05].

◊ *Comet C/2006 L1 (Garradd)* \implies 2007 Jan. 27.77: 202 individual, stacked exposures [WAR01].

◊ *Comet C/2006 M4 (SWAN)* \implies 2006 Oct. 27.75: straight tail; 50-mm $f/2.8$ camera lens (thirty 10-sec exposures); new *ICQ* codes for CCD camera (ATI = ATIK 2HS) and camera chip (ICZ = Sony ICX-424AL) [AND01]. Oct. 28.75: at 0°.7 from the nuclear cond., the straight tail changes direction to p.a. 36°; in response to a query about the long tail length, WAR01 notes that he and KAR02 obs. tail lengths up to 6° visually [AND01]. Nov. 7.78: 120 individual, stacked exposures [AND01].

◊ *Comet C/2006 OF₂ (Broughton)* \implies 2008 July 27.93: moonlight [PAR03]. July 27.99: two bright stars of mag 14.3 and 14.2 located 22" and 9" from the central cond. [BRE03]. Aug. 2.78 and 3.72: near α Per and easy to find; moderately condensed; obs. from Kita-karuizawa, Gunma, Japan [YOS04]. Aug. 7.95: dense star field; a star of mag 15.6 located 28" from the central cond. [BRE03]. Aug. 12.02: CCD image size $\sim 1^{\circ}5$ [QVA]. Aug. 16.07: moonlight; total tail length indeterminate [QVA]. Aug. 26.91: haze [PAR03]. Sept. 6.98: several stars inside coma, the brightest having mag 12.8 (GSC) [GON05]. Sept. 9.72: obs. from Kita-karuizawa, Gunma, Japan; "easy to see; looks more diffuse than C/2006 W3" [YOS04]. Sept. 22.83: also an apparent faint tail at p.a. $\sim 360^{\circ}$, visible only in *V*-band images (not in Bessel *B*- and *R*-band images, which were not flat-field-corrected) [QVA]. Sept. 29.15: star of mag 12.4 (Tycho-2) inside coma [GON05]. Oct. 4.74: "moderately condensed; bright and easy to see" [YOS04]. Oct. 9.12: comet close to star of mag 7.1 (Tycho-2) [GON05]. Oct. 11.08: coma involved with 12th-mag star [MEY].

◊ *Comet C/2006 Q1 (McNaught)* \implies 2008 Apr. 27.86: low alt. [TOT03 and SZA].

◊ *Comet C/2006 W3 (Christensen)* \implies 2008 Aug. 3.77: "easy to see" [YOS04]. Aug. 28.06: star of mag 12.0 (Tycho-2) inside coma [GON05]. Sept. 9.71: "surprisingly bright; small, but extremely strongly condensed — thus easy to see" [YOS04]. Sept. 24.93: star of mag 12.4 (Tycho-2) inside coma [GON05]. Sept. 29.16: star of mag 10.2 (Tycho-2) inside coma [GON05]. Oct. 4.51: "strongly condensed; bright and easy to see" [YOS04]. Oct. 5.85: star of mag 13.9 located 43" from the central cond. [BRE03]. Oct. 19.80: no enhancement w/ a Lumicon Swan Band Filter [MEY].

◊ *Comet C/2007 G1 (LINEAR)* \implies 2008 Aug. 1.90: alt. 9° [GON05].

◊ *Comet C/2007 N3 (Lulin)* \implies 2008 July 27.89: alt. 19° [PAR03]. July 30.94: clouds; alt. 16° [PAR03]. Aug. 1.91: elongated coma [GON05]. Aug. 2.62 and 3.49: "near Jupiter and easy to find; tiny"; affected by low clouds on Aug. 2 [YOS04]. Aug. 7.93, Sept. 6.95, and 7.95: moonlight [AMO01]. Sept. 24.85: alt. 9° [GON05]. Oct. 3.81: alt. 12°; some interference from moonlight (Moon's alt. 3°) [GON05]. Oct. 18.79: alt. 8°; zodiacal light [GON05]. Oct. 19.79: alt. 7°; zodiacal light; mountain location, very clear sky [GON05].

◊ *Comet C/2007 U1 (LINEAR)* \implies 2008 Sept. 9.73: tiny [YOS04]. Sept. 29.06: nearby field stars checked via Digitized Sky Survey; comp.-star mags taken from Henden photometry near IK Tau [GON05]. Oct. 21.89: faint, somewhat condensed; position checked vs. Digitized Sky Survey; motion obvious after some 30 min [BOU]. Oct. 25.79: ephemeris from Minor Planet Center online service; checked with Digitized Sky Survey images; limiting stellar mag 15.5 [HAS02].

◊ *Comet C/2007 W1 (Boattini)* \implies 2008 Aug. 3.71: "diffuse, but bright and easy to see" [YOS04]. Aug. 9.73: LONEOS sequence for AO 0235+164 used for comp.-star mags [YOS02]. Aug. 13.11: comet close to star of mag 8.6 (Tycho-2) [GON05]. Aug. 28.04: stars of mag 11.9 and 12.2 (GSC) inside coma [GON05]. Sept. 2.71: comp. star has $B-V = +1.29$ [TSU02]. Sept. 2.87: haze [PAR03]. Sept. 7.00: star of mag 10.8 (Tycho-2) inside coma [GON05]. Sept. 9.70: "still bright", but very diffuse; slightly condensed at the center, surrounded by a large, faint outer coma [YOS04]. Oct. 4.45: "very faint and diffuse; hard to see directly, but not hard to find w/ averted vision" [YOS04].

◊ *Comet C/2007 W3 (LINEAR)* \implies 2008 July 21.89: stellar appearance; poor conditions; moonlight [BRE03].

◊ *Comet C/2008 A1 (McNaught)* \implies 2008 Aug. 11.90: moonlight; alt. 20° [AMO01]. Aug. 19.40: weather conditions were problematic; obs. rather hurried [SEA]. Sept. 2.36: somewhat enhanced through Swan-band filter [SEA]. Sept. 6.93 and 7.93: comp. stars have $V = 6.83$ ($B-V = +1.08$) and 7.32 (+0.92); moonlight [AMO01]. Sept. 16.38: sky quite bright due to rising moon [SEA]. Sept. 19.40: tail that had been suspected on Sept. 17 was apparently confirmed under less-favorable conditions [SEA]. Sept. 21.93 and 23.93: comp. stars have $V = 7.14$ ($B-V = +1.01$) and 7.79 (+0.43) [AMO01]. Oct. 3.79: end of naut. twilight; alt. 5°; moonlight interference (moon's alt. 6°); only the brighter region of coma was obs. in the twilight [GON05]. Oct. 3.79 and 18.80: mountain location, very clear sky [GON05]. Oct. 7.92:

moonlight [AMO01]. Oct. 18.80 and 19.80: alt. 10°; zodiacal light [GON05]. Oct. 24.79: alt. 12° [GON05]. Oct. 26.71: alt. 9° [PAR03]. Oct. 27.95: comp. stars have $V = 7.51$ ($B-V = +0.35$) and 7.94 (+1.17) [AMO01].

◊ *Comet C/2008 J1 (Boattini)* ⇒ 2008 July 26.92: moonlight; interference from star of mag 10.3 [PAR03]. July 27.86: a star of mag 13.8 located 1'.1 from the central cond. [BRE03]. July 29.90 and Aug. 6.88: clouds [PAR03]. Aug. 2.65 and 3.50: "diffuse, but bright and large; easy to see" [YOS04]. Aug. 8.92: a star of mag 13.6 located 30" from the central cond. [BRE03]. Aug. 26.88 and Sept. 2.86: haze [PAR03]. Aug. 27.86: a star of mag 16.1 located 15" from the central cond. [BRE03]. Aug. 28.12: comet close to star of mag 9.9 (Tycho-2) [GON05]. Sept. 9.69: "still bright and easy to see" [YOS04]. Oct. 4.44: "still bright, diffuse", similar to its appearance in Aug. and Sept. [YOS04]. Oct. 5.82: a star of mag 15.9 located 14" from the central cond. [BRE03].

◊ *Comet P/2008 L2 (Hill)* ⇒ 2008 Sept. 29.19: nearby field stars checked via Digitized Sky Survey; comp.-star mags taken from Henden photometry near IK Tau; mountain location, very clear sky [GON05].

◊ *Comet C/2008 N1 (Holmes)* ⇒ 2008 Oct. 19.06: CCD images w/ 61-cm $f/4$ astrograph yield $m_2 = 18.5-18.6$ (ref. for comp.-star mags evidently USNO-B1.0 catalogue, the source for the astrometry submitted to the Minor Planet Center), faint tail 25".7 long in p.a. 105°1 [R. Holmes, Charleston, IL, USA].

◊ *Comet P/2008 Q2 (Ory)* ⇒ 2008 Sept. 29.03: nearby field stars checked via Digitized Sky Survey; comp.-star mags taken from Henden photometry near IK Tau [GON05]. Oct. 24.99: "very difficult object in rather empty field; position checked vs. Digitized Sky Survey; at moments of good seeing, it looked larger and softer than stars of similar brightness, w/ a faint coma of dia. $\sim 0'.3$; comp. stars taken from nearby Henden sequence for RU Ari" [BOU]. Oct. 26.03: comet close to star of mag 8.6 (Tycho-2); nearby field stars checked via Digitized Sky Survey; comp.-star mags taken from Henden photometry near IK Tau; mountain location, very clear sky [GON05].

◊ *Comet C/2008 T2 (Cardinal)* ⇒ 2008 Oct. 9.17: nearby field stars checked via Digitized Sky Survey; comp.-star mags taken from Henden photometry near Z UMi; mountain location, very clear sky [GON05]. Oct. 21.87 and 24.95: "small, very condensed object; faint, but clearly seen; position checked vs. Digitized Sky Survey; comp.-star mags taken from Henden photometry of Z UMi field" [BOU and DIJ]. Oct. 26.09: nearby field stars checked via Digitized Sky Survey; comp.-star mags taken from Henden photometry near Z UMi [GON05].

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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.]:

AMO01	Alexandre Amorim, Brazil	NOV01	Artyom O. Novichonok, Russia
AND01	Karl-Gustav Andersson, Sweden	PAP04	Giuseppe Pappa, Sicily, Italy
BOR04 37	Sergiy A. Borysenko, Ukraine	PAR03	Mieczyslaw L. Paradowski, Poland
BOU	Reinder J. Bouma, Netherlands	PILO1	Uwe Pilz, Leipzig, Germany
BRE03 23	Emil Brezina, Vsetín, Czech Rep.	QVA	Jan Qvam, Horten, Norway
CHE03	Kazimieras T. Cernis, Lithuania	SALO3	Raul Salvo, Montevideo, Uruguay
DES01	Jose G. de Souza Aguiar, Brazil	SAN04 38	Juan M. San Juan, Madrid, Spain
DIE02	Alfons Diepvens, Belgium	SAN07 32	Gábor Sánta, Hungary
DIJ	Edwin van Dijk, The Netherlands	SEA	David A. J. Seargent, Australia
GON05	Juan Jose Gonzalez, Spain	SHU	Sergey E. Shurpakov, Belarus
*HAR10 16	Ken Harikae, Chiba, Japan	SOU01	William Carlos de Souza, Brazil
HAS02	Werner Hasubick, Germany	SZA	Sándor Szabó, Sopron, Hungary
JON	Albert F. Jones, New Zealand	TOT03 32	Zoltán Tóth, Hungary
MAJ01 32	Leonel Majzik, Hungary	TSU02 16	M. Tsumura, Wakayama, Japan
MAR02	Jose Carvajal Martinez, Spain	WAR01	Johan Warell, Sweden
MEY	Maik Meyer, Germany	XU	Wentao Xu, Guangzhou, China
NAG04 16	Kazuro Nagashima, Nara, Japan	YOS02 16	Katsumi Yoshimoto, Hirao, Japan
NEV	Vitali S. Nevski, Belarus	YOS04 16	Seiichi Yoshida, Kanagawa, Japan

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NOTE: The tabulated CCD data summary begins on page 149 of this issue.

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Tabulated Visual-Data Summary

As begun the July 2007 issue, we now publish summaries of contributed tabulated data instead of publishing each line of observation that is contributed to the *ICQ* (with rare exceptions, as with comets C/2006 P1 and 17P in the last couple of years); the following format serves the purpose of summarizing all the comets that had data reported with their observational arcs for each observer. The full 80-character observation records are posted at the *ICQ* website (<http://www.cfa.harvard.edu/icq/icqobs.html>), and are available upon request by e-mail to the *ICQ* Editor.

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).

Comet 6P/d'Arrest

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 26.93	9.2	2008 10 02.96	9.2	AM001/ 12
2008 08 12.99	9.1			BOU
2008 09 01.91	8.8	2008 09 02.91	8.6	DES01/ 2
2008 08 12.99	9.6			DIJ
2008 08 01.95	10.8	2008 10 25.99	9.3	GON05/ 14
2008 08 03.96	11.6	2008 08 09.85	10.8	HAS02/ 2
2008 08 10.65	11.4	2008 09 22.49	11.7	NAG04/ 2
2008 08 07.90	10.8			NEV
2008 08 03.97	9.8:	2008 08 07.91	11.1	PAR03/ 2
2008 08 30.90	12.2			PIL01
2008 08 19.41	8.8	2008 09 17.40	8.6	SEA / 2
2008 09 22.54	10.2			TSU02
2008 08 24.55	8.8	2008 10 30.47	10.5	YOS02/ 2
2008 08 02.64	12.1	2008 09 09.48	9.0:	YOS04/ 3

Comet 7P/Pons-Winnecke

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 23.86	12.2	2008 09 24.82	11.0	GON05/ 3

Comet 8P/Tuttle

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 01 09.40	6.8	2008 04 01.37	10.7	JON / 14

Comet 15P/Finlay

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 02.12	11.2			GON05
2008 08 01.03	10.6:			PAR03
2008 08 03.76	10.8:	2008 09 09.79	[13.1	YOS04/ 2

Comet 17P/Holmes

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 02 02.77	4.2			BOU
2008 01 14.78	4.0:			CHE03

Comet 19P/Borrelly

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 02.15	9.6	2008 10 26.18	11.1	GON05/ 6
2008 08 10.79	11.9	2008 10 08.79	12.5	NAG04/ 2

Comet 19P/Borrelly [cont.]

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 09 07.82	10.7			YOS02
2008 09 09.80	11.3			YOS04

Comet 29P/Schwassmann-Wachmann

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 02 01.98	[12.0	2008 02 06.99	12.5:	AM001/ 3
2008 10 09.16	10.6			DIE02
2008 09 25.10	10.9	2008 10 26.11	10.4	GON05/ 4
2008 10 11.10	10.3			MEY
2008 10 08.73	11.3			NAG04
2008 09 23.08	11.2			NEV
2008 10 08.13	10.5			PAP04
2008 09 09.77	[12.8	2008 10 04.76	10.4	YOS04/ 2

Comet 46P/Wirtanen

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 03 04.95	[9.5			AM001
2008 04 27.87	12.5			SZA
2008 04 27.87	12.5			TOT03

Comet 47P/Ashbrook-Jackson

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 06.02	14.6			GON05

Comet 51P/Harrington

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 09 07.15	14.0			GON05
2008 09 09.75	[13.9			YOS04

Comet 67P/Churyumov-Gerasimenko

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 06.04	[14.8	2008 10 01.91	14.7	GON05/ 2

Comet 199P/Shoemaker

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 04.92	14.4	2008 08 05.91	14.2	GON05/ 2

Comet 205P/Giacobini

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 09 25.85	12.5	2008 10 29.78	13.3:	BOU / 3
2008 09 25.85	12.7	2008 09 27.84	12.6	DIJ / 2
2008 09 11.07	12.7	2008 10 26.00	12.9	GON05/ 7
2008 10 25.77	13.2			HAS02
2008 10 04.42	12.6			YOS04

Comet C/2005 L3 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 10.91	13.1			BOU

Comet C/2005 L3 (McNaught) [cont.]

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 01.93	12.7	2008 09 06.93	12.6	GON05/ 2
2008 05 07.91	13.0:			SAN07
2008 04 27.91	12.9	2008 05 09.89	13.1	SZA / 2
2008 04 27.92	13.2	2008 06 29.96	13.4	TOT03/ 5
2008 08 03.49	13.3			YOS04

Comet C/2006 DF_2 (Broughton)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 08.95	11.8	2008 10 29.83	11.0	BOU / 9
2008 08 11.03	11.9	2008 10 22.85	11.2	DIE02/ 11
2008 07 30.00	11.3	2008 10 29.84	11.3	DIJ / 9
2008 08 02.07	11.5	2008 10 26.14	10.5	GON05/ 8
2008 10 04.71	11.2			HAR10
2008 10 04.98	11.2			MAR02
2008 10 11.08	10.5:			MEY
2008 09 08.76	12.1			NAG04
2008 08 07.91	12.2			NEV
2008 08 24.90	[11.3			NOV01
2008 10 08.14	10.6			PAP04
2008 07 27.93	11.6:	2008 10 31.94	11.1:	PAR03/ 3
2008 09 27.88	10.2:			PIL01
2008 06 29.98	13.0			TOT03
2008 08 02.76	12.1	2008 10 30.63	10.8	YOS02/ 3
2008 08 02.78	12.6	2008 10 04.74	11.3	YOS04/ 4

Comet C/2006 Q1 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 04 27.86	12.0			SZA
2008 04 27.86	12.1			TOT03

Comet C/2006 W3 (Christensen)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 08.93	12.2	2008 10 29.82	10.6	BOU / 10
2008 09 03.89	10.6	2008 10 22.92	10.5	DIE02/ 11
2008 08 08.94	12.2	2008 10 29.82	10.8	DIJ / 9
2008 08 02.06	12.3	2008 10 26.12	10.1	GON05/ 8
2008 10 09.75	10.8	2008 10 11.76	10.8	HAR10/ 2
2008 10 25.78	11.0			HAS02
2008 08 02.02	12.4	2008 10 04.96	11.5	MAR02/ 2
2008 10 11.09	10.3	2008 10 20.81	10.3	MEY / 3
2008 09 08.78	12.0	2008 10 08.64	11.6	NAG04/ 4
2008 08 07.90	12.0			NEV
2008 10 03.91	10.7	2008 10 13.83	10.5	PAP04/ 2
2008 07 26.89	11.9:	2008 10 31.92	10.5	PAR03/ 2
2008 09 27.89	10.6	2008 10 24.86	10.3	PIL01/ 2
2008 09 07.81	10.4	2008 10 30.50	10.5	YOS02/ 3
2008 08 03.77	12.7	2008 10 04.51	10.8	YOS04/ 3

Comet C/2007 G1 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 01.90	10.8			GON05
2008 06 29.90	13.0			TOT03

Comet C/2007 N3 (Lulin)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 04.92	11.3	2008 10 02.94	9.5	AM001/ 8
2008 08 01.91	10.6	2008 10 19.79	8.3	GON05/ 9
2008 08 09.85	11.8			HAS02
2008 07 27.98	11.0	2008 08 08.99	10.5	MAR02/ 2
2008 09 24.44	11.9			NAG04
2008 08 07.89	11.2			NEV
2008 10 03.75	9.7			PAP04
2008 07 27.89	10.7	2008 07 30.94	11.4	PAR03/ 2
2008 08 30.85	10.9			PIL01
2008 06 29.94	12.7			TOT03
2008 07 24.56	11.3	2008 08 24.52	11.6	YOS02/ 3
2008 08 02.62	12.2:	2008 08 03.49	12.4	YOS04/ 2

Comet C/2007 T1 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 04 27.84	14.5			SZA

Comet C/2007 U1 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 10 21.89	13.8			BOU
2008 10 21.90	13.9			DIJ
2008 09 29.06	13.7			GON05
2008 10 25.79	13.8			HAS02
2008 09 09.73	14.5			YOS04

Comet C/2007 W1 (Boattini)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 31.13	10.0			AM001
2008 08 08.96	7.5	2008 09 25.88	11.1	BOU / 6
2008 07 25.99	7.8:	2008 08 01.95	7.5	CHE03/ 3
2008 07 14.14	6.6	2008 08 13.09	8.2	DIE02/ 5
2008 07 29.01	7.1	2008 09 25.88	10.6	DIJ / 8
2008 08 02.08	7.2	2008 10 01.96	10.7	GON05/ 7
2008 05 27.34	6.5	2008 07 07.75	6.5	JON / 11
2008 04 26.83	8.2			MAJ01
2008 08 03.06	7.1			MAR02
2008 08 05.05	7.1	2008 08 09.05	7.2	MEY / 6
2008 08 10.70	8.7	2008 09 08.72	10.9	NAG04/ 2
2008 08 07.98	7.5			NEV
2008 08 02.90	7.4	2008 08 24.85	9.2	NOV01/ 5
2008 07 31.97	7.1	2008 09 02.87	10.4:	PAR03/ 3
2008 08 31.02	7.7			PIL01
2008 08 03.07	7.3			SAN04
2008 05 07.72	6.8			SAN07
2008 04 27.89	8.1	2008 05 09.86	7.8	SZA / 2
2008 04 27.88	8.0	2008 05 09.87	7.6	TOT03/ 2
2008 08 02.88	7.3			XU
2008 07 29.73	7.3	2008 09 07.78	9.8	YOS02/ 5
2008 08 03.71	7.9	2008 10 04.45	12.4	YOS04/ 3

Comet C/2008 A1 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 11.90	8.3	2008 10 27.95	7.8	AM001/ 17
2008 10 29.74	7.6			BOU
2008 08 31.89	7.0	2008 09 23.92	7.4	DES01/ 16
2008 10 29.77	7.6			DIJ

Comet C/2008 A1 (McNaught) [cont.]

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 10 03.79	7.0	2008 10 24.79	7.2	GON05/ 4
2008 10 08.41	8.9			NAG04
2008 10 13.72	7.5			PAP04
2008 10 26.71	7.7			PAR03
2008 08 21.93	8.5:	2008 10 02.85	8.3	SAL03/ 8
2008 08 19.40	7.6	2008 09 19.40	7.0	SEA / 6
2008 09 21.93	7.3			SOU01
2008-10 11.41	7.7:	2008 10 30.40	8.1	YOS02/ 2

Comet C/2008 C1 (Chen-Gao)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 03 30.95	9.9			CHE03
2008 04 26.81	10.3			MAJ01
2008 04 27.85	10.5			TOT03

Comet C/2008 J1 (Boattini)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 06 10.99	11.6	2008 10 29.76	12.5	BOU / 12
2008 07 14.02	10.1	2008 08 11.07	10.7	DIE02/ 5
2008 06 10.99	11.4	2008 10 24.94	12.7	DIJ / 10
2008 08 01.96	10.2	2008 09 29.17	11.0	GON05/ 9
2008 08 09.86	12.0	2008 10 25.76	11.9	HAS02/ 3
2008 07 28.03	10.0	2008 10 04.95	11.6	MAR02/ 3
2008 08 10.73	13.0			NAG04
2008 08 07.92	10.6			NEV
2008 08 23.88	11.2	2008 08 24.88	10.7	NOV01/ 2
2008 07 26.92	9.9	2008 10 31.96	12.2	PAR03/ 8
2008 08 23.86	10.8	2008 09 27.83	11.7	PILO1/ 3
2008 05 08.03	13.3	2008 06 29.88	10.5	TOT03/ 2
2008 07 24.52	11.2	2008 08 24.57	11.3	YOS02/ 3
2008 08 02.65	10.7	2008 10 04.44	12.1	YOS04/ 4

Comet P/2008 L2 (Hill)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 09 29.19	14.8			GON05

Comet P/2008 Q2 (Ory)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 10 24.99	14.4:			BOU
2008 10 25.00	14.4:			DIJ
2008 09 29.03	14.6	2008 10 26.03	14.4	GON05/ 2

Comet C/2008 T2 (Cardinal)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 10 21.87	14.3	2008 10 24.95	14.1	BOU / 2
2008 10 21.87	14.3	2008 10 24.96	14.3	DIJ / 2
2008 10 09.17	14.3	2008 10 26.09	14.5	GON05/ 2

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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 129-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 129-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 the July 2007 issue, and page 144 of this issue, for additional information on this new summary tabulation.

Comet 4P/Faye

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 09 15.96	11.7 C	2007 01 27.73	11.2 C	WAR01/ 3

Comet 6P/d'Arrest

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 07.89	12.9 k	2008 08 07.89	14.3 k	BRE03/ 3
2008 07 24.92	13.0 C	2008 08 07.93	12.5 C	SHU / 6
2008 07 10.60	14.7 C	2008 10 30.49	12.6 C	TSU02/ 6

Comet 14P/Wolf

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 10.91	19.1 C			SHU

Comet 15P/Finlay

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 04.00	13.9 C			SHU

Comet 19P/Borrelly

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 10 08.02	11.7 C			SHU
2008 08 09.80	10.0 C			YOS02

Comet 29P/Schwassmann-Wachmann

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 09 25.08	10.7 C			NEV
2008 09 23.09	10.9 C	2008 10 22.07	11.7 C	SHU / 5

Comet 44P/Reinmuth

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 09 25.06	18.4 C	2008 10 22.02	17.4 C	NEV / 2

Comet 51P/Harrington

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 09 25.04	15.3 C	2008 10 26.98	15.5 C	NEV / 4
2008 09 28.04	15.4 C	2008 10 22.09	15.9 C	SHU / 3

Comet 59P/Kearns-Kwee

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 09 22.97	17.9 C	2008 10 18.93	17.3 C	NEV / 2
2008 10 02.60	18.2 C			TSU02

Comet 61P/Shajn-Schaldach

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 09 23.04	17.0 C	2008 10 26.95	15.8 C	NEV / 3
2008 09 23.98	16.0 C	2008 10 21.88	15.3 C	SHU / 5
2008 09 02.74	15.8 C	2008 10 02.71	15.9 C	TSU02/ 2

Comet 68P/Klemola

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 09 09.46	16.1 C			TSU02

Comet 85P/Boethin

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 10 02.44	[17.3 C			TSU02

Comet 86P/Wild

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 07 21.50	[18.3:C	2008 07 22.52	[18.4:C	TSU02/ 2

Comet 144P/Kushida

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 10 21.90	17.3 C			NEV

Comet 177P/Barnard

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 09 10.85	9.9 C	2006 09 15.88	10.0 C	WAR01/ 2

Comet 199P/Shoemaker

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 07.82	13.6 C			SHU
2008 08 30.45	15.0 C	2008 09 02.45	15.3 C	TSU02/ 2

Comet 200P/Larsen

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 09 02.66	19.1 C			TSU02

Comet 205P/Giacobini

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 09 23.78	14.0 C	2008 10 20.75	14.4 C	SHU / 3
2008 10 02.52	14.4 C	2008 10 30.47	14.8 C	TSU02/ 3
2008 10 18.48	14.1 C			YOS02

Comet 206P/Barnard-Boattini

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 10 20.77	17.0 C			SHU
2008 10 16.49	16.0 C	2008 10 30.52	17.5 C	TSU02/ 2

Comet C/2005 L3 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 07 27.93	14.0 k	2008 08 27.84	15.6 k	BRE03/ 16
2008 07 22.91	13.9 C	2008 08 01.87	14.0 C	SHU / 6
2008 07 10.50	13.9 C	2008 08 30.45	14.9 C	TSU02/ 2

Comet C/2006 L1 (Garradd)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2007 01 27.77	14.2 C			WAR01

Comet C/2006 M4 (SWAN)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2006 10 27.75	5.5 C	2006 11 09.76	7.0 C	AND01/ 4
2006 10 29.75	5.7 C	2006 11 19.68	8.8 C	WAR01/ 2

Comet C/2006 OF_2 (Broughton)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 07 27.99	12.6 k	2008 08 07.95	14.6 k	BRE03/ 8
2008 08 12.02	12.4 V	2008 09 22.83	11.6 V	QVA / 5
2008 07 22.94	12.8 C	2008 10 22.11	11.4 C	SHU / 18
2008 08 09.77	13.1 C			YOS02

Comet C/2006 Q1 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 07 22.46	13.3 C			TSU02

Comet C/2006 S3 (LONEOS)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 10.96	17.8 C	2008 10 20.79	17.4 C	SHU / 2

Comet C/2006 W3 (Christensen)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 28.79	12.7 C			BOR04
2008 10 05.85	11.6 k	2008 10 05.85	13.9 k	BRE03/ 5
2008 07 22.90	13.2 C	2008 10 22.12	11.6 C	SHU / 15
2008 09 09.74	12.4 C			TSU02

Comet C/2007 B2 (Skiff)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 07 10.47	14.7 C	2008 07 22.48	14.9 C	TSU02/ 2

Comet C/2007 G1 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 07 10.53	13.7 C	2008 07 22.50	14.2 C	TSU02/ 2

Comet C/2007 N3 (Lulin)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 07 22.94	12.0 C	2008 08 07.92	13.7 C	SHU / 7
2008 07 21.59	12.2 C	2008 10 02.41	11.7 C	TSU02/ 5

Comet C/2007 U1 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 10 08.01	14.7 C			SHU

Comet C/2007 W1 (Boattini)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 25.96	9.8 C			BOR04
2008 08 27.92	11.8 k	2008 10 05.79	[18.9 k	BRE03/ 6
2008 07 02.01	9.0 C	2008 09 23.07	13.3 C	SHU / 10
2008 09 02.71	11.9 C	2008 09 09.60	12.4 C	TSU02/ 2
2008 08 09.73	9.5 V			YOS02

Comet C/2007 W3 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 07 21.89	16.9:k	2008 07 27.88	[18.3 k	BRE03/ 4

Comet C/2008 A1 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 10 18.43	8.9 C			YOS02

Comet C/2008 J1 (Boattini)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 22.92	12.5 C			BOR04
2008 07 27.86	12.2 k	2008 10 05.82	16.0 k	BRE03/ 17
2008 10 08.81	14.7 C			NEV
2008 09 03.91	11.5:V			QVA
2008 07 22.92	11.7 C	2008 10 20.70	14.1 C	SHU / 11

Comet P/2008 J2 (Beshore)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 07 21.46	16.8 C			TSU02

Comet C/2008 J6 (Hill)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 07 27.93	18.0 C	2008 08 08.98	18.0 C	SHU / 3

Comet P/2008 L2 (Hill)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 09 22.89	16.0 C	2008 10 21.81	15.9 C	NEV / 4
2008 07 27.94	17.1 C	2008 08 10.99	16.5 C	SHU / 4
2008 09 02.61	16.7 C	2008 10 30.54	16.4 C	TSU02/ 3

Comet C/2008 N1 (Holmes)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 08 10.93	18.5 C			SHU

Comet P/2008 O2 (McNaught)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 10 02.48	[18.2 C			TSU02

Comet C/2008 Q1 (Maticic)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 09 02.87	17.4 C			SHU

Comet P/2008 Q2 (Ory)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 09 24.99	15.5 C	2008 10 31.91	14.3 C	NEV / 4
2008 09 07.06	16.8 C	2008 10 21.83	14.1 C	SHU / 6
2008 09 09.70	16.8 C	2008 10 30.60	13.9 C	TSU02/ 2

Comet P/2008 QP_20 (LINEAR-Hill)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 10 06.95	17.5 C	2008 10 18.88	17.3 C	NEV / 2
2008 09 27.94	17.7 C			SHU

Comet C/2008 R3 (LINEAR)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 10 15.72	16.5 C	2008 10 21.72	16.2 C	NEV / 2

Comet C/2008 T2 (Cardinal)

First Date UT	Mag.	Last Date UT	Mag.	Obs. / No.
2008 10 22.93	17.1 V			QVA
2008 10 09.76	16.2 C	2008 10 20.71	16.0 C	SHU / 2

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DESIGNATIONS OF RECENT COMETS

Listed below, for handy reference, are the last 12 comets (non-spacecraft) to have been given designations (though comet 210P was rediscovered on Secchi spacecraft images). A comet's name is preceded by a star (*) if the comet was a new discovery (compared to a recovery from predictions of a previously-known short-period comet) or a # if a re-discovery of a 'lost' comet. Also tabulated below are such values as the orbital period (in years) for periodic comets, date of perihelion, T (month/date/year), and the perihelion distance (q , in AU). Four-digit numbers in the last column indicate the *IAU Circular* (4-digit number) containing the discovery/recovery or permanent-number announcement. [Update of list in the July 2008 issue, p. 134].

	<i>New-Style Designation</i>	P	T	q	<i>IAUC</i>
#	206P/2008 T3 (Barnard-Boattini)	5.83	10/25/08	1.15	8995
*	P/2008 T4 (Hill)	9.38	12/23/08	2.51	8994
	207P/2008 T5 (NEAT)	7.66	11/6/08	0.94	8996
*	208P/2008 U1 (McMillan)	8.11	5/13/08	2.52	8997
*	211P/2008 X1 (Hill)	6.73	5/7/09	2.36	9001
	209P/2008 X2 (LINEAR)	5.04	4/15/09	0.91	9002
*	C/2008 X3 (LINEAR)		10/10/08	1.90	9003
#	210P/2008 X4 (Christensen)	5.66	12/19/08	0.53	9005
*	P/2008 Y1 (Boattini)	10.5	2/25/09	1.27	9007
*	P/2008 Y2 (Gibbs)	6.80	1/22/09	1.64	9008
*	P/2008 Y3 (McNaught)	22.7	1/11/09	4.43	9009
*	212P/2000 YN ₃₀ (NEAT)	7.79	12/3/08	1.65	9010