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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 (even-numbered years); the *ICQ* is also indexed in *Science Abstracts Section A* (and in the now-defunct *Astronomy and Astrophysics Abstracts*).

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Cometary observations should be sent to the Editor in Cambridge; all data intended for publication in the *ICQ* that is not sent via computer electronic mail should be sent on standard *ICQ* observation report forms, which can be obtained upon request from the Editor. Those who can send observational data (or manuscripts) in machine-readable form are encouraged to do so [especially through e-mail to ICQ@CFA.HARVARD.EDU], and should contact the Editor for further information. 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://cfa-www.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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CORRIGENDA

- In the January 2002 issue, page 5, 'Tabulation of Comet Observations', explanation for *Column 106*, for bias-subtracted) 5 = read bias-subtracted); 5 =
- In the July 2002 issue, page 95, fourth paragraph, first line, for found to be the best read found the best

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NOTE: Readers will have noticed that a paging problem occurred with the October 2003 issue, in which page 161 was accidentally printed twice (one with the figures, once without), leading to the addition of a blank page (generally following page 192). But there should not have been any missing pages.

Special ICQ Observing Project

In the April 2003 issue (*ICQ* 25, 57), we announced a special observing project for the period June 2003-February 2004 to intensely observe about a dozen comets, to get as much data as possible on these comets so as to make some scientific assessment of the total brightness of comets as obtained via CCD and visually. We hereby extend the project, but in a slightly different manner: by asking all comet photometrists (visual and CCD) to make a sincere effort to observe the special deep-sky objects, as requested a decade ago in these pages (see *ICQ* 16, 129).

These deep-sky objects were specially chosen as having morphologies that are somewhat similar to those of comets: NGC 221 = M32; NGC 936; NGC 1068 = M77; NGC 1952 = M1; NGC 2068; NGC 3031; NGC 3344; NGC 3485; NGC 3623 = M65; NGC 3627; NGC 3640; NGC 4147; NGC 4374 = M84; NGC 4406 = M86; NGC 4486 = M87; NGC 4594 = M104; NGC 4649 = M60; NGC 5024; NGC 5236 = M83; NGC 5272 = M3; UGC 5373; NGC 6356; NGC 6384; NGC 6426; NGC 6712; NGC 6760; NGC 6781; NGC 6934; and NGC 7078 = M15. Observers are asked to observe as many of these deep-sky objects during the year 2004 as possible, reporting full data in the *ICQ* format for comets (i.e., date, time, total brightness, diameter of object, DC in the case of visual observers) — placing the galaxy identification in the usual columns for comets (preceded by 'NGC' or 'UGC'), beginning in column 1. Please stick to these 29 objects, and do not report data on other deep-sky objects. As before, observers are requested to observe all deep-sky objects as high up in the sky as possible. However it might *also* be useful to check the extinction tables to *also* observe them at low altitude (say, below 15° altitude in the sky) and report the magnitudes observed following corrections using the *ICQ* extinction tables; as one "knows" the true total magnitude from observing the objects high in the sky, it will be interesting to see how "true" the magnitude tables are by observing such extended deep-sky objects at high atmospheric extinction.

Only one set of physical observations of deep-sky objects was published thus far (*ICQ* 20, 98) because not many new observations were contributed (there are some decades-old observations by a few observers that are on hand for eventual publication). The new results for the deep-sky objects also will be published in the *ICQ*, with the hope being twofold: (1) some correlations and problems between different observers and different instrumentations may be determined and resolved between the deep-sky data and the comet data; and (2) at some point, a 'master' list of brightness data on these deep-sky objects can be released to aid beginning comet observers in learning proper methodology for brightness determination. — *D. W. E. Green*

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THE COMET OF 1577 AND A TURKISH-OTTOMAN ASTRONOMER

by *Haldun İ. Menali** and *Ahmed Süheyl Ünver†*

Introduction

The comet of 1577 was observed not only by western-european astronomers (most notably Tycho Brahe at his Uraniborg observatory on the island of Hven) but also in the Orient. In the Ottoman Empire, the founder of Istanbul Observatory¹, Takiyüddin Mehmed bin Maruf Efendi (known in the Occident as Taqi al-Din Muhammad ibn Ma'ruf al-Shami al-Asadi), also observed this great comet.

Born in Damascus in 1521, Takiyüddin made his studies first in his native city, then in Cairo, Egypt (at that time, Damascus and Egypt were part of the Ottoman Empire). Following his studies, he went to Istanbul (the capital city of the Empire — formerly Constantinople), together with his father, Mehmed bin Maruf Efendi, who was one of the most notable scientists in Egypt and a university (medrese) instructor. After attending several classes and meetings held by the most prominent scientists of his time, Takiyüddin returned to Egypt, where he published some of his works and books on optics, trigonometry, and mechanical clocks. Finally in 1570, during the reign of Sultan Selim the Second, Takiyüddin returned to Istanbul, where he made his home for the rest of his life. His main research life started after that date.

*This paper was kindly prepared by Menali following a request by the *ICQ* Editor to translate sections Süheyl Ünver's book regarding the comet of 1577. The introduction is an adaptation from *76 Yıllık Konuğumuz: Halley Kuyrukluyıldızı* (or, *Our Guest for Every 76 Years: Halley's Comet*), by İ. Ethem Derman and Haldun İ. Menali, published in 1985 in Ankara (pp. 31-32). Some of the footnotes are explanatory material by Menali or the *ICQ* Editor. Menali is an amateur astronomer who moved from Turkey to Boston, where he now resides.

†Prof. Ünver died on 1986 Feb. 14.

¹not to be confused with current-day Istanbul University Observatory or Bogazici University's Kandilli Observatory

Takiyüddin was appointed as the official “Head Astrologer”² of the Empire in 1571. Although he started his first astronomical observations from the Galata Tower (the fire watch-tower in the Pera quarter of Istanbul) in 1574, he soon decided that it was not a convenient location at which to install new and larger instruments. During the reign of Sultan Murad the Third, Takiyüddin was assigned to establish the Istanbul Observatory, which was named “Darur Rasadul Cedid” (the New Scientific Observatory). According to some sources, this observatory was constructed near a spot where the present residence building of the French consul general (Palais de France) is located in Beyoğlu (Pera). The observatory remained operational, and many useful astronomical observations were carried on for about four years until 1580, when its buildings were torn down by the imperial marine forces on 4 Zilhicce 987 in the Islamic calendar (or AD 1580 Jan. 20-21 in the Julian calendar), and the facility was completely shut down in 1583. Takiyüddin died two years later.

According to some non-official records, the religious leaders of the time — most probably driven by the fear of being vanquished by the advance of scientific research — spread rumors about the observatory and its real interests. Some rumors went to even say that “astronomers working in the observatory were only interested in looking at the naked legs of angels with their so-called instruments”. Of course, the Sultan (who was told that attempts to pry into the secrets of nature would only bring misfortune) had to believe in those rumors and persuasive arguments, and he ordered the imperial fleet to tear it down “from its apogee to its perigee” by cannon fire from the Marmara Sea.

While working on the preparation of several star tables and observing meteorological events, the first truly scientific research of the observatory, whose main building was erected during 1577, was the observation of the bright comet that appeared that same year. According to observations made at the observatory, the comet was first seen over the western horizon and remained visible (with the naked eye) for about 40 nights. Having a tail stretching towards the east, the comet itself moved toward that direction, as well.

A book published by the late Prof. A. Süheyl Ünver entitled *İstanbul Rasathanesi* was published in Ankara in 1969.³ Several pages were translated for the *ICQ* from the book’s sections regarding the Istanbul Observatory (pages 54 and 74-80). Ünver’s text describes manuscripts on the comet of 1577, which include two paintings of the comet made by Turkish artists at the time of its appearance.

One of these manuscripts is a “Shaikname” of Sultan Murad the Third, which was written by the Ottoman historian Lokman in Farsi (Persian), according to the customs of the time,⁴ and named *Şemailname* — also called *Şehinsahname* (or, *Book of the Sultan of Sultans*). A copy of *Şemailname*, including illustrations, is recorded in Istanbul University Library (shelfmark #F1404); it was written in the Islamic year 998 (AD 1581). This is the most spectacular work of that period, with more than 150 paintings that represent the epitome of the artistic production of that era. *Şemailname* consists of two volumes and narrates the reign of Sultan Murad the Third; the first volume, finished in 1581, includes the depiction of the Istanbul Observatory of Takiyüddin. The other manuscript discussed by Ünver is the *Secaatname*, written to the honor of Osman Pasha.

What follows, then, is an English translation of parts of the text from Ünver’s book that may be of use to researchers of the comet of 1577.⁵

The comet of 985 (AD 1577)

It is well known that the comet was seen from Istanbul Observatory in the skies early in [the month of] Ramadan of [the Islamic year] 985 (AD 1577). However, we don’t have detailed information about these observations. The author [Ünver] found several resources containing some data for, and two paintings of, this comet — although the paintings are schematized representations.⁶

In the handwritten manuscript *Secaatname*,⁷ which is a book about Osman Pasha’s “Battles in the Orient”, written in narrative Turkish in the Islamic year 994 (AD 1586), there is a description of the 1577 comet, stating that “the comet rose in one night and marched (moved) toward the east”. *Secaatname* also includes one of the two paintings of the comet, described in detail below.

In the handwritten manuscript *Şemailname*, the 1577 comet is called “Seb’ayi Nahisat” and is a bright and fast-moving celestial object. It appeared suddenly on the first (Regaib) day of Ramadan, remained visible in the sky for 40 days, and its rays spread from the horizon to the zenith, with its tail pointing to the east. The comet appeared in the constellation “Kavis” (Sagittarius). Takiyüddin worked during several days and nights without rest and sleep in order to “explain why the comet appeared and its impact”, and he informed the Sultan about his technical or scholarly findings on that matter.

²Note that astrology and astronomy were largely combined, and generally considered as belonging together, at this time in history.

³by Türk Tarih Kurumu Basimevi, in *Türk Tarih Kurumu Yayınlarından VII. Seri* — Sa. 54. For this translation, a copy of this book was accessed at Harvard’s Widener Library.

⁴“Shaikname” is the generic name of that particular kind of manuscript that praised the ruling sultans.

⁵Some editing of the text has been made by the *ICQ* Editor, both to improve the English translation and to connect points more logically. Some sentences containing widely known information about general European history of the comet have been removed, as has repetitive material.

⁶*Osmanlı Türklerinde İlim (Science in Ottoman Turks)*, by Adnan Adıvar (Istanbul, 1943), pages 82-87. Adıvar noted that the Istanbul Observatory was constructed the same year in which the comet of 1577 was observed.

⁷A copy including illustrations is recorded in Istanbul University Library (shelfmark #T6043). The name “Secaatname” means “book of heroism”, and it is about the battles fought against Persians by Özdemiroğlu Osman Pasha, one of the grand viziers (member of the government) of Sultan Selim the Second and Sultan Murad the Third.

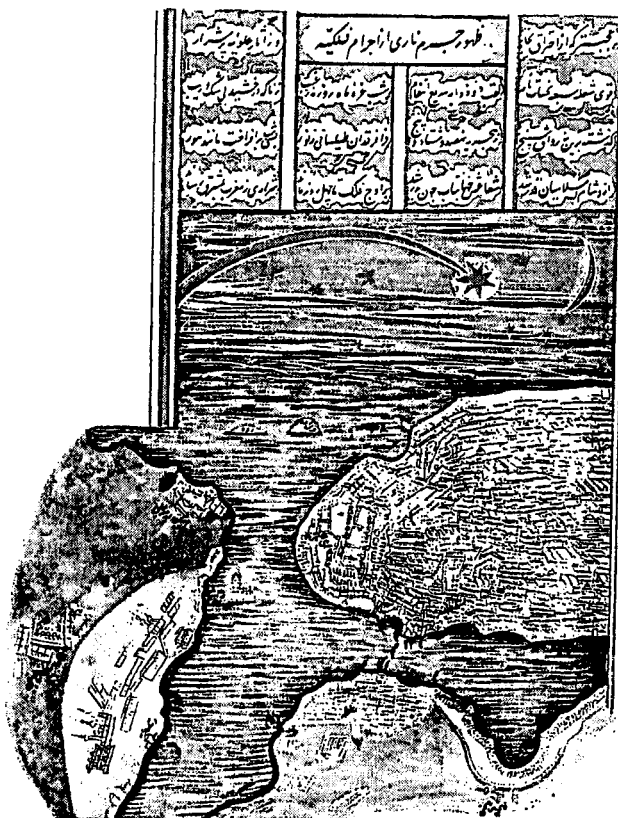


Figure 1. Painting of the comet of 1577 from the *Şemalname*, an Ottoman manuscript (reproduced here in black-and-white).

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Takiyüddin, together with the Shaikh al-Islam Aziz Efendi (the highest-ranking religious leader in the Ottoman Empire), presented a scholarly paper to Sultan Murad the Third, about the comet that was first seen from Istanbul on 1 Ramadan 985 (1577 November 12 on the Julian calendar).⁸ Unfortunately, the original version of this manuscript text has been since lost. If this paper is ever discovered someday, it might help to unveil some facts about this comet. It is assumed that there were different copies of the paper: a longer one and the “Arzuhal” (some kind of short manuscript) that Takiyüddin presented to the Sultan. Takiyüddin also forecasted that it was a good omen for a war that had just broken out in the eastern part of the Empire; and the Ottoman troops will vanquish the enemy army in this battle (the war of 1578-1590 between Ottomans and Persians; indeed, Ottomans won the initial battles of this war!).

Also, there exists a narrative historical description by Saî Çelebi.⁹ Basically it says that the comet is a good omen for the Ottoman Sultan, and the imperial army will vanquish the Persian king. There are also mentions about this comet on page 149 of *Selânikî Tarih-i*, which was a book written by Selaniki Mustafa Efendi about events that took place between 1563 and 1600.¹⁰ Finally, Mr. Mehmed Fatin Gökmen¹¹ wrote about this comet in three articles that he published regarding Takiyüddin in the daily Istanbul newspaper *Cumhuriyet* in April 1925. Gökmen argued that the link between the destruction of the Observatory and this comet is not confirmed, contrary to some historians who believed that the appearance of this comet, and then a plague outbreak in the capital city (Istanbul), scared the Sultan — who ordered the destruction of the Observatory. Although Takiyüddin was in Istanbul and presented a special paper on the comet to the Sultan, the construction of the Observatory was not even completed at that time. [Ünver] also favors this argument and accepts that the Observatory was already functioning regularly and the comet was one of the most important researches done during its apparition.

⁸Ramadan is the ninth month in the Islamic lunar calendar. Ünver erroneously gave the converted Julian-calendar day as September 11 (“Eylül” in Turkish).

⁹a manuscript in Suleymaniye General Library, Esad Efendi Collection #3436.

¹⁰Mustafa Efendi of Thessaloniki was an Ottoman historian of the late-16th century who was born in Thessalonica (the Greek city Salonika) and died in Istanbul in 1600. He witnessed the arrival of the first English ambassador to Istanbul and wrote about him. *Selânikî Tarih-i* was published in Istanbul by Matba'a-i Amire in the Islamic year 1281 (AD 1864), and was reprinted in 1971 and 1989. Evidently the comet was also mentioned by historian J. P. Hammer in the 4-volume *Osmanlı Devleti Tarihi (History of the Ottoman Empire)*, which was published in Istanbul in 1983.

¹¹founder of the Kandilli Observatory in Istanbul in 1911, now an astrophysical and earthquake research institute of Bogazici University.

The Description of the Comet of 1577 in the "Shaikname" of Sultan Murad the Third¹²

Following is the text from the *Şemalname* manuscript that pertains to the comet:

[The God] ... accentuates the majesty of the night by the planets and the majesty of the day by the sun. He shows his unlimited powers by seven planets and their numerous fixed stars.

[58, a] He [the God] openly shows many powerful wonders through each one of these stars.

They [the stars] are more wonderful than burning seas or skies full of sparks.

Among the objects in the sky, one called "Seb'ayi Nahisat", a very bright and fast "Zûzeneb"¹³ appeared suddenly on the first (Regaib) day of the month (Ramadan).

When this happened, 985 years had passed since the Hicr¹⁴

For several nights, it shone like the sun spreading light over the [Prince's] Islands. Thanks to this star [comet], Moslems' night became a holy night¹⁵. Its bright rays lighted up the globe. It stayed up [in the sky] for forty nights. Its rays were spread from the horizon to the zenith.

[58, b] As it appeared in the constellation of Kavis [Sagittarius], its arrow suddenly hit the enemies of the [Islam] religion. Its head and tail were in the constellation of Delv.¹⁶ It disappeared [from naked-eye visibility] in that same constellation. As its head and tail were toward the East, it cast its curse to the enemy¹⁷ like a scorpion.¹⁸

The smart, knowledgeable, master of his time, the important scientist¹⁹ worked for several days and nights without rest, sleep, and food in order to "explain why the comet appeared and its impact".

As he worked with the help of God, he quickly prepared this paper to the Sultan of the sultans. He said: "You, the great Sultan who is the proud ruler of the lands, let your ruling be bright. I foresee that you will conquer Iran [Persia]. Because the enemy is lying breathless on the ground. Such a celestial fire's existence means good luck and success to you. However, it will send rays of misfortune and disaster over Iran. This is evident as it is reflected in the skies.

As Takiyüddin commented that the comet's apparition would bring good fortune to the Empire, he received the Sultan's gratitude, praise, and support.

Description of Two Paintings of the Comet of 1577

We have found only two paintings made at the time of the comet's appearance. As these paintings do not look alike, we assume that each artist drew a bright star with a tail and put it on the starry background of the sky, based on their creative imagination, without being aware of each other's work.

As noted earlier, the first painting is situated within the *Şemalname* manuscript²⁰, in which the comet appears over Istanbul skies. [This is shown here in black-and-white as Figure 1.] The original painting's dimensions are 21 × 21 cm. Istanbul, Galata, and Beyoglu [Pera] quarters are drawn as from a bird's-eye view in a schematic representation at the bottom of the painting. The comet is drawn to the left of a crescent Moon on the right of the picture. Its tail stems from a star (head of the comet) and extends toward the left, curved like a bow and gradually widening to cover the sky among the surrounding small and large stars. The artist drew the comet and its tail in a golden color on a blue sky and bordered it with a white line. The head of the comet is a star with eight points. The tail emerges from between two of these points. The sky is blue and covered with thin, scattered clouds. Among the other stars, there are some with four, five, and even six points (apparently) to represent stars with different brightnesses. On the horizon, the Katirci Mountains — extending from Bozburun (the "Grizzly Point") toward the Yalova province (southern Marmara Sea) behind the Prince's Islands — are drawn in a dark color. The part of the sky described above has a dimension of 6.5 × 16 centimeters in the painting. On the 56th and 57th plates in *Şemalname*, Takiyüddin is pictured with his associates in front of important astronomical instruments.

The second comet-of-1577 Ottoman painting, which appears in the *Şecaatname* manuscript²¹, has dimensions of 9.5 × 12.5 cm and has a somewhat different style from the first painting. [This is included here as Figure 2.] The crescent Moon is at top right corner. The comet's head is drawn as a star with eight tips. The tail stems from one tip and

¹² "Der zuhuru cirimi nari ez ecrami felekiyye". Istanbul University Library #F1404. Ünver writes in his foreword that he asked other experts to translate the original Arabic into Turkish.

¹³ "the Comet", similar to the phrase for "the Great Comet of 1577"

¹⁴ Flight date [622 AD] for the Moslem prophet from his native city of Mecca in the Arabian peninsula, where his religion was first rejected, and the starting point of the lunar Islamic calendar.

¹⁵ actually, the first night of Ramadan is always considered a holy time.

¹⁶ The names "Kavis" and "Delv" are Ottoman-Arabic constellation names. The name "Delv" probably refers either to Aquarius (ad-Dalw) or more probably Delphinus (ad-Dulfin), as the comet was never actually in Aquarius but it did eventually fade for some observers after it had moved into Delphinus and for others in Equuleus.

¹⁷ Persian Empire in the East

¹⁸ Note that the allusions were made according to the constellation the comet was in. Menali thinks that what Ünver (and Takiyüddin) meant to say about the allusion to Scorpius was the following: the comet's tail was like an arrow indicating the eastern horizon where the enemy (Persians) was (when the comet first appeared in Sagittarius, the Archer); since Scorpius was setting in the west, Takiyüddin must have intended that (as an astrologer) "the comet cast its curse to the enemy like a scorpion" from the Scorpion sinking in the west to the east (through the arrow).

¹⁹ Takiyüddin describes himself

²⁰ Istanbul University Library #T1404, plate 58.

²¹ Istanbul University Library #T6043, plate 12, year 994 (AD 1586).



Figure 2. Painting of the comet of 1577 from the *Şecaatname*, an Ottoman manuscript (reproduced here in black-and-white).

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[text continued from page 6] extends to the top center of the painting. The tail starts as a thin feature and becomes wider before splitting into four different tails curving to the left and becoming horizontal in the picture. The tail is colored golden and filled in with red and golden patterns to show some kind of details in the tail. Background stars are also drawn in golden colors and brightened using some painting tools. The sky is dark blue, and there are (apparently) some thin clouds. (Surprisingly some of the stars have some kind of short tails as well, for some unknown reason).

These two paintings were never published before the printing of Ünver's book, though they were earlier presented by Ünver at the Sixth International History of Science congress in Amsterdam in 1950.²²

The comet of 1577 was not the only comet seen in the Ottoman Empire. Several more paintings of comets seen in the past were put into manuscripts and books on different occasions. Observers who were monitoring every kind of meteorological phenomena also paid attention to these "hairy stars" and recorded their apparitions. It should be noted that numerous mistakes have been found in the book by Ünver, so it might be prudent for other scholars to access the original materials in the Turkish libraries for reassessment.

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The Tale of Two Comets

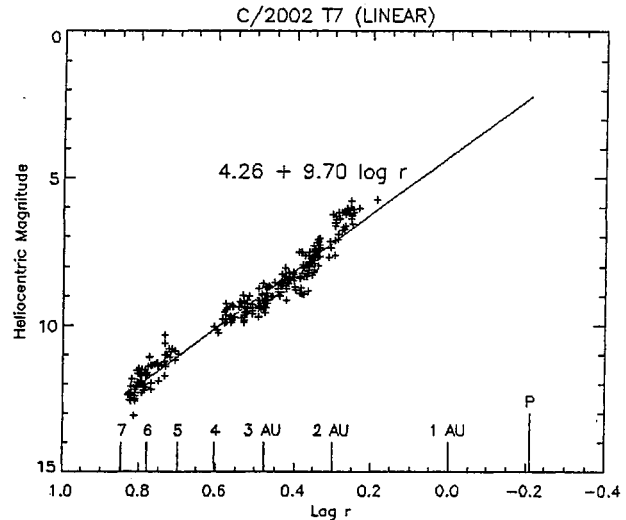
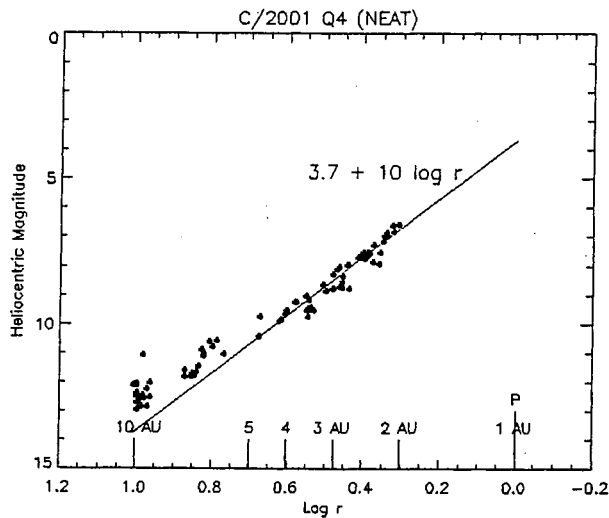
The apparitions of comets C/2001 Q4 (NEAT) and C/2002 T7 (LINEAR) are producing a lot of "second guessing", with astronomers wondering how bright will these comets might become. Figures 1 and 2 show the light curves of these comets from discovery until the beginning of February 2004. These light curves were constructed using observations by selected CCD and visual observers from the *ICQ* archive.

A total of 28 CCD observations by six observers and 33 visual observations by five observers were selected for C/2001 Q4, while a total of 116 CCD observations by six observers and 326 visual observations by thirty observers were selected for C/2002 T7. The CCD observations were corrected to the visual observations using a correction of -0.8 magnitude for C/2001 Q4 and -0.5 magnitude for C/2002 T7.

Comet C/2001 Q4 has not been observed as thoroughly as C/2002 T7, due to its presence in far-southern skies in recent months, but it seems to have had an uneventful rise in brightness. Initially, the power-law¹ exponent n was ~ 3 for this comet, but at $r \leq 4$ AU, n has increased to ≈ 4 . If the comet were to hold to this rate of brightening, it would reach total mag ≈ 1 in early May. However, the comet's brightening had slowed during Feb. 2004, so that it was only about 0.5-0.7 mag brighter than the inverse-third-power prediction.

²²The second painting mentioned above (in *Şecaatname*) was also published in *Comet* by Carl Sagan and Ann Druyan (1985, New York: Random House); a part of this second painting is printed (in color) in the front and back inside covers of this book with a title that reads: "A Turkish representation of the Great Comet of 1577". No sources are cited.

¹ The standard power-law formula for the brightness of comets is magnitude = $H + 5 \log \Delta + 2.5n \log r$, where H is the so-called heliocentric magnitude, and Δ and r are the comet's geocentric and heliocentric distances in AU.



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In contrast to the light curve of C/2001 Q4, the increase in brightness of C/2002 T7 has seemed to come in surges and slow-downs. Starting in mid-December 2003 (just outside of $r = 2$ AU), the comet began brightening at a remarkable rate. The current (mid-February 2004) data suggests a slowing down of the rate of increase, which perhaps is not unexpected. Still, there are those that worry that comet C/2002 T7 will 'fizzle' in brightness prior to perihelion, which is a real possibility with any dynamically 'new' Oort Cloud comet. If the comet follows the average formula parameters suggested by the light curve, C/2002 T7 would peak at total visual magnitude ≈ 0.5 in mid-May. But again, by the third week in Feb. 2004, the brightness of C/2002 T7 was only ≈ 1 mag brighter than the prediction via $n = 3$ (see the *ICQ's 2004 Comet Handbook* for the inverse-third-power predictions for both these comets).

If the rate of brightening slows dramatically for either of these two comets, their maximum brightness could be significantly fainter than the values given. Both C/2001 Q4 (with $1/a_{\text{orig}} = +0.000037 \text{ AU}^{-1}$; cf. *MPEC 2003-R40*) and C/2002 T7 (with $1/a_{\text{orig}} = +0.000050 \text{ AU}^{-1}$; cf. *MPEC 2003-R42*) appear to be dynamically 'new' comets from the solar system's outer 'Oort cloud' of comets. (Observational circumstances for these two comets are given in an article by Charles S. Morris to appear in the May 2004 issue of *Astronomy* magazine.) — C. S. Morris and D. W. E. Green

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Tabulation of Comet Observations

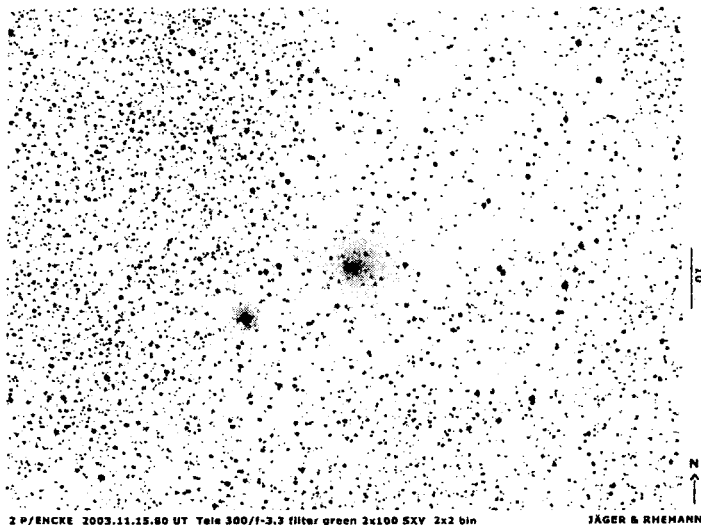
New reference code for comparison-star magnitudes: HN = Arne Henden's photometric sequences, which can be downloaded from his computer at <ftp://ftp.nofs.navy.b/outgoing/aah/sequence> (and especially via R. Bouma at <http://www.shopplaza.nl/astro/vs-charts/> and via M. Simonsen at <http://home.earthlink.net/~joevp/index.html>) — but specific sequences should be specified in descriptive data.

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

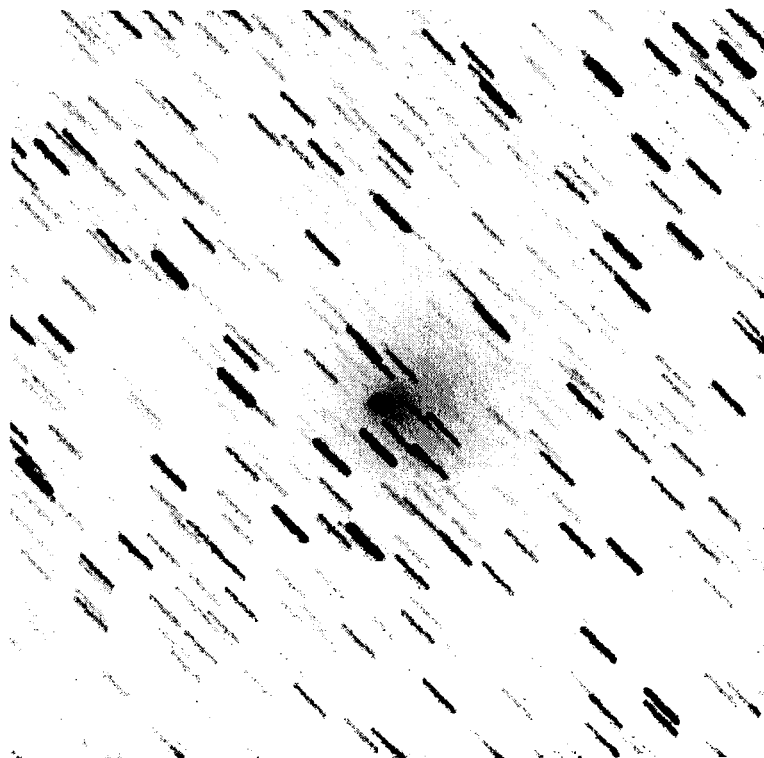
See the July 2001 issue (page 98) for explanations of the abbreviations used in the descriptive information.

◇ Comet 2P/Encke \Rightarrow 2003 Sept. 26.13: small, very faint object; motion detected over 45-min period; a check with Digitized Sky Survey showed nothing brighter than mag 16-17 near obs. track [BOU]. Oct. 15.75: motion confirmed [GUZ]. Oct. 16.77: faint, slightly condensed object; some interference from nearby star of mag 11.8 (ref: TK); comp. stars selected from Henden photometry of FN And [BOU]. Oct. 18.80: some interference from mag-6.6 star, $< 7'$ away [BOU]. Oct. 21.86: faint coma, but larger and more obvious than 3 days ago [BOU]. Oct. 26.48: $B-V$ value of comp. star was +0.42 [KON03]. Oct. 26.48 and Dec. 31.87: StellaNavigator ver. 6.1 software used for comp.-star mags [KON03]. Oct. 26.98: comet large and very diffuse; not unambiguously seen w/ 15×80 B in rather crowded field, despite good sky conditions and alt. 71° [BOU]. Oct. 28.89: comet large and diffuse; some interference from 26 And (mag 6.1), only $7'$ away [BOU]. Oct. 29.51: $B-V$ value of comp. star was +0.56 [TSU02]. Oct. 29.51, 30.54, Nov. 17.43, 23.43, and Dec. 4.36: Guide 8.0 software used for comp.-star mags [TSU02]. Oct. 29.84: bright aurora covered most of the N half of the sky at times; obs. made when activity was relatively low for a while [BOU]. Oct. 30.54: $B-V$ value of comp. star was +0.43 [TSU02].

Nov. 4.93 and 5.85: moonlight; all SRB obs. comm. by Kamil Hornoch [SRB]. Nov. 5.78 and 6.75: bright moonlight, but very clear sky and comet almost at zenith [BUS01]. Nov. 9.05: comet appeared as a large and diffuse glow with a

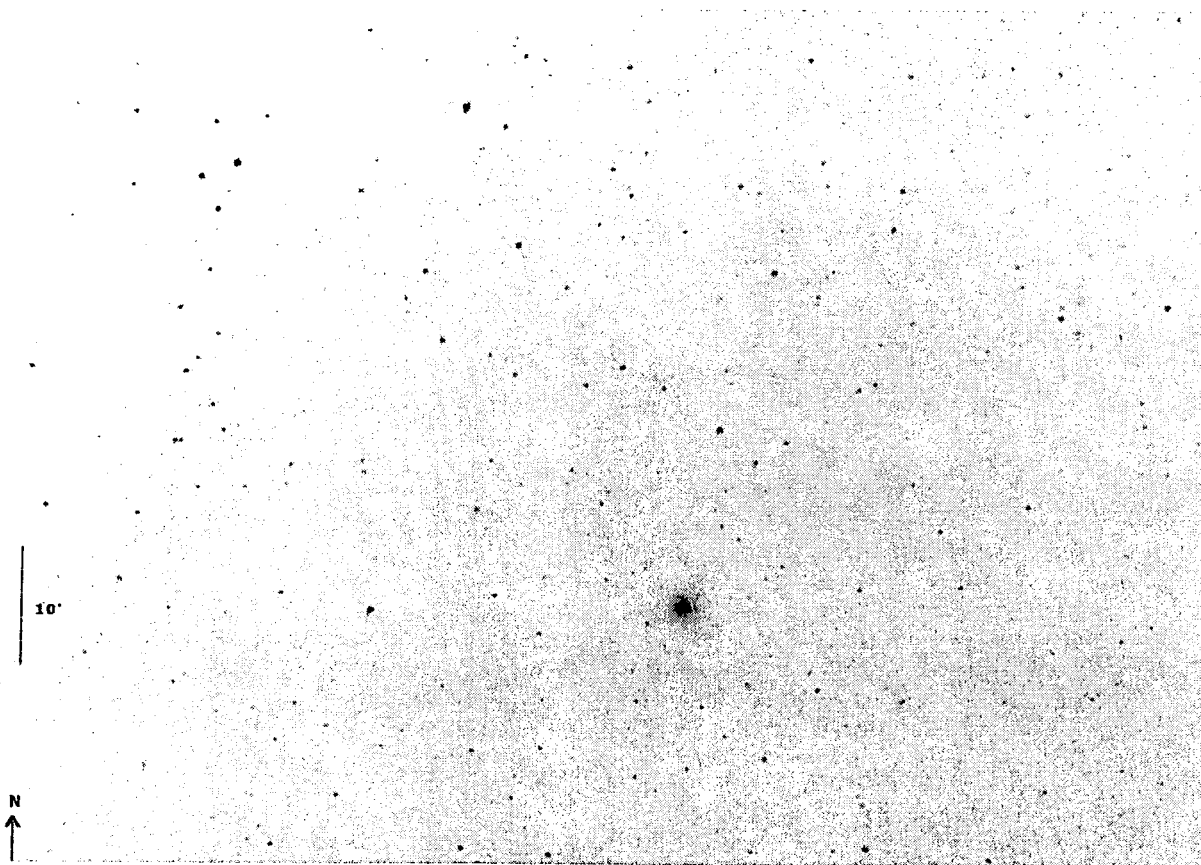


Two CCD images of comet 2P/Encke from November 2003. Above: comet at center, with coma diameter exceeding 10' on original image (see the 10' scale bar at right); image taken on Nov. 15.80 UT by M. Jäger and G. Rhemann (near Vienna, Austria) with a 300-mm f/3.3 telephoto lens and a green filter (north is up). The bright star to the lower left of the comet is 49 Cyg. Below: The comet's nuclear condensation is near the center of this image taken by M. P. Moberley (Cockfield, U.K.) around Nov. 26.745 (compilation of fourteen 20-sec images) with a 14-cm f/7.7 Celestron reflector and a ST-9XE camera. The field spans 13' × 13', with north also upward. Note the soft asymmetric coma toward the upper right.



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[text continued from page 8] low surface brightness (much inferior to that of M33 and NGC 205) [GRA04]. Nov. 9.06: observations made during and just after the end of totality (total lunar eclipse); w/ 25-cm f/4 L (38×), coma dia. \approx 6'.6, DC \sim 2-3 (too large for mag estimate); comet very easy in the binoculars, but first identified (very quickly) in the



Another CCD image of comet 2P/Encke from 2003 Dec. 7.69 taken by M. Jäger and G. Rhemann with a 300-mm $f/3.3$ telephoto lens and a green filter (north is up); five 1-min exposures combined. The comet is the brightest object in the field (below center); note the 10' scale bar at lower left (north is up).

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[text continued from bottom of page 9] 25-cm L [GRE]. Nov. 10.7, 30.70, and Dec. 1.69: moonlight [GUZ]. Nov. 11.42: very low surface brightness, but enhanced through Swan-Band filter; very diffuse and difficult to see, despite the relatively bright total mag; earlier attempts were fruitless [SEA]. Nov. 13.43, 17.40, 17.45, 19.38, 22.40, 23.39, and Dec. 3.37: Guide 6.0 software used for comp.-star mags [NAG08]. Nov. 13.47: nuclear cond. located at the E end of a very diffuse coma [EZA]. Nov. 13.47 and 25.42: Guide 8.0 software used for comp.-star mags [YOS02]. Nov. 13.48 and Dec. 2.38: The Sky ver. 5 software used for comp.-star mags [MIT]. Nov. 15.11: Milky Way background problematic with one set of comp. stars; comet looked slightly brighter tonight than on Nov. 17.11 [MOR]. Nov. 15.75: comet very large and diffuse with indefinite border; obs. just before incoming cloud [COM]. Nov. 15.77: very large and very diffuse coma, slightly condensed towards center; center offset towards SE [KAM01]. Nov. 16.06: very easy in 12×50 B; also observed in 25-cm $f/4$ L (38×), 25×100 B, and 20×80 B (but comet too large for mag estimates in those larger instruments) [GRE]. Nov. 17.92: comet was faint, but definitely seen despite its location near 21 Vul (it was harder to detect with 15× due to a brighter sky background, and not seen in 7×50 B); alt. 23° [GRA04]. Nov. 20.73: wide sunward fan visible w/o any trouble in p.a. $\approx 240^\circ$ [GUZ]. Nov. 20.77: very large and diffuse coma; obs. during bright display of northern lights [KAM01]. Nov. 21.74: large diffuse coma, slightly condensed towards center, which was offset towards SE [KAM01]. Nov. 22.43: StellaNavigator ver. x software used for comp.-star mags [MOM]. Nov. 22.78: comet in the middle of star cluster Cr 399 (Brocchi's Cluster or 'Coathanger') [BUS01]. Nov. 23.12: diffuse coma w/ large, slightly brighter center; wide, fan-shaped tail, only slightly extending from coma and w/ an opening angle of about 180°; obs. from 60 km SE of Tucson, AZ [WAR01]. Nov. 24.70: very wide sunward fan visible in p.a. $\approx 230^\circ$ but not as obvious as four days ago [GUZ]. Nov. 26.72: large, slightly condensed coma in binoculars; w/ 20-cm T (50×), smooth surface brightness gradient; central part of coma offset towards SE; at 161×, no false nucleus brighter than mag 13.5 was visible [KAM01]. Nov. 27.70: sunward fan visible in both telescope and binoculars in p.a. 230° [GUZ]. Nov. 27.78: difficult estimation because of stars in coma [BUS01]. Nov. 28.11: diffuse and round, w/ brighter center; crescent moon located 45° to the E; bright sky from suburban location at Tucson, AZ [WAR01]. Nov. 28.71: some cirrus clouds and moonlight [GUZ]. Dec. 4.36: $B-V$ value of comp. star was +0.45 [TSU02]. Dec. 7.67: strong moonlight; low alt.; comet barely visible [GUZ]. Dec. 7.67: comet $\approx 10^\circ$ above W horizon in twilight [LEH]. Dec. 7.71: comet at only 7° alt.; strong moonlight [BOU]. Dec. 8.71: definitely seen, but difficult object at only 4.5 alt.; strong moonlight [BOU]. Dec. 19.09: comet a lot bigger

and brighter than three nights earlier [MOR]. Dec. 31.87: $B-V$ value of comp. star was +1.23 [KON03]. 2004 Jan. 4.30: alt. 5° [AMO01].

◊ *Comet 7P/Pons-Winnecke* \Rightarrow 2002 May 14.69: StellaNavigator ver. 6.1 software used for comp.-star mags; $B-V$ values of comp. star was +0.48 [KON03].

◊ *Comet 22P/Kopff* \Rightarrow 2002 June 7.50: StellaNavigator ver. 6.1 software used for comp.-star mags; $B-V$ values of comp. star was +0.44 [KON03]. 2003 Nov. 16.58: $B-V$ values of comp. stars were +0.52, +0.67, +0.68, +0.85, and +0.87; fan-shaped coma toward the SE [NAK01].

◊ *Comet 28P/Neujmin* \Rightarrow 2003 Nov. 22.61: $B-V$ values of comp. stars were +0.62, +0.67, and +0.85 [NAK01]. 2004 Jan. 17.57: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01].

◊ *Comet 29P/Schwassmann-Wachmann* \Rightarrow 2003 July 24.95: "outburst!; comet close to star of mag 9.7; motion confirmed" [GUZ]. Aug. 25.98: another outburst [GUZ]. Sept. 14.87 and 15.85: moonlight; comm. by Kamil Hornoch [SRB]. Sept. 28.78: outburst again; some fog [GUZ]. Sept. 29.91: new outburst; faint central cond. of mag 13.5-14, asymmetrically placed in coma w/ offset roughly towards p.a. 15° [BOU]. Oct. 18.83: difficult object, being fairly large and very diffuse; comp. stars taken from nearby Henden sequence of UU Aqr [BOU]. Oct. 30.48, Nov. 23.50, Dec. 21.43, and 2004 Jan. 19.38: Guide 8.0 software used for comp.-star mags [TSU02]. 2003 Oct. 30.48: $B-V$ value of comp. star was +0.70 [TSU02]. Nov. 1.55, 26.44, and Dec. 14.49: Guide 8.0 software used for comp.-star mags [OHS]. Nov. 1.55: $B-V$ value of comp. star was +0.56 [OHS]. Nov. 16.51: $B-V$ values of comp. stars were +0.52, +0.67, +0.68, +0.85, and +0.87 [NAK01]. Nov. 23.45 and Dec. 14.43: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85 [NAK01]. Nov. 23.50 and Dec. 21.43: $B-V$ value of comp. star was +0.47 [TSU02]. Nov. 26.44: $B-V$ value of comp. star was +0.69 [OHS]. Dec. 14.49: $B-V$ value of comp. star was +0.81 [OHS]. 2004 Jan. 19.38: comp. star has $B-V = +0.67$ [TSU02].

◊ *Comet 36P/Whipple* \Rightarrow 2003 Nov. 23.57: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85 [NAK01]. Dec. 28.51: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01].

◊ *Comet 40P/Väisälä* \Rightarrow 2003 Nov. 1.79: Guide 8.0 software used for comp.-star mags; comp. star has $B-V = +0.53$ [OHS].

◊ *Comet 43P/Wolf-Harrington* \Rightarrow 2003 Sept. 14.90, 15.82, Nov. 5.82, and Dec. 2.80: moonlight; all SRB obs. comm. by Kamil Hornoch [SRB]. Sept. 21.93 and Oct. 18.83: limiting stellar mag ≈ 14.5 ; motion detected (compared w/ orbital elements taken from MPC 42666) [GUZ]. Sept. 25.81: comet close to a bright star [SRB]. Sept. 25.97: comet near star of mag 14.5; limiting stellar mag ≈ 14.7 ; motion confirmed during 1-hr period (via orbital elements taken from MPC 42666) [GUZ]. Oct. 17.84: comet close to a star [SRB]. Oct. 28.76 and Nov. 14.79: limiting stellar mag 14.2, motion detected and compared w/ orbital elements taken from MPC 42666 [GUZ]. Oct. 28.93 and Nov. 5.82: elongated coma in p.a. 90° [SRB]. Nov. 12.85: elongated coma in p.a. 100° [SRB]. Nov. 16.52: $B-V$ values of comp. stars were +0.52, +0.67, +0.68, +0.85, and +0.87 [NAK01]. Nov. 23.52, Dec. 22.41, 23.45, and 2004 Jan. 9.47: Guide 8.0 software used for comp.-star mags [TSU02]. 2003 Nov. 23.52: $B-V$ value of comp. star was +0.54 [TSU02]. Nov. 26.48 and Dec. 14.49: Guide 8.0 software used for comp.-star mags [OHS]. Nov. 26.48: $B-V$ value of comp. star was +0.69 [OHS]. Dec. 14.47: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85 [NAK01]. Dec. 14.49: $B-V$ values of comp. stars were +0.54 and +0.78 [OHS]. Dec. 16.50: Guide 8.0 software used for comp.-star mags [YOS02]. Dec. 22.41 and 23.45: $B-V$ value of comp. star was +0.37 [TSU02]. Dec. 23.48: Guide 6.0 software used for comp.-star mags [NAG08]. 2004 Jan. 9.47: comp. star has $B-V = +0.57$ [TSU02]. Jan. 17.45: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01].

◊ *Comet 53P/Van Biesbroeck* \Rightarrow 2003 June 18.00 and July 14.93: moonlight [HOR02]. June 24.90: limiting stellar mag ≈ 14.5 ; motion noticed (compared w/ orbital elements taken from MPC 40671) [GUZ]. June 24.98 and July 14.93: comet close to bright star [HOR02]. July 2.88: limiting stellar mag 14.6; motion confirmed via orbital elements taken from MPC 40671 [GUZ]. July 27.87: low alt.; comm. by Kamil Hornoch [SRB].

◊ *Comet 66P/du Toit* \Rightarrow 2003 Oct. 13.45: Milky-Way interference [MAT08].

◊ *Comet 104P/Kowal* \Rightarrow 2003 Nov. 17.45, 23.44, and Dec. 14.42: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85 [NAK01].

◊ *Comet 117P/Helin-Roman-Alu* \Rightarrow 2003 Dec. 28.66 and 2004 Jan. 3.83: Guide 8.0 software used for comp.-star mags [OHS]. 2003 Dec. 28.66: $B-V$ values of comp. stars were +0.53 and +0.55 [OHS]. 2004 Jan. 3.83: comp. star has $B-V = +0.72$ [OHS].

◊ *Comet 118P/Shoemaker-Levy* \Rightarrow 2003 Nov. 1.77: Guide 8.0 software used for comp.-star mags; comp. star has $B-V = +0.53$ [OHS].

◊ *Comet 121P/Shoemaker-Holt* \Rightarrow 2003 Nov. 17.55 and 23.54: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85 [NAK01].

◊ *Comet 123P/West-Hartley* \Rightarrow 2003 Nov. 1.77, Dec. 28.72, and 2004 Jan. 21.67: Guide 8.0 software used for comp.-star mags [OHS]. 2003 Nov. 1.77: $B-V$ values of comp. stars were +0.56 and +0.88 [OHS]. Dec. 1.82: $B-V$ values

of comp. stars were +0.43, +0.55, +0.59, +0.63, +0.83, and +0.85 [NAK01]. Dec. 28.72: $B-V$ values of comp. stars were +0.53 and +0.55 [OHS]. 2004 Jan. 21.67: $B-V$ values of comp. stars were +0.68 and +0.74 [OHS].

◊ *Comet 127P/Holt-Olmstead* \Rightarrow 2003 Nov. 23.61: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85 [NAK01].

◊ *Comet 129P/Shoemaker-Levy* \Rightarrow 2003 Nov. 23.49: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85 [NAK01].

◊ *Comet 133P (Elst-Pizarro)* \Rightarrow 2003 Nov. 17.66: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85 [NAK01].

◊ *Comet 153P/2002 C1 (Ikeya-Zhang) [all obs. by SCA02]* \Rightarrow 2002 May 1.89: comet easy to naked eye; w/ 7×50 B, $3^{\circ}5'$ tail, with one side of the tail (ion tail) much brighter and the other more diffuse; w/ 20.3-cm T, bright ion tail extends to $\sim 40'$ w/ a sort of jet $\sim 4'$ long. May 5.85: comet just visible to naked eye. May 10.85: faint ion tail; not visible to naked eye. May 15.79: bad sky conditions due to haze. May 16.90: comet almost at zenith, just visible to naked eye; w/ 7×50 B, faint diffuse tail; w/ 20.3-cm $f/10$ T ($70\times$), false nucleus of mag 6.8, dia. $\sim 2'$, DC = 6/, w/ a faint, thin ion tail. May 17.84: tail diffuse and faint. May 21.84: tail visible despite moonlight. May 22.81, 25.81, and June 17.82: intense moonlight. May 25.81: "central cond. again active; coma seems elongated" $20'$ in p.a. 200° . May 31.89: comet just visible to naked eye; w/ 20.3-cm $f/10$ T ($70\times$), false nucleus of mag 7.8, dia. $\sim 2'$, DC = 6 [editor's note: SCA02 writes, for all these obs. (this night and other nights, and for other comets) in which a false-nucleus magnitude is followed by diameter and DC measures, in a way that suggests some ambiguity as to whether the size/DC measures refer to the false nucleus or the coma; the way he writes, it seems that he means that the 'false nucleus' has size $2'$, which would be incredibly large! (normally a 'false nucleus' would be starlike and thus have a size $\ll 1'$); but then the DC evidently refers to the false nucleus, as well, indicating wrong methodology with the measuring and a misunderstanding of the entire concept]; pair of shells in p.a. 270° . June 5.89: tail clearly visible; there seems to be a second tail $\sim 1^\circ$ long in p.a. 190° ; w/ 20.3-cm T, false nucleus of mag ~ 9.0 , (coma?) dia. $\sim 1'$, DC = 2/. June 12.86: short, thin tail. June 14.86: again an easy object in binoculars; w/ 20.3-cm $f/10$ T ($70\times$), anti-tail $\sim 25'$ long in p.a. 320° ; elongated coma extends $\sim 10'$ in p.a. 180° . June 15.84: comet almost at limit of visibility in binoculars due to haze; w/ 20.3-cm $f/10$ T ($70\times$), two tails and a false nucleus of mag ~ 10.0 , DC = 2. June 18.82: not easy to find the comet in intense moonlight. June 26.83: obs. before moonrise in good sky conditions. June 28.84: w/ 20.3-cm $f/10$ T ($70\times$), false nucleus diffuse and of mag ~ 10 , (coma?) dia. $\sim 2'$, DC = 3; comet just visible in binoculars. June 29.85: easy object in binoculars; w/ 20.3-cm $f/10$ T ($70\times$), $30'$ anti-tail clearly visible; coma dia. $10'$; false nucleus distinct, of mag ~ 10 and dia. $2'$, DC = 3. July 1.87: comet just visible in binoculars due to haze. July 6.83: "comet more active this night"; in 20.3-cm T, false nucleus of mag ~ 10.5 and dia. = $2'$, appeared more condensed. July 9.83: comet faint in telescope; not easy to find in binoculars; slight haze. July 12.84: comet almost at limit of visibility; in 20.3-cm T, very diffuse and could not make any measurements. July 13.83: comet just visible visible w/ averted vision. July 14.83: comet at limit of instruments — very diffuse and hard to see even w/ averted vision.

◊ *Comet 155P/Shoemaker* \Rightarrow 2003 Jan. 6.61: StellaNavigator ver. 6.1 software used for comp.-star mags; $B-V$ values of comp. star was +0.67 [KON03].

◊ *Comet 157P/2003 T1 (Tritton)* \Rightarrow 2003 Oct. 8.17: strongly condensed central cond. in fairly faint and small coma; comp. stars used from nearby Henden sequence of GY Cnc [BOU]. Oct. 25.14: limiting stellar mag 14.4; motion detected (compared w/ orbital elements taken from MPC 49769) [GUZ]. Oct. 30.84 and Dec. 3.78: Guide 8.0 software used for comp.-star mags [TSU02]. 2003 Oct. 30.84: $B-V$ value of comp. star was +0.33 [TSU02]. Nov. 1.75 and Dec. 28.74: Guide 8.0 software used for comp.-star mags [OHS]. Nov. 1.75: $B-V$ value of comp. star was +0.53 [OHS]. Dec. 3.78: $B-V$ value of comp. star was +0.86 [TSU02]. Dec. 28.74: $B-V$ values of comp. stars were +0.53 and +0.55 [OHS].

◊ *Comet 158P/2001 RG₁₀₀ (Kowal-LINEAR)* \Rightarrow 2003 Dec. 1.65: $B-V$ values of comp. stars were +0.43, +0.55, +0.59, +0.63, +0.83, and +0.85 [NAK01]. Dec. 23.64 and 2004 Jan. 19.50: Guide 8.0 software used for comp.-star mags [TSU02]. 2003 Dec. 23.64: $B-V$ value of comp. star was +0.52 [TSU02]. Dec. 28.54: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01]. 2004 Jan. 19.50: comp. star has $B-V = +0.52$ [TSU02].

◊ *Comet 159P/2003 UD₁₆ (LONEOS)* \Rightarrow 2003 Dec. 28.47: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01].

◊ *Comet C/1999 F1 (Catalina)* \Rightarrow 2003 Nov. 23.55: Guide 8.0 software used for comp.-star mags; $B-V$ value of comp. star was +0.59 [NAK01].

◊ *Comet C/2000 J1 (Ferris)* \Rightarrow 2000 May 8.31: R -band CCD images taken with the Kitt Peak 84-inch reflector show the comet to be quite sharply condensed w/ a faint $10''$ tail in p.a. 150° ; mag ≈ 19.6 in a $5''$ aperture and 500-sec exposure (see also IAU C 7416) [M. Hicks].

◊ *Comet C/2000 SV₇₄ (LINEAR)* \Rightarrow 2003 July 19.86: comet close to star [HOR02].

◊ *Comet C/2001 B2 (NEAT)* \Rightarrow 2003 Dec. 1.76: $B-V$ values of comp. stars were +0.43, +0.55, +0.59, +0.63, +0.83, and +0.85 [NAK01]. Dec. 28.64: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01].

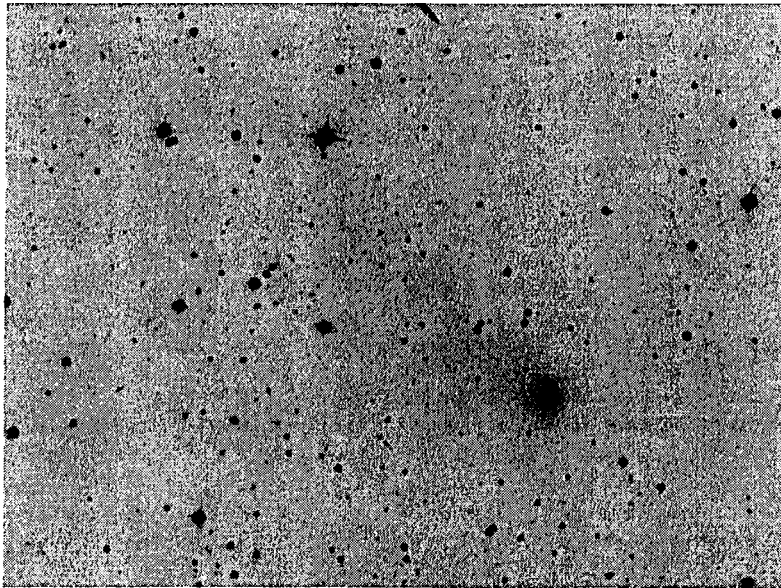
◊ *Comet C/2001 HT₅₀ (LINEAR-NEAT)* \Rightarrow 2003 Sept. 14.97, Nov. 4.88, 5.87, and Dec. 2.84: moonlight; all SRB obs. comm. by Kamil Hornoch [SRB]. Oct. 23.90: comet appears more condensed than 2 days ago; at $109\times$, a nearly

stellar central cond. of mag ≈ 13 clearly visible [BOU]. Oct. 25.13: some interference from star of mag 12.4 (ref: TK) near edge of coma [BOU]. Oct. 26.51: StellaNavigator ver. 6.1 software used for comp.-star mags; comp. star has $B-V = +0.26$ [KON03]. Oct. 29.57, Nov. 23.57, Dec. 15.48, 23.48, and 2004 Jan. 19.39: Guide 8.0 software used for comp.-star mags [TSU02]. Oct. 29.57: $B-V$ value of comp. star was $+0.70$ [TSU02]. Nov. 14.00: wind interference [AMO01]. Nov. 17.54: $B-V$ values of comp. stars were $+0.51$, $+0.55$, $+0.62$, $+0.67$, $+0.70$, and $+0.85$ [NAK01]. Nov. 17.59, 22.55, 23.43, Dec. 13.43, and 23.45: Guide 6.0 software used for comp.-star mags [NAG08]. Nov. 22.70 and Dec. 20.40: Guide 7.0 software used for comp.-star mags [MIY01]. Nov. 23.57: $B-V$ value of comp. star was $+0.59$ [TSU02]. Nov. 25.45 and Dec. 16.48: Guide 8.0 software used for comp.-star mags [YOS02]. Dec. 15.48: $B-V$ value of comp. star was $+0.66$ [TSU02]. Dec. 17.92: difficult object at $50\times$, comet displayed a pronounced central cond. (which was immediately visible at $115\times$) w/in a much fainter coma [KAM01]. Dec. 18.84: at $242\times$, starlike false nucleus of mag 13.5 w/in the central cond. [KAM01]. Dec. 23.48: $B-V$ value of comp. star was $+0.48$ [TSU02]. Dec. 28.44 and 2004 Jan. 17.46: $B-V$ values of comp. stars were $+0.45$, $+0.59$, $+0.62$, $+0.63$, $+0.67$, $+0.83$, and $+0.85$ [NAK01]. Jan. 19.39: $B-V$ of comp. star was $+0.57$ [TSU02].

◇ Comet C/2001 K5 (LINEAR) \implies 2003 June 16.97, 17.97, July 8.92, 10.99, 14.97, and 16.02: moonlight [HOR02]. June 24.97 and July 2.90: limiting stellar mag ≈ 14.5 , orbital elements taken from MPC 44860 [GUZ]. July 27.92: elongated coma in p.a. 190° ; comet close to star [SRB]. Sept. 14.81 and 15.80: moonlight; all SRB obs. comm. by Kamil Hornoch [SRB]. Sept. 15.80: dense star field [SRB]. Sept. 24.84: small, very faint object; somewhat condensed [BOU]. Nov. 14.39 and Dec. 21.39: Guide 8.0 software used for comp.-star mags [TSU02]. Nov. 14.39: $B-V$ value of comp. star was $+0.53$ [TSU02]. Dec. 21.39: $B-V$ value of comp. star was $+0.30$ [TSU02].

◇ Comet C/2001 Q4 (NEAT) \implies 2003 Nov. 3.94: moonlight [SOU01]. Nov. 4.06: moonlight [AMO01]. Nov. 11.43 and 14.43: easy object, picked up easily in casual sweeps [SEA]. Nov. 13.98: wind interference [AMO01]. Nov. 19.22: very close to Tycho-catalogue star of mag $V = 11.3$ [AMO01]. Nov. 26.54: relatively high humidity and drifting clouds [SEA]. Dec. 3.71: conditions less than ideal, w/ high clouds moving across the region [SEA]. Dec. 30.47: comet enhanced using Swan-Band filter; conditions quite poor, with moonlight and some light pollution [SEA]. 2004 Jan. 4.20 and 6.00: moonlight [AMO01]. Jan. 9.45: sky becoming light from rising moon [SEA] Jan. 19.47: drifting clouds; comet close to star [SEA]. Jan. 20.44: hazy sky; the comet's fainter and more-diffuse appearance was likely due to the weather conditions rather than any real change [SEA].

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CCD image of comet C/2001 RX₁₄ by Rhemann and Jäger taken on 2003 May 3.790 with a 14-inch f/3.3 telescope; combination of two 4-min exposures. The comet is the brightest object to the lower right of center. The faint, diffuse tail exits the coma toward the lower left before immediately curving to the upper left - extending past the brightest star in the field near top center in the original image.

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◇ Comet C/2001 RX₁₄ (LINEAR) \implies 2002 Nov. 18.04: intense moonlight [SCA02] Dec. 11.95: haze; comet more diffuse, w/ a central cond. just visible [SCA02]. 2003 Jan. 6.61: StellaNavigator ver. 6.1 software used for comp.-star mags; $B-V$ values of comp. stars were $+0.52$ and $+0.67$ [KON03]. June 16.86 and 17.86: low alt.; twilight [HOR02].

◇ Comet C/2001 T4 (NEAT) \implies 2003 Nov. 17.58 and 23.58: $B-V$ values of comp. stars were $+0.51$, $+0.55$, $+0.62$,

+0.67, +0.70, and +0.85 [NAK01]. Dec. 28.53: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01].

◊ Comet C/2002 CE₁₀ (LINEAR) \Rightarrow 2003 Sept. 24.87: very faint stellar object; confirmed by detection of motion over a 20-min period along the calculated path; Digitized Sky Survey image shows nothing brighter than mag 16-17 near observed track; comp. stars taken from Henden sequence of Z UMi [BOU]. Oct. 19.48: Guide 8.0 software used for comp.-star mags; comp. star has $B-V = +0.64$ [TSU02].

◊ Comet P/2002 LZ₁₁ (LINEAR) \Rightarrow 2003 Nov. 22.58: Guide 8.0 software used for comp.-star mags; $B-V$ value of comp. star was +0.71 [NAK01]. Nov. 23.53: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85 [NAK01]. Dec. 28.49: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01].

◊ Comet C/2002 O4 (Hönig) [all obs. by SCA02] \Rightarrow 2002 Aug. 6.96: tail bright; "possible outburst?". Aug. 8.93: w/ 20.3-cm T, false nucleus of mag 9.8, (coma?) dia. 2', DC = 6. Aug. 9.96: in binoculars, the tail seems to have two components — a bright tail $\sim 1^\circ$ long in p.a. 220° and a diffuse tail in p.a. 260° ; in 20-cm T, starlike false nucleus of mag 9.4, (coma?) dia. 2', DC = 7. Aug. 14.88: total brightness unchanged, but noticeable change of the coma (the central region appears almost stellar), and the tail is brighter. Aug. 18.01: w/ 20.3-cm f/10 T (70 \times), very bright tail $\sim 40'$ long; center of coma very condensed (false nucleus of mag 9.5), (coma?) dia. 2', DC = 6/. Aug. 18.87: despite intense moonlight, the comet is well visible in binoculars and appears much condensed; also the tail is brighter. Aug. 19.88: intense moonlight. Aug. 23.79, 24.83, and 25.87: moonlight. Aug. 25.87 and 27.94: haze. Aug. 26.81: w/ 20.3-cm f/10 T (70 \times), starlike false nucleus of mag 9.0, (coma?) dia. $\sim 2'$, DC = 7. Sept. 1.93: low alt. Sept. 2.81: w/ 20.3-cm f/10 T (70 \times), elongated (in direction of tail by $\sim 3'$) false nucleus of mag 9.0, (coma?) dia. 2', DC = 7. Sept. 9.79: noticeable increase in brightness; w/ 20.3-cm T, bright false nucleus of mag 9.3, (coma?) dia. $\sim 1.5'$, DC = 7, fan-shaped tail $\sim 40'$ long. Sept. 12.87: diffuse comet at low alt., just visible in 7 \times 50 B.

◊ Comet C/2002 O6 (SWAN) \Rightarrow 2002 Aug. 16.11: 'combined in-out/out-out method' [KAN05].

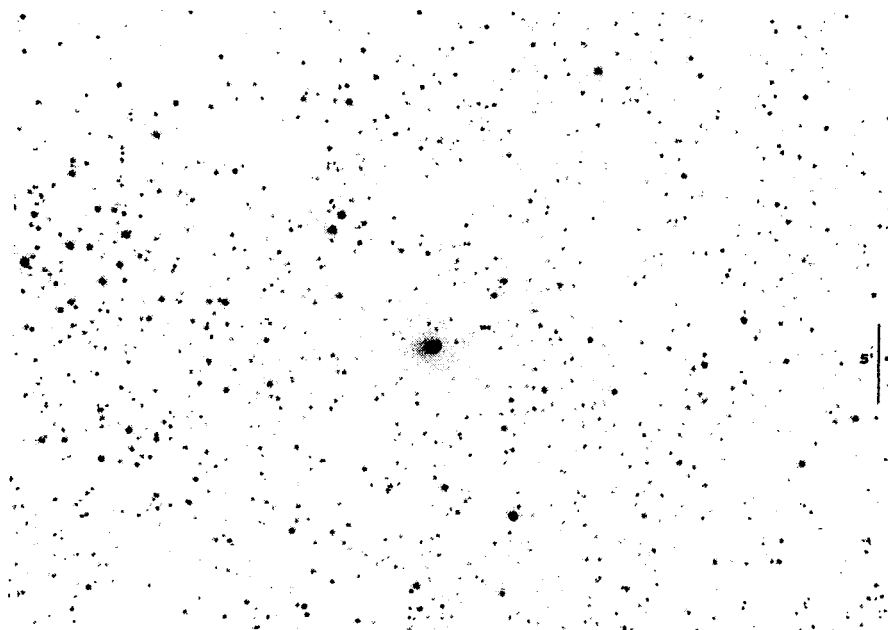
◊ Comet C/2002 O7 (LINEAR) \Rightarrow 2003 July 2.88: low alt. and some twilight; comm. by Kamil Hornoch [SRB].

◊ Comet C/2002 R3 (LONEOS) \Rightarrow 2003 Nov. 17.46: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85; faint tail extends eastward [NAK01].

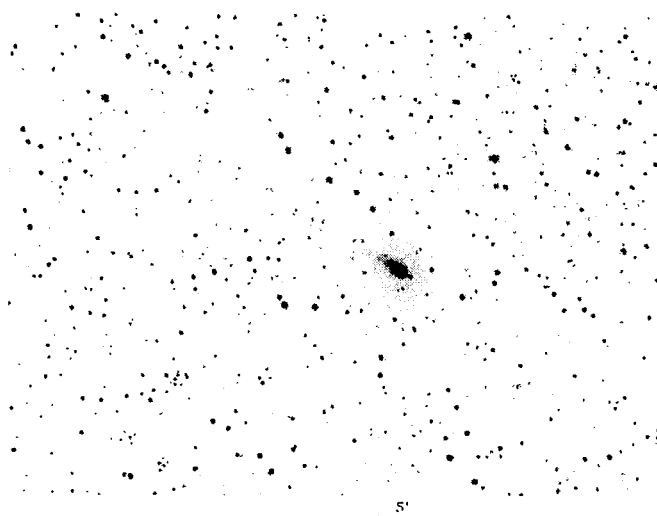
◊ Comet C/2002 T5 (LINEAR) \Rightarrow 2003 Nov. 1.68: Guide 8.0 software used for comp.-star mags; comp. star has $B-V = +0.69$ [OHS]. Dec. 1.74: $B-V$ values of comp. stars were +0.43, +0.55, +0.59, +0.63, +0.83, and +0.85 [NAK01]. Dec. 28.72: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01].

◊ Comet P/2002 T6 (NEAT-LINEAR) \Rightarrow 2003 Dec. 1.73: $B-V$ values of comp. stars were +0.43, +0.55, +0.59, +0.63, +0.83, and +0.85 [NAK01]. Dec. 28.59: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85; broad tail extends northward [NAK01]. Dec. 28.62: Guide 8.0 software used for comp.-star mags; comp. star has $B-V = +0.88$ [OHS]. Dec. 30.55: Guide 8.0 software used for comp.-star mags; comp. star has $B-V = +0.62$ [TSU02]. 2004 Jan. 15.59: $B-V$ values of comp. stars were +0.45, +0.59, +0.63, +0.83, and +0.85 [NAK01].

◊ Comet C/2002 T7 (LINEAR) \Rightarrow 2003 Sept. 2.09: comet shows strong cond. in very faint coma [BOU]. Sept. 22.99 and Oct. 17.91: dense star field; all SRB obs. comm. by Kamil Hornoch [SRB]. Oct. 17.91 and 18.89: elongated coma in p.a. 180° [SRB]. Oct. 18.84: comet near star of mag 10 [GUZ]. Oct. 18.85: small, well-condensed object; close to star of mag 10.1 (ref: TK) [BOU]. Oct. 18.89: central cond. only 0.7 from a bright (mag 10) star [SRB]. Oct. 19.84: obviously oval object; coma dia. 0.9 \times 0.7 [GUZ]. Oct. 26.53: StellaNavigator ver. 6.1 software used for comp.-star mags; comp. star has $B-V = +0.64$ [KON03]. Oct. 28.98: elongated coma in p.a. 170° ; bright star in coma; central cond. only 0.8 from a star of mag 13 [SRB]. Oct. 29.59: $B-V$ value of comp. star was +0.74; coma size 1.6 \times 1.1, elongated in p.a. 160° - 340° [TSU02]. Oct. 29.59, 30.81, Nov. 16.58, 17.47, 23.44, Dec. 2.50, 15.42, 23.55, 30.48, 2004 Jan. 9.5, 19.42, and 23.43: Guide 8.0 software used for comp.-star mags [TSU02]. 2003 Oct. 29.86: bright aurora was somewhat of a nuisance; however, obs. made when activity in Aur region was virtually absent [BOU]. Nov. 5.89 and Dec. 2.89: moonlight [SRB]. Nov. 6.15: comet somewhat elongated with faint, near-stellar central cond. offset towards p.a. $\approx 330^\circ$ [BOU]. Nov. 9.06: coma showed a bright inner part surrounded by a faint diffuse glow; obs. during total lunar eclipse [GRA04]. Nov. 11.73: in small holes between clouds; moonlight [GUZ]. Nov. 12.71: some light pollution; low alt. [GUZ]. Nov. 12.89: elongated coma in p.a. 160° [SRB]. Nov. 13.39, 17.57, 19.40, 22.45, 23.45, 23.48, Dec. 3.39, 12.41, 13.44, 16.58, 21.55, 23.53, 28.55, 2004 Jan. 11.44, 19.40, and 25.42: GUIDE 6.0 software used for comp.-star mags [NAG08]. 2003 Nov. 14.03: alt. 12° [AMO01]. Nov. 14.80: some moonlight [GUZ]. Nov. 16.07: comet very condensed and quite small — so small in the 25-cm L, in fact, that it was difficult to use anything but the VBM method for mag estimation; despite its relatively faint brightness, comet was easily seen in 12 \times 50 B after first seen in the larger instruments (obs. for several weeks around this time made from a relatively dark site in central Massachusetts) [GRE]. Nov. 16.58: $B-V$ value of comp. star was +0.56 [TSU02]. Nov. 16.63: $B-V$ values of comp. stars were +0.52, +0.67, +0.68, +0.85, and +0.87 [NAK01]. Nov. 17.86, 25.83, Dec. 15.8, 16.8, and 21.0: elongated coma [GON05]. Nov. 17.93: clearly visible as a diffuse star [GRA04]. Nov. 18.07: alt. 19° [AMO01]. Nov. 20.04: alt. 17° [AMO01]. Nov. 22.55: StellaNavigator ver. 6.1 software used for comp.-star mags [MOM]. Nov. 22.60: $B-V$ values of comp. stars were +0.62, +0.67, and +0.85 [NAK01]. Nov. 22.68, Dec. 12.41, 20.41, and 30.55: Guide 7.0 software used for comp.-star mags [MIY01]. Nov. 24.85, 25.83, and 27.87: elliptical coma and weak tail possibly 1' long in p.a. 80° [BUS01]. Nov. 25.48: Guide 8.0 software used for comp.-star mags [YOS02].



Two CCD images of comet C/2002 T7 by Rhemann and Jäger. Above: taken on 2003 Nov. 25.79 with a 500-mm $f/4.8$ telephoto lens (+ RGB filtering¹); combination of three 2-min exposures. The comet is the brightest object just left of center with a short tail pointing to the left (east); north is up. The cluster NGC 1342 is at far left. The bar at the field's right edge spans 5'. Below: image taken on 2003 Dec. 18.79 with a 25-cm reflector; the scale bar at bottom spans 5'.

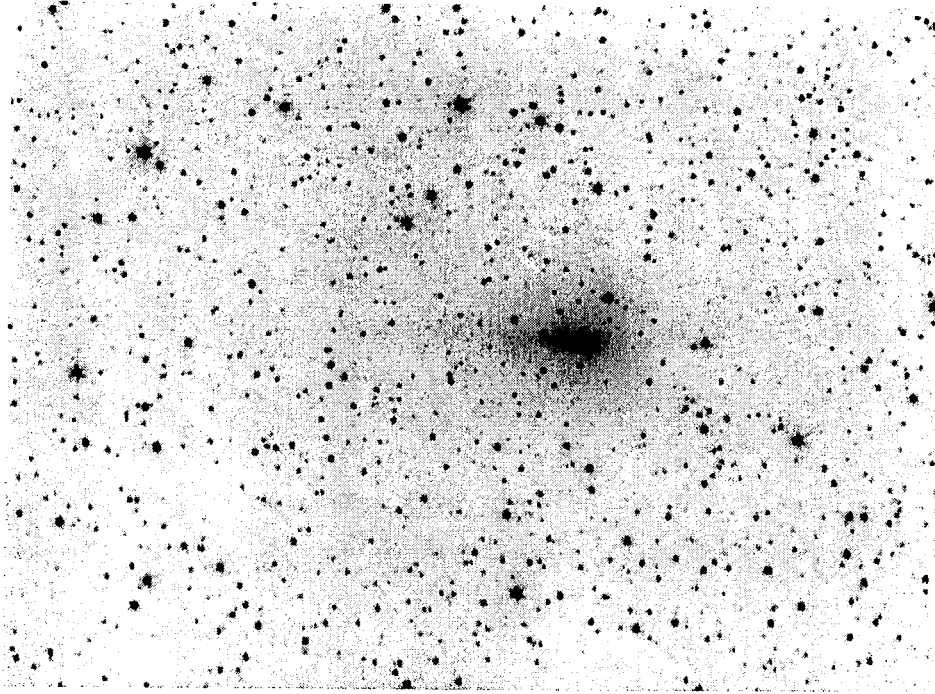


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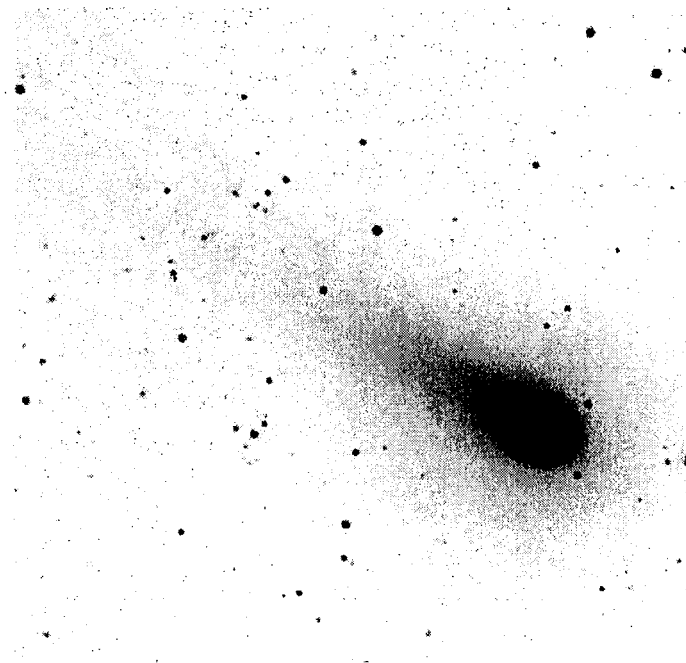
[text continued from bottom of page 14]

Dec. 1.63: $B-V$ values of comp. stars were +0.43, +0.55, +0.59, +0.63, +0.83, and +0.85 [NAK01]. Dec. 2.50: $B-V$ value of comp. star was +0.54 [TSU02]. Dec. 2.62, 10.37, 13.43, 23.38, and 27.52: The Sky ver. 5 software used for comp.-star mags [MIT]. Dec. 2.89: elongated coma in p.a. 135° [SRB]. Dec. 8.73: comet well visible despite full moon [BOU]. Dec. 10.69: strong moonlight; high clouds [GUZ]. Dec. 10.76: moon at low alt. [GON05]. Dec. 14.14: obs. from Mojave National Preserve, CA [LIN04]. Dec. 15.42: $B-V$ value of comp. star was +0.74 [TSU02]. Dec. 17.22 and 19.09: obs. from Mountain Springs, NV [LIN04]. Dec. 17.82: w/ 25.4-cm J (58 \times), broad tail visible, 10' long in p.a. 85° [BOU]. Dec. 17.82: w/ 25.4-cm J (58 \times), broad tail 11' long in p.a. 87° [DIJ]. Dec. 17.91: easy object w/ bright parabolic coma; at the apex was a false nucleus of mag 12.5 (estimated at 242 \times); tail showed a surprisingly high surface brightness

¹ This indicates a tri-color image produced by combining images taken through red, green, and blue filters. Some CCD photographers use the 'LRGB' color technique, in which a black-and-white image (an "luminance layer") is added to control the brightness of the image (the object being to bring out more detail).



Above: CCD image of C/2002 T7 by Rhemann and Jäger taken on 2003 Dec. 20.72 with a 25-cm T. Below: CCD image of comet C/2002 T7 by Martin Moberley taken around 2004 Jan. 24.772 (same instrumentation as for his image on page 9); 240-sec exposure (north at top; each side of the image is 13' long).



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[KAM01]. Dec. 18.80: w/ 31.0-cm J (72×), broad tail visible, 12' long in p.a. 85° [BOU]. Dec. 18.80: w/ 31.0-cm J (72×), broad tail visible, 13' long in p.a. 76° [DIJ]. Dec. 18.85: morphology as yesterday; false nucleus at the apex of the parabolic coma estimated at mag 12.0, via 242× [KAM01]. Dec. 19.47: comet close to bright star; very impressive w/ 25.4-cm L (71×, 114×); distinct tail visible, and coma + central cond. appeared elongated approx. ⊥ to tail axis [SEA]. Dec. 20.47, 21.43, 23.45, 2004 Jan. 11.44, 13.45, and 25.5: Guide 8.0 software used for comp.-star mags [YOS02].

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2003 Dec. 20.95: short broad tail evident [COM]. Dec. 21.44: StellaNavigator ver. 6 software used for comp.-star mags [MOM]. Dec. 21.83: comet close to star of mag 8.4; at 58 \times , broad tail visible, 15' long in p.a. 80° [BOU]. Dec. 21.84: at 72 \times , tail 14' long in p.a. 78° [DIJ]. Dec. 22.77: nice view in binoculars with comet only 1°5 from M33 [BOU]. Dec. 23.55: $B-V$ value of comp. star was +0.85 [TSU02]. Dec. 23.89: coma extended in tailward direction; central cond. offset in sunward direction; tail again w/ surprisingly high surface brightness; at 242 \times , false nucleus of mag 12.0 [KAM01]. Dec. 23.96: interference from clouds [AMO01]. Dec. 26.96: from Greenwich, NY; comet almost coincident with 9th-mag star, so binocular estimate was impossible [LIN04]. Dec. 28.46: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01]. Dec. 28.55: Guide 8.0 software used for comp.-star mags; comp. star has $B-V = +0.64$ [OHS]. Dec. 28.87: moonlight beginning to interfere [GON05]. Dec. 29.79: dominating central cond.; tail easy to see, despite moonlight; at 242 \times , starlike false nucleus of mag 12.0 [KAM01]. Dec. 30.48: $B-V$ value of comp. star was +0.66 [TSU02].

2004 Jan. 1.02: bright moon nearby [CRE01]. Jan. 5.97 and 7.96: moonlight [AMO01]. Jan. 6.83: moonlight [GON05]. Jan. 7.67: mag of nuclear cond. 11.9 [SHU]. Jan. 9.40: comp. star has $B-V = +0.41$ [TSU02]. Jan. 10.74: slightly hazy before incoming cloud [BOU]. Jan. 14.82: coma significantly enhanced through Swan-band filter in 25 \times 100 B [GON05]. Jan. 15.46: $B-V$ values of comp. stars were +0.45, +0.59, +0.63, +0.83, and +0.85 [NAK01]. Jan. 15.72: comp. stars SAO 74195 and SAO 92031, but Guide 8.0 software used to obtain the comp.-star mags [SVE01]. Jan. 16.98: difficult object of low surface brightness [DES01]. Jan. 16.98, 17.99, 18.99, and 19.98: The Guide v.8 software used for reference-star mags [DES01]. Jan. 17.01, 20.01, and 24.01: comet obs. from light-polluted suburban Boston with snow cover, and yet its large coma size was easily visible in 20 \times 80 B (but obviously much smaller coma than seen from the dark-sky site on Jan. 20.99) [GRE]. Jan. 17.45: Guide 6.0 software used for comp.-star mags [HAS08]. Jan. 17.75: "first clear night this year" at Virsbo, Sweden [KAR02]. Jan. 17.99: comet has a nice fan tail $\approx 25'$ long in p.a. 64°; large, diffuse coma; w/ 20-cm $f/8$ L (100 \times), DC = 4 and tail 15' long; w/ 18-cm $f/6$ L (67 \times), DC = 5 and tail 0°15 long [DES01]. Jan. 19.16: well-condensed, round, and diffuse coma w/ brighter center; no tail visible; in 25-cm $f/10$ T (110 \times), coma was well condensed (DC = 7; dia. 2') w/ a pseudostellar central cond. of mag $\approx 10-11$, and a 20'-long straight, diffuse tail in p.a. 65° (coma was extended towards the tail); obs. from Saguaro National Park, west of Tucson, AZ [WAR01]. Jan. 19.42: comp. star has $B-V = +0.52$ [TSU02]. Jan. 20.99: obs. from darker site in central MA again in very clear and very cold conditions; coma dia. much larger; coma about as easily visible in 7 \times 35 B (coma dia. $\sim 10'$, DC $\sim 3-4$; no mag est. made) tonight as it was from suburban-Boston site last night in 20 \times 80 B!; "I was surprised at the much-brighter mag estimate, compared to the previous night, which I 'confirmed' by the VBM mag estimate (w/ 12 \times 50 B) being ~ 0.7 mag fainter than the VSS mag — which I find a typical VBM-VSS discrepancy for large, not-high-condensed comets such as this (larger instruments do show a nice central cond. in this comet, but the coma outside the cond. currently dominates the total brightness)" [GRE]. Jan. 24.80: w/ 30.5-cm T (56 \times), straight tail $\approx 0^\circ 2$ long; sky gray w/ low contrast [COM]. Jan. 25.9: after moonset [GON05].

◊ Comet C/2002 V1 (NEAT) \Rightarrow 2002 Dec. 11.90: haze [SCA02].

◊ Comet C/2002 V2 (LINEAR) \Rightarrow 2003 Nov. 17.57: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85 [NAK01].

◊ Comet C/2002 VQ₉₄ (LINEAR) \Rightarrow 2003 Nov. 16.60: $B-V$ values of comp. stars were +0.52, +0.67, +0.68, +0.85, and +0.87 [NAK01].

◊ Comet C/2002 X1 (LINEAR) \Rightarrow 2003 Sept. 4.12: comet seen as a faint, slightly condensed object; reality checked against Digitized Sky Survey image, which shows nothing stellar or nebular brighter than mag ≈ 16 near obs. position [BOU]. Oct. 26.96 and 27.94: comp. stars taken from Henden photometry of SA95 [BOU]. Nov. 23.51: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85 [NAK01]. Nov. 23.55 and Dec. 23.47: Guide 8.0 software used for comp.-star mags [TSU02]. Nov. 23.55: $B-V$ value of comp. star was +0.66 [TSU02]. Dec. 23.47: $B-V$ value of comp. star was +0.57 [TSU02].

◊ Comet C/2002 Y1 (Juels-Holvorcem) \Rightarrow 2003 Mar. 24.77: w/ 0.08-m refractor, clear central cond.; comet at low alt. [SCA02]. Apr. 1.42: comet circular and diffuse w/ no pointlike cond. [SHA04].

◊ Comet C/2003 A2 (Gleason) \Rightarrow 2004 Jan. 17.65: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01].

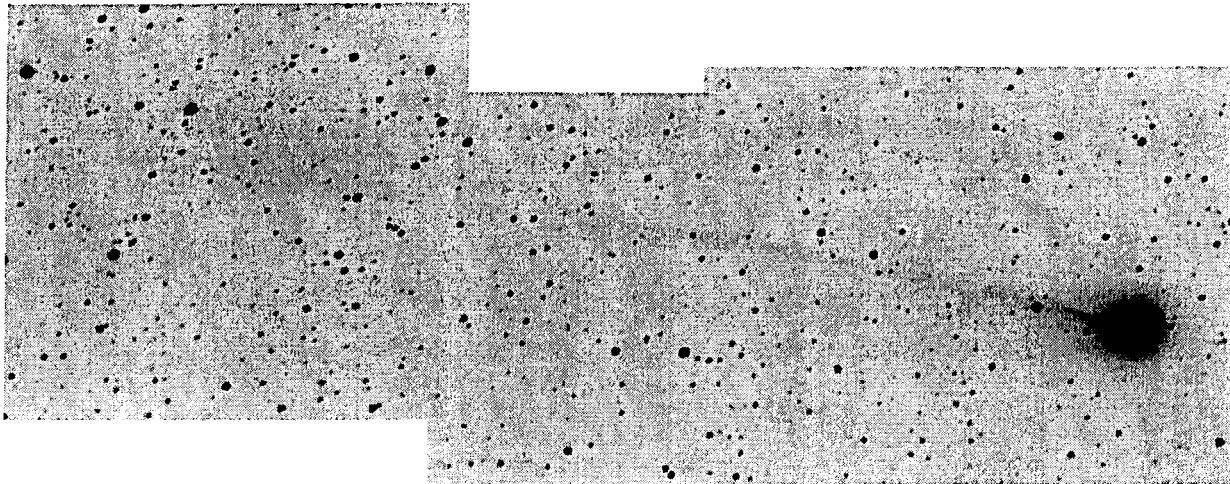
◊ Comet C/2003 F1 (LINEAR) \Rightarrow 2003 June 17.93 and July 14.89: comet close to bright star [HOR02]. July 7.92, 8.99, 10.93, 14.89, and 15.88: moonlight [HOR02].

◊ Comet C/2003 G1 (LINEAR) \Rightarrow 2003 July 8.96, 10.97, 14.95, and 15.94: moonlight [HOR02].

◊ Comet C/2003 H1 (LINEAR) \Rightarrow 2003 July 7.90, 8.90, 10.92, 14.88, and 15.90: moonlight [HOR02]. July 20.89: comet close to star [HOR02]. Dec. 3.84: comp. star has $B-V = +0.46$ [KAD02]. Dec. 28.80: Guide 8.0 software used for comp.-star mags; comp. stars have $B-V$ values of +0.53 and +0.55 [OHS]. Dec. 31.81: StellaNavigator ver. 6.1 software used for comp.-star mags; comp. star has $B-V = +1.05$ [KON03].

◊ Comet C/2003 H3 (NEAT) \Rightarrow 2003 July 15.05 and 16.04: moonlight; dense star field [HOR02].

◊ Comet C/2003 K4 (LINEAR) \Rightarrow 2003 June 17.95, July 8.94, 10.96, 14.91, and 15.92: moonlight [HOR02]. July 2.98, 7.94, 10.96, 14.91, and 20.95: dense star field [HOR02]. Nov. 17.43: $B-V$ values of comp. stars were +0.51, +0.55,



CCD image of comet C/2002 Y1 by Rhemann and Jäger taken on 2003 Mar. 23.82 with a 14-inch $f/3.3$ telescope (+ HX916 camera). The narrow, wavy gas tail extends to the far left on the original images.

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+0.62, +0.67, +0.70, and +0.85 [NAK01]. Nov. 23.73: ephemeris from MPC website; checked w/ Digitized Sky Survey; limiting stellar mag 15.5; in same field as 2P [HAS02]. Dec. 21.37: Guide 8.0 software used for comp.-star mags; comp. star has $B-V = +0.58$ [TSU02].

◇ Comet C/2003 L2 (LINEAR) \Rightarrow 2003 Dec. 28.52: Guide 8.0 software used for comp.-star mags; comp. star has $B-V = +0.64$ [OHS].

◇ Comet P/2003 O2 (LINEAR) \Rightarrow 2003 Nov. 17.62: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85; faint tail extends to SW [NAK01].

◇ Comet P/2003 O3 (LINEAR) \Rightarrow 2003 Nov. 16.62: $B-V$ values of comp. stars were +0.52, +0.67, +0.68, +0.85, and +0.87 [NAK01].

◇ Comet C/2003 R1 (LINEAR) \Rightarrow 2003 Nov. 17.51 and 23.47: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85 [NAK01].

◇ Comet P/2003 S1 (NEAT) \Rightarrow 2003 Nov. 16.53: $B-V$ values of comp. stars were +0.52, +0.67, +0.68, +0.85, and +0.87 [NAK01]. Dec. 14.48: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85 [NAK01]. 2004 Jan. 17.47: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01].

◇ Comet P/2003 S2 (NEAT) \Rightarrow 2003 Nov. 16.56: $B-V$ values of comp. stars were +0.52, +0.67, +0.68, +0.85, and +0.87 [NAK01]. Dec. 28.45: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01].

◇ Comet C/2003 S3 (LINEAR) \Rightarrow 2003 Nov. 17.60 and 23.59: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85 [NAK01]. Nov. 22.59: $B-V$ values of comp. stars were +0.62, +0.67, and +0.85 [NAK01].

◇ Comet C/2003 S4 (LINEAR) \Rightarrow 2003 Nov. 17.47 and Dec. 14.44: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85 [NAK01].

◇ Comet C/2003 T2 (LINEAR) \Rightarrow 2003 Oct. 16.81: very difficult object near limit of visibility; Digitized Sky Survey image showed nothing near obs. position; motion suspected, but not certain in the limited time before moonrise [BOU]. Oct. 18.87: comet is very faint, but definitely seen as a small, somewhat-condensed object [BOU]. Oct. 24.87: small, slightly condensed object; motion relative to nearby stars obvious after some 15 min [BOU]. Nov. 16.59: $B-V$ values of comp. stars were +0.52, +0.67, +0.68, +0.85, and +0.87 [NAK01]. Nov. 23.59 and Dec. 23.52: Guide 8.0 software used for comp.-star mags [TSU02]. Nov. 23.59: $B-V$ value of comp. star was +0.61 [TSU02]. Dec. 14.51: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85 [NAK01]. Dec. 23.52: $B-V$ value of comp. star was +0.43 [TSU02]. Dec. 28.59: Guide 8.0 software used for comp.-star mags; comp. star has $B-V = +0.64$ [OHS].

◇ Comet C/2003 T3 (Tabur) \Rightarrow 2003 Oct. 16.58: small, moderately condensed coma w/ bright stellar disk and fan-shaped tail [MAT08]. Oct. 22.50: no enhancement w/ Swan-band filter [MAT08]. Nov. 3.91: moonlight [SOU01]. Nov. 4.01: moonlight [AMO01]. Nov. 12.43: comet close to star [SEA].

◇ Comet C/2003 T4 (LINEAR) \Rightarrow 2003 Nov. 17.68: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85; faint tail expands to NE [NAK01]. Nov. 23.64: $B-V$ value of comp. star was +0.44 [TSU02]. Nov. 23.64 and Dec. 30.61: Guide 8.0 software used for comp.-star mags [TSU02]. Dec. 1.72: $B-V$ values of comp. stars were

+0.43, +0.55, +0.59, +0.63, +0.83, and +0.85 [NAK01]. Dec. 28.62 and 2004 Jan. 17.61: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01]. 2003 Dec. 30.61: $B-V$ value of comp. star was +0.44 [TSU02].

◊ Comet C/2003 U1 (LINEAR) \Rightarrow 2003 Nov. 16.55: $B-V$ values of comp. stars were +0.52, +0.67, +0.68, +0.85, and +0.87 [NAK01]. Nov. 23.50: Guide 8.0 software used for comp.-star mags; $B-V$ value of comp. star was +0.53 [NAK01].

◊ Comet P/2003 U2 (LINEAR) \Rightarrow 2003 Oct. 30.46: Guide 8.0 software used for comp.-star mags; comp. star has $B-V = +0.66$ [TSU02]. Nov. 16.49: Guide 8.0 software used for comp.-star mags; $B-V$ value of comp. star was +0.63 [NAK01].

◊ Comet P/2003 U3 (NEAT) \Rightarrow 2003 Nov. 17.53 and Dec. 14.50: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85 [NAK01]. 2004 Jan. 17.52: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01].

◊ Comet P/2003 UY₂₇₅ (LINEAR) \Rightarrow 2003 Dec. 28.57: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01].

◊ Comet C/2003 V1 (LINEAR) \Rightarrow 2003 Dec. 1.77: $B-V$ values of comp. stars were +0.43, +0.55, +0.59, +0.63, +0.83, and +0.85 [NAK01]. Dec. 28.67: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01]. Dec. 28.69: Guide 8.0 software used for comp.-star mags; comp. stars have $B-V$ values of +0.53 and +0.55 [OHS]. Dec. 30.63: Guide 8.0 software used for comp.-star mags; comp. star has $B-V = +0.68$ [TSU02].

◊ Comet C/2003 W1 (LINEAR) \Rightarrow 2003 Nov. 23.41 and Dec. 14.45: $B-V$ values of comp. stars were +0.51, +0.55, +0.62, +0.67, +0.70, and +0.85 [NAK01]. Dec. 22.37: Guide 8.0 software used for comp.-star mags; comp. star has $B-V = +0.54$ [TSU02]. 2004 Jan. 17.50: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01].

◊ Comet C/2003 WT₄₂ (LINEAR) \Rightarrow 2003 Dec. 1.66: $B-V$ values of comp. stars were +0.43, +0.55, +0.59, +0.63, +0.83, and +0.85 [NAK01]. Dec. 28.55: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01]. 2004 Jan. 15.53: $B-V$ values of comp. stars were +0.45, +0.59, +0.63, +0.83, and +0.85 [NAK01].

◊ Comet P/2003 XD₁₀ (LINEAR-NEAT) \Rightarrow 2003 Dec. 28.70 and 2004 Jan. 17.60: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01].

◊ Comet P/2004 A1 \Rightarrow 2004 Jan. 15.61: $B-V$ values of comp. stars were +0.45, +0.59, +0.63, +0.83, and +0.85 [NAK01]. Jan. 17.63: $B-V$ values of comp. stars were +0.45, +0.59, +0.62, +0.63, +0.67, +0.83, and +0.85 [NAK01].

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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 [07 = Comet Section, British Astronomical Association; 11 = Dutch Comet Section (Werkgroep Kometen); 16 = Japanese observers (via Akimasa Nakamura, Kuma, Japan); 35 = South American observers (c/o Jose G. de Souza Aguiar, Brazil); 42 = Belarus observers (c/o V. S. Nevski and S. E. Shurpakov, Vitebsk); 48 = Ukrainian observers (c/o Denis A. Svehkarev); etc.]:

| | | | | | |
|-------|----|----------------------------------|-------|----|----------------------------------|
| ABB | 07 | James Abbott, Witham, England | HAD01 | 32 | C. Hadházi, Hajdúhadház, Hungary |
| AM001 | 35 | Alexandre Amorim, Brazil | HAS02 | | Werner Hasubick, Germany |
| ARA | 35 | Wesley Araujo, Salvador, Brazil | HAS08 | 16 | Yuji Hashimoto, Hiroshima, Japan |
| BAL04 | 32 | J. Balogh, Hosszúhetény, Hungary | HOR02 | 23 | Kamil Hornoch, Czech Republic |
| BAL08 | 32 | Zoltán Balogh, Hungary | KAD02 | 16 | Ken-ichi Kadota, Saitama, Japan |
| BOU | | Reinder J. Bouma, Netherlands | KAM01 | | A. Kammerer, Ettlingen, Germany |
| BUS01 | 11 | E. P. Bus, The Netherlands | KAN05 | | Ralf Kannenberg, Switzerland |
| COM | 11 | Georg Comello, The Netherlands | KAR02 | 21 | Timo Karhula, Virsbo, Sweden |
| CRE01 | | Phillip J. Creed, OH, U.S.A. | KES02 | 32 | D. Keszthelyi, Gyongyos, Hungary |
| CSO | 32 | Tibor Csörgei, Slovak Republic | KOC03 | 32 | Antal Kocsis, Hungary |
| CSU | 32 | Mátyás Csukás, Salonta, Romania | KON03 | 16 | Eitoshi Konno, Iwate, Japan |
| DES01 | | Jose G. de Souza Aguiar, Brazil | KOS | | Attila Kósa-Kiss, Romania |
| DIE02 | | Alfons Diepvens, Belgium | KUL02 | 32 | Zoltan Kuli, Budapest, Hungary |
| DIJ | | Edwin van Dijk, The Netherlands | LAB02 | | Carlos Labordena, Spain |
| EZA | 16 | Y. Ezaki, Toyonaka, Osaka, Japan | LEH | | Martin Lehky, Czech Republic |
| GON05 | | J. J. Gonzalez, Asturias, Spain | LIN04 | | Mike Linnolt, U.S.A. |
| GRA04 | 24 | Bjoern Haakon Granslo, Norway | MAR02 | 13 | Jose Carvajal Martinez, Spain |
| GRE | | Daniel W. E. Green, U.S.A. | MAT08 | | Michael Mattiazzo, S. Australia |
| GUZ | 18 | Piotr Guzik, Krosno, Poland | MIT | 16 | Shigeo Mitsuma, Honjo, Japan |

| | | | |
|----------|---------------------------------|----------|----------------------------------|
| MIY01 16 | Osamu Miyazaki, Ibaraki, Japan | SEM02 42 | Andrey S. Semenyuta, Kazakstan |
| MOM 16 | Masahiko Momose, Nagano, Japan | SER02 | J rome Serant, Chevillon, France |
| MOR | Charles S. Morris, U.S.A. | SHA02 07 | Jonathan D. Shanklin, England |
| NAG08 16 | Yoshimi Nagai, Nagano, Japan | SHU 42 | Sergey E. Shurpakov, Belarus |
| NAK01 16 | Akimasa Nakamura, Ehime, Japan | SOU01 35 | Willian Carlos de Souza, Brazil |
| NAV02 | J. P. Navarro P., Murcia, Spain | *SRB 23 | Jiri Srba, Vsetin, Czech Rep. |
| NEV 42 | Vitali S. Nevski, Belarus | STO03 07 | David Storey, Isle of Man, U.K. |
| OHS 16 | Yuuji Ohshima, Nagano, Japan | SVE01 48 | Denis A. Svechkarev, Ukraine |
| RES 18 | Maciej Reszelski, Poland | SZA | S ndor Szab , Sopron, Hungary |
| RIE 11 | Hermanus Rietveld, Netherlands | SZA02 32 | Levente Szarka, Hungary |
| SAJ 32 | Andr s Sajtz, Satu-Nou, Romania | TOT03 32 | Zolt n T th, Hungary |
| SAN07 32 | G bor S nta, Hungary | TSU02 16 | Mitsunori Tsumura, Japan |
| SAR02 32 | Kriszti n S rneckzy, Hungary | UHR 32 | Andr s Uhrin, Szolnok, Hungary |
| SCA02 | Toni Scarmato, Calabria, Italy | WAR01 | Johan Warell, Sweden |
| SCH04 11 | Alex H. Scholten, Netherlands | YOSO2 16 | Katsumi Yoshimoto, Japan |
| SEA | David A. J. Seargent, Australia | YOSO4 16 | Seiichi Yoshida, Ibaraki, Japan |

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TABULATED VISUAL DATA (also format for old-style CCD data)

NOTE: As begun in the October 2001 issue, the CCD and visual tabulated data are separated. The tabulated CCD data are also now generally further separated into two "CCD" sections: the first in the old format for those observations submitted only in the old format, and the second in the new format (whose columns are described on page 208 of the July 2002 *ICQ*).

The headings for the tabulated data are as follows: "DATE (UT)" = Date and time to hundredths of a day in Universal Time; "N" = notes [* = correction to observation published in earlier issue of the *ICQ*; an exclamation mark (!) in this same location indicates that the observer has corrected his estimate in some manner for atmospheric extinction (prior to September 1992, this was the standard symbol for noting extinction correction, but following publication of the extinction paper — July 1992 *ICQ* — this symbol is only to be used to denote corrections made using procedures different from that outlined by Green 1992, *ICQ* 14, 55-59, and in Appendix E of the *ICQ Guide to Observing Comets* — and then only for situations where the observed comet is at altitude > 10 ); '&' = comet observed at altitude 20  or less with no atmospheric extinction correction applied; '\$' = comet observed at altitude 10  or lower, observations corrected by the observer using procedure of Green (*ibid.*); for a correction applied by the observer using Tables Ia, Ib, or Ic of Green (*ibid.*), the letters 'a', 'w', or 's', respectively, should be used; x indicates that a secondary source (often amateur computer software) was used to get supposedly correct comparison-star magnitudes from an accepted catalogue].

"MM" = the method employed for estimating the total (visual) magnitude; see article on page 186 of the Oct. 1996 issue [B = VBM method, M = Morris method, S = VSS or In-Out method, I = in-focus, C = unfiltered CCD, c = same as 'C', but for 'nuclear' magnitudes, V = electronic observations — usually CCD — with Johnson V filter, *etc.*]. "MAG." = total (visual) magnitude estimate; a colon indicates that the observation is only approximate, due to bad weather conditions, *etc.*; a left bracket (l) indicates that the comet was not seen, with an estimated limiting magnitude given (if the comet IS seen, and it is simply estimated to be fainter than a certain magnitude, a "greater-than" sign (>) must be used, not a bracket). "RF" = reference for total magnitude estimates (see pages 98-100 of the October 1992 issue, and Appendix C of the *ICQ Guide to Observing Comets*, for all of the 1- and 2-letter codes; an updated list is also maintained at the *ICQ* World Wide Website). "AP." = aperture in centimeters of the instrument used for the observations, usually given to tenths. "T" = type of instrument used for the observation (R = refractor, L = Newtonian reflector, B = binoculars, C = Cassegrain reflector, A = camera, T = Schmidt-Cassegrain reflector, S = Schmidt-Newtonian reflector, E = naked eye, *etc.*). "F/" and "PWR" are the focal ratio and power or magnification, respectively, of the instrument used for the observation — given to nearest whole integer (round even); note that for CCD observations, in place of magnification is given the exposure time in seconds [see page 11 of the January 1997 issue; a lower-case "a" indicates an exposure time under 1000 seconds, an upper-case "A" indicates an exposure time of 1000-1999 seconds (with the thousands digit replaced by the "A"), an upper-case "B" indicates an exposure time of 2000-2999 seconds (with the thousands digit replaced by the "B"), *etc.*].

"COMA" = estimated coma diameter in minutes of arc; an ampersand (&) indicates an approximate estimate; an exclamation mark (!) precedes a coma diameter when the comet was not seen (*i.e.*, was too faint) and where a limiting magnitude estimate is provided based on an "assumed" coma diameter (a default size of 1' or 30" is recommended; cf. *ICQ* 9, 100); a plus mark (+) precedes a coma diameter when a diaphragm was used electronically, thereby specifying the diaphragm size (*i.e.*, the coma is almost always larger than such a specified diaphragm size). "DC" = degree of condensation on a scale where 9 = stellar and 0 = diffuse (preceded by lower- and upper-case letters S and D to indicate the presence of stellar and disklike central condensations; cf. July 1995 issue, p. 90); a slash (/) indicates a value midway between the given number and the next-higher integer. "TAIL" = estimated tail length in degrees, to 0.01 degree if appropriate; again, an ampersand indicates a rough estimate. Lower-case letters between the tail length and the p.a. indicate that the tail was measured in arcmin ("m") or arcsec ("s"), *in which cases the decimal point is shifted one column to the right*. "PA" = estimated measured position angle of the tail to nearest whole integer in degrees (north = 0 , east = 90 ). "OBS" = the observer who made the observation (given as a 3-letter, 2-digit code).

A complete list of the Keys to abbreviations used in the *ICQ* is available from the Editor for \$4.00 postpaid (available free of charge via e-mail); these Keys (with the exception of the Observer Codes) are also available in the *Guide to Observing Comets* and via the *ICQ*'s World Wide Web site. Please note that data in archival form, and thus the data to be sent in machine-readable form, use a format that is different from that of the Tabulated data in the printed pages of the *ICQ*; see pages 59-61 of the July 1992 issue, p. 10 of the January 1995 issue, and p. 100 of the April 1996 issue for further information [note correction on page 140 of the October 1993 issue]. Further guidelines concerning reporting of data may be found on pages 59-60 of the April 1993 issue, and in the *ICQ Guide to Observing Comets*.

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NOTE: The new-style CCD tabulated data begin on page 38.

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Visual Data

Comet 2P/Encke

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|-------|------|------|-----|----|-----|-----|------|----|------|----|-------|
| 2003 08 06.06 | S | [12.5 | HS | 20.3 | L | 6 | 108 | ! | 0.5 | | | | GUZ |
| 2003 09 07.05 | S | [13.7 | HS | 20.3 | L | 6 | 108 | ! | 0.5 | | | | GUZ |
| 2003 09 21.94 | S | [13.8 | HS | 20.3 | L | 6 | 108 | ! | 0.5 | | | | GUZ |
| 2003 09 26.13 | S | 14.1 | AC | 31.0 | J | 6 | 143 | | 0.9 | 2 | | | BOU |
| 2003 10 15.75 | S | 13.0: | HS | 20.3 | L | 6 | 108 | 1 | | 1 | | | GUZ |
| 2003 10 16.77 | S | 12.8 | HN | 31.0 | J | 6 | 124 | 1.0 | | 2/ | | | BOU |
| 2003 10 16.77 | S | 13.0 | HN | 31.0 | J | 6 | 124 | 0.7 | | 2/ | | | DIJ |
| 2003 10 18.80 | S | 12.8 | HN | 31.0 | J | 6 | 143 | 0.7 | | 3/ | | | DIJ |
| 2003 10 18.80 | S | 12.9 | HN | 31.0 | J | 6 | 143 | 1.0 | | 3 | | | BOU |
| 2003 10 18.81 | S | 11.0 | AC | 8.0 | R | 6 | 48 | 2 | | 0 | | | KOS |
| 2003 10 18.82 | S | 12.7 | HS | 20.3 | L | 6 | 108 | 1.5 | | 2 | | | GUZ |
| 2003 10 19.83 | S | 12.5: | HS | 20.3 | L | 6 | 108 | 2 | | 2 | | | GUZ |
| 2003 10 21.86 | S | 12.3 | HN | 25.4 | J | 6 | 72 | 1.9 | | 2 | | | BOU |
| 2003 10 23.80 | S | 10.0: | TT | 7.8 | R | 4 | 12 | & 7 | | 0 | | | BUS01 |
| 2003 10 23.81 | S | 10.3 | TT | 8.0 | B | | 15 | 5 | | 1 | | | RIE |
| 2003 10 23.83 | S | 11.8 | TK | 31.0 | J | 6 | 72 | 2.5 | | 2 | | | BOU |
| 2003 10 23.83 | S | 12.1 | TK | 31.0 | J | 6 | 72 | 1.8 | | 0/ | | | DIJ |
| 2003 10 23.92 | S | 13.2 | HS | 30 | L | 4 | 96 | | | 8 | | | ABB |
| 2003 10 24.82 | S | 10.6 | AC | 8.0 | R | 6 | 48 | 2 | | 0 | | | KOS |
| 2003 10 24.84 | S | 11.7 | TK | 20.3 | L | 6 | 63 | 3 | | 2/ | | | GUZ |
| 2003 10 24.85 | S | 9.8 | TT | 7.8 | R | 4 | 12 | & 8 | | 0 | | | BUS01 |
| 2003 10 24.85 | S | 11.6 | TK | 31.0 | J | 6 | 58 | 3 | | 2 | | | BOU |
| 2003 10 24.96 | S | 13.5 | HS | 27.0 | L | 6 | 167 | 1.0 | | 2 | | | TOT03 |
| 2003 10 25.76 | S | 10.9 | TI | 25.0 | T | 5 | 48 | 8 | | s6 | | | SCA02 |
| 2003 10 26.80 | S | 10.5 | TI | 20.0 | T | 6 | 63 | 9 | | s4 | | | SCA02 |
| 2003 10 26.90 | S | 9.7: | TT | 7.8 | R | 4 | 12 | & 7 | | 0 | | | BUS01 |
| 2003 10 26.98 | S | 9.9 | TT | 8.0 | B | | 15 | 7 | | 1 | | | RIE |
| 2003 10 26.98 | S | 10.9 | TK | 31.0 | J | 6 | 58 | 4.5 | | 2 | | | BOU |
| 2003 10 27.77 | S | 11.0 | TK | 20.3 | L | 6 | 63 | 4.5 | | 2 | | | GUZ |
| 2003 10 27.86 | S | 10.7 | TK | 31.0 | J | 6 | 58 | 4.5 | | 2/ | | | BOU |
| 2003 10 27.87 | S | 10.5 | TK | 31.0 | J | 6 | 58 | 4.3 | | 0/ | | | DIJ |
| 2003 10 27.95 | S | 9.5 | TT | 8.0 | B | | 15 | 7 | | 0 | | | SCH04 |
| 2003 10 27.97 | S | 10.7 | TK | 20.3 | L | 6 | 63 | 5 | | 2 | | | GUZ |
| 2003 10 28.77 | S | 10.6 | TK | 20.3 | L | 6 | 63 | 5 | | 3 | | | GUZ |
| 2003 10 28.78 | S | 10.1 | TK | 10.0 | B | | 25 | 2.3 | | 3 | | | HAS02 |
| 2003 10 28.89 | S | 10.4 | TK | 15.6 | L | 5 | 36 | 3.5 | | 1 | | | DIJ |
| 2003 10 28.89 | S | 10.4 | TK | 15.6 | L | 5 | 36 | 4 | | 2 | | | BOU |
| 2003 10 29.83 | S | 9.6: | TK | 5.0 | B | | 10 | 7 | | 2 | | | GUZ |
| 2003 10 29.84 | S | 10.0 | TK | 15.6 | L | 5 | 29 | 5 | | 2 | | | BOU |
| 2003 10 29.85 | S | 9.9 | TK | 15.6 | L | 5 | 29 | 3.5 | | 1 | | | DIJ |
| 2003 11 01.75 | S | 8.4 | VB | 8.0 | B | | 20 | 7 | | 1 | | | SHA02 |
| 2003 11 01.98 | B | 11.3 | TI | 23.5 | T | 10 | 94 | 4 | | 2 | | | LAB02 |
| 2003 11 02.67 | S | 7.8: | AA | 5.0 | B | | 10 | 7 | | s2 | 2.5 | 54 | SAJ |
| 2003 11 05.78 | S | 9.0: | TT | 7.8 | R | 4 | 12 | & 5 | | 1 | | | BUS01 |
| 2003 11 05.83 | S | 9.5 | AA | 8.0 | R | 6 | 19 | 3 | | 1 | | | KOS |
| 2003 11 06.75 | S | 8.7: | TT | 7.8 | R | 4 | 12 | & 7 | | 1 | | | BUS01 |

Comet 2P/Encke [cont.]

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|------|---|----|-----|------|----|------|----|-------|
| 2003 11 09.05 | | S | 8.5 | TK | 15.2 | L | 5 | 23 | 14 | 2/ | | | GRA04 |
| 2003 11 09.06 | | S | 8.6 | TJ | 8.0 | B | | 20 | & 9 | 0 | | | GRE |
| 2003 11 09.07 | | B | 10.0 | TK | 10.0 | B | | 25 | 5.6 | 3 | | | HAS02 |
| 2003 11 09.07 | | S | 8.6 | TJ | 5.0 | B | | 12 | & 9 | 0 | | | GRE |
| 2003 11 09.08 | | S | 8.7 | TJ | 10.0 | B | | 25 | & 9 | 1 | | | GRE |
| 2003 11 10.70 | | S | 8.5: | TK | 5.0 | B | | 10 | &10 | 2 | | | GUZ |
| 2003 11 10.72 | | S | 9.5: | TK | 20.3 | L | 6 | 63 | & 5 | 3/ | | | GUZ |
| 2003 11 10.84 | | S | 8.3 | AC | 6.0 | B | | 7 | &10 | 2 | | | RES |
| 2003 11 11.42 | | S | 8.4 | AA | 10.0 | B | | 25 | 12 | 1 | | | SEA |
| 2003 11 11.68 | | S | 8.4 | TK | 5.0 | B | | 10 | 12 | 2 | | | GUZ |
| 2003 11 11.69 | | S | 9.2 | TK | 20.3 | L | 6 | 63 | 8 | 3 | | | GUZ |
| 2003 11 12.69 | | S | 9.0 | TK | 20.3 | L | 6 | 63 | 8 | 3 | | | GUZ |
| 2003 11 12.70 | | S | 8.3 | TK | 5.0 | B | | 10 | 13 | 2/ | | | GUZ |
| 2003 11 12.72 | | S | 8.9 | TI | 6.0 | B | | 20 | 10 | 1 | | | SAR02 |
| 2003 11 12.72 | | S | 9.0 | TI | 27.0 | L | 6 | 60 | 7 | 1 | | | TOT03 |
| 2003 11 12.73 | | S | 9.2 | TI | 20.0 | L | 6 | 45 | 7 | 1/ | | | SAN07 |
| 2003 11 12.74 | | S | 7.9 | TI | 8.0 | R | 5 | 16 | 16 | s5 | | | SCA02 |
| 2003 11 12.77 | | S | 8.0: | TK | 8.0 | B | | 20 | 11 | 1 | | | SHAO2 |
| 2003 11 12.83 | | S | 7.8 | AC | 6.0 | B | | 7 | &10 | 2 | | | RES |
| 2003 11 13.43 | x | S | 9.4: | TJ | 32.0 | L | 5 | 58 | 5 | 1 | | | NAG08 |
| 2003 11 13.47 | x | S | 8.9 | TK | 10.0 | B | | 20 | 7 | 1/ | | | YOS02 |
| 2003 11 13.48 | x | S | 9.6 | TJ | 15.0 | B | | 25 | 5 | 1 | | | MIT |
| 2003 11 13.73 | | S | 8.3 | TK | 5.0 | B | | 10 | 12 | 2/ | | | GUZ |
| 2003 11 13.74 | | S | 8.9 | TK | 20.3 | L | 6 | 63 | 8 | 3 | | | GUZ |
| 2003 11 14.73 | | S | 7.8 | TI | 5.0 | B | | 7 | 15 | s3 | | | SCA02 |
| 2003 11 14.74 | | S | 8.5 | TJ | 15.0 | R | 8 | 30 | 4 | 2 | | | DIE02 |
| 2003 11 14.77 | | S | 8.1 | TK | 5.0 | B | | 10 | 14 | 2/ | | | GUZ |
| 2003 11 14.78 | | S | 8.7 | TK | 20.3 | L | 6 | 63 | 10 | 3 | | | GUZ |
| 2003 11 14.89 | | S | 8.2 | TT | 8.0 | B | | 15 | & 8 | 1 | | | SCH04 |
| 2003 11 15.11 | | S | 7.1 | TJ | 5.0 | B | | 10 | 19 | 1 | | | MOR |
| 2003 11 15.75 | | S | 7.7 | TK | 30.5 | T | 10 | 56 | >10 | 1 | | | COM |
| 2003 11 15.77 | | S | 8.5 | TK | 20.3 | T | 10 | 50 | 9 | 2 | | | KAM01 |
| 2003 11 15.80 | | S | 7.2 | TT | 5.6 | B | | 10 | &25 | 0/ | | | BUS01 |
| 2003 11 15.81 | | S | 8.1 | TK | 8.0 | B | | 15 | 10 | 2/ | | | BOU |
| 2003 11 16.05 | | B | 8.4 | AC | 10.0 | B | 4 | 20 | 14 | 2 | | | NOW |
| 2003 11 16.06 | % | S | 7.7 | TJ | 5.0 | B | | 12 | & 9 | 0/ | | | GRE |
| 2003 11 16.72 | | S | 7.9 | TK | 5.0 | B | | 10 | 12 | 2/ | | | GUZ |
| 2003 11 16.81 | | S | 7.7 | TI | 8.0 | B | | 20 | 10 | 2 | | | SHAO2 |
| 2003 11 16.82 | | S | 7.1 | TT | 5.6 | B | | 10 | &25 | 0/ | | | BUS01 |
| 2003 11 17.11 | | S | 7.3 | TJ | 5.0 | B | | 10 | 22 | 0/ | | | MOR |
| 2003 11 17.40 | x | S | 9.3 | TJ | 32.0 | L | 5 | 58 | 5.3 | 1/ | | | NAG08 |
| 2003 11 17.43 | x | M | 8.8 | TT | 10.0 | B | | 26 | 11 | 2 | | | TSU02 |
| 2003 11 17.45 | x | S | 8.8 | TJ | 10.0 | B | | 20 | 6 | 1 | | | NAG08 |
| 2003 11 17.89 | | S | 8.3 | TK | 10.0 | B | | 25 | 12 | 2 | | | GON05 |
| 2003 11 17.90 | | S | 8.1 | TK | 8.0 | B | | 11 | 12 | 1 | | | GON05 |
| 2003 11 17.91 | | S | 7.0 | TT | 5.6 | B | | 10 | &23 | 1 | | | BUS01 |
| 2003 11 17.91 | | S | 7.9 | TK | 5.0 | B | | 7 | 9 | 1 | | | GON05 |
| 2003 11 17.92 | | S | 7.5 | TK | 7.0 | R | 7 | 24 | 13 | 3 | | | GRA04 |
| 2003 11 17.93 | | S | 8.4 | TK | 20.3 | T | 10 | 36 | 9 | 2 | | | GON05 |
| 2003 11 18.11 | | S | 7.3 | TJ | 5.0 | B | | 10 | 20 | 0/ | | | MOR |
| 2003 11 18.77 | | S | 7.5 | TI | 5.0 | B | | 7 | 16 | s3 | | | SCA02 |
| 2003 11 18.78 | | B | 8.9 | TI | 23.5 | T | 10 | 67 | 5 | 5 | | | LAB02 |
| 2003 11 18.83 | | S | 6.9 | TT | 5.6 | B | | 10 | &24 | 1 | | | BUS01 |
| 2003 11 18.86 | | S | 8.7 | S | 7.0 | B | | 10 | 12 | 1 | | | MAR02 |
| 2003 11 19.12 | | S | 7.2 | TJ | 5.0 | B | | 10 | 22 | 0/ | | | MOR |
| 2003 11 19.38 | x | S | 8.2 | TJ | 10.0 | B | | 20 | 11 | 1/ | | | NAG08 |
| 2003 11 19.56 | | S | 9.4 | HD | 6 | R | 10 | 30 | 1.1 | 2 | | | SEM02 |
| 2003 11 19.68 | | S | 8.0 | TI | 16.0 | L | 6 | 50 | 12.0 | 3 | | | HAD01 |
| 2003 11 19.71 | | S | 6.5 | TI | 5.0 | B | | 10 | 20 | 1 | 0.1 | 45 | SAN07 |
| 2003 11 19.72 | | S | 7.0: | TI | 11.4 | L | 5 | 20 | 12 | 2 | | | SAN07 |
| 2003 11 19.75 | | S | 6.7 | TI | 8.0 | R | 5 | 16 | 18 | s3 | | | SCA02 |
| 2003 11 19.78 | | B | 8.0 | TK | 10.0 | B | | 25 | 8.0 | 3 | | | HAS02 |
| 2003 11 19.82 | | S | 6.9 | TT | 5.6 | B | | 10 | &24 | 1 | | | BUS01 |
| 2003 11 20.72 | | S | 7.0 | TI | 11.4 | L | 5 | 20 | 15 | 2/ | 0.1 | 65 | SAN07 |
| 2003 11 20.73 | | S | 7.4 | TK | 5.0 | B | | 10 | 14 | 2/ | | | GUZ |

Comet 2P/Encke [cont.]

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|----|----|------|----|------|---|----|-----|------|----|------|-----|-------|
| 2003 11 20.74 | | S | 7.3 | TI | 27.0 | L | 6 | 60 | 9 | 2 | | | TOTO3 |
| 2003 11 20.77 | | S | 7.3 | HV | 20.3 | T | 10 | 50 | 7 | 2 | | | KAM01 |
| 2003 11 20.77 | | S | 8.3 | TI | 8.0 | B | | 12 | 7 | 2 | | | SER02 |
| 2003 11 20.79 | | S | 6.8 | TT | 5.6 | B | | 10 | &23 | 1/ | | | BUS01 |
| 2003 11 20.88 | | S | 8.5 | AC | 8.0 | B | | 20 | 6 | 2 | | | KES02 |
| 2003 11 21.54 | | S | 8.9 | HD | 6 | R | 10 | 30 | 2.5 | 2 | | | SEM02 |
| 2003 11 21.70 | | S | 6.8 | AA | 5.0 | B | 6 | 7 | 40 | 0 | | | KOS |
| 2003 11 21.74 | | S | 7.2 | HV | 20.3 | T | 10 | 50 | 7 | 2 | | | KAM01 |
| 2003 11 21.76 | | S | 7.3 | TK | 5.0 | B | | 10 | 12 | 3 | | | GUZ |
| 2003 11 22.01 | | B | 7.9 | AC | 10.0 | B | 4 | 20 | 5 | 4 | | | NOW |
| 2003 11 22.40 | x | B | 7.6 | TJ | 8.0 | B | | 11 | 17 | 2 | | | NAG08 |
| 2003 11 22.43 | x | S | 7.5 | HS | 7.0 | B | | 10 | 10 | 2 | | | MOM |
| 2003 11 22.68 | | S | 7.3 | TK | 5.0 | B | | 10 | 12 | 3 | | | GUZ |
| 2003 11 22.70 | | S | 7.9 | AA | 8.0 | B | | 30 | 13 | 3 | | | BAL08 |
| 2003 11 22.78 | | S | 6.8 | TT | 5.6 | B | | 10 | &23 | 2 | | | BUS01 |
| 2003 11 22.78 | | S | 8.2 | AA | 6.0 | B | | 20 | 8 | 1/ | | | BAL04 |
| 2003 11 23.12 | | B | 8.0 | TK | 8.0 | B | | 11 | 13 | 3/ | 0.12 | 290 | WAR01 |
| 2003 11 23.12 | | S | 7.1 | TJ | 5.0 | B | | 10 | 14 | 1/ | | | MOR |
| 2003 11 23.22 | | S | 7.3 | TK | 37 | L | 3 | 60 | 7 | 3 | | | LINO4 |
| 2003 11 23.39 | x | B | 7.6 | TJ | 8.0 | B | | 11 | 15 | 2 | | | NAG08 |
| 2003 11 23.43 | x | M | 6.6 | TT | 3.5 | B | | 7 | 20 | 2 | | | TSU02 |
| 2003 11 23.67 | | S | 7.8 | AA | 5.0 | B | | 10 | 7 | s2 | 2.5 | | SAJ |
| 2003 11 23.70 | | S | 6.8 | AA | 5.0 | R | 7 | 20 | 18 | 2 | | | SAN07 |
| 2003 11 23.73 | | B | 7.3 | TK | 5.0 | B | | 10 | 16.7 | 3 | | | HAS02 |
| 2003 11 24.10 | | S | 7.2 | TJ | 5.0 | B | | 10 | 15 | 1 | | | MOR |
| 2003 11 24.70 | | S | 7.1 | TK | 5.0 | B | | 10 | 11 | 4 | | | GUZ |
| 2003 11 24.73 | | S | 6.8 | VB | 8.0 | B | | 20 | 10 | 3 | | | SHA02 |
| 2003 11 24.78 | | S | 6.7 | TT | 5.6 | B | | 10 | &22 | 2 | | | BUS01 |
| 2003 11 25.42 | x | S | 7.8 | TK | 10.0 | B | | 20 | 6 | 2 | | | YOS02 |
| 2003 11 25.73 | | S | 6.6 | TI | 5.0 | B | | 10 | 15 | 1 | | | SAN07 |
| 2003 11 25.77 | | B | 7.8 | TI | 8.0 | B | | 11 | 6 | 3 | | | LAB02 |
| 2003 11 25.78 | | S | 6.6 | TT | 5.6 | B | | 10 | &22 | 2/ | | | BUS01 |
| 2003 11 25.80 | | S | 6.9 | TK | 5.0 | B | | 7 | 15 | 2 | | | GON05 |
| 2003 11 25.83 | | S | 7.0 | AC | 6.0 | B | | 7 | &20 | 3 | | | RES |
| 2003 11 26.10 | | M | 6.8 | TJ | 8.0 | B | | 20 | 14 | 3 | | | MOR |
| 2003 11 26.10 | | S | 6.8 | TJ | 5.0 | B | | 10 | 17 | 2 | | | MOR |
| 2003 11 26.72 | | S | 6.8 | HV | 6.3 | B | | 9 | 11 | 2/ | | | KAM01 |
| 2003 11 26.73 | | S | 6.8 | VB | 5.0 | B | | 10 | 13 | 3 | | | SHA02 |
| 2003 11 26.82 | | S | 6.7 | AC | 6.0 | B | | 7 | &20 | 3 | | | RES |
| 2003 11 27.10 | | M | 6.8 | TJ | 5.0 | B | | 10 | | 2 | | | MOR |
| 2003 11 27.10 | | M | 6.8 | TJ | 8.0 | B | | 20 | | 3 | | | MOR |
| 2003 11 27.70 | | S | 6.8 | TK | 5.0 | B | | 10 | 12 | 4 | | | GUZ |
| 2003 11 27.71 | | S | 7.2 | TK | 20.3 | L | 6 | 63 | 8 | 4 | | | GUZ |
| 2003 11 27.74 | | S | 6.7 | VB | 5.0 | B | | 10 | 15 | 3 | | | SHA02 |
| 2003 11 27.75 | | S | 8.0 | TI | 12.7 | L | 12 | 77 | 8 | 1 | | | SZA02 |
| 2003 11 27.78 | | S | 6.5: | TT | 5.6 | B | | 10 | &17 | 2/ | | | BUS01 |
| 2003 11 27.82 | | S | 6.8 | AC | 6.0 | B | | 7 | &20 | 3 | | | RES |
| 2003 11 28.11 | | S | 7.9: | TK | 8.0 | B | | 11 | 8 | 4 | | | WAR01 |
| 2003 11 28.71 | | S | 6.8 | TK | 5.0 | B | | 10 | 12 | 4 | | | GUZ |
| 2003 11 28.77 | | S | 6.7 | TT | 5.0 | B | | 10 | 14 | 1 | | | RIE |
| 2003 11 30.69 | | S | 7.6 | AA | 6.0 | B | | 20 | 8 | 4 | | | CSU |
| 2003 11 30.70 | | S | 6.6 | TK | 5.0 | B | | 10 | 11 | 4 | | | GUZ |
| 2003 12 01.69 | | S | 6.6 | TK | 5.0 | B | | 10 | 12 | 4 | | | GUZ |
| 2003 12 02.38 | x | S | 7.9 | TJ | 15.0 | B | | 25 | 6 | 2 | | | MIT |
| 2003 12 02.67 | | S | 6.0: | AA | 5.0 | B | | 10 | | 2 | 2 | 35 | SAJ |
| 2003 12 02.67 | | S | 6.0: | AA | 5.0 | B | | 10 | | 2 | 2.0 | 35 | SAJ |
| 2003 12 03.08 | | M | 6.7 | TJ | 8.0 | B | | 20 | 8 | 3 | | | MOR |
| 2003 12 03.37 | xa | S | 7.2 | TJ | 10.0 | B | | 20 | 8 | 3 | | | NAG08 |
| 2003 12 03.51 | | S | 7.5 | HD | 6 | R | 10 | 30 | 2.0 | 3 | | | SEM02 |
| 2003 12 04.08 | | M | 6.7 | TJ | 8.0 | B | | 20 | 8 | 3 | | | MOR |
| 2003 12 06.71 | a | S | 6.0: | TT | 8.0 | B | | 15 | &12 | | | | SCH04 |
| 2003 12 07.67 | | M | 6.1 | TT | 10 | B | 4 | 25 | 10 | 3 | | | LEH |
| 2003 12 07.67 | | S | 7.0: | TK | 20.3 | L | 6 | 63 | & 5 | 4 | | | GUZ |
| 2003 12 07.70 | | S | 6.4 | TK | 5.0 | B | | 7 | 9 | 5/ | | | DIJ |
| 2003 12 07.70 | a | S | 6.2: | TT | 7.8 | R | 4 | 12 | & 5 | 5/ | | | BUS01 |

Comet 2P/Encke [cont.]

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|------|---|----|-----|------|----|------|----|-------|
| 2003 12 07.71 | | S | 6.5 | TK | 8.0 | B | | 15 | 7 | 4/ | | | BOU |
| 2003 12 07.74 | ! | S | 6.3 | TK | 8.0 | B | | 20 | 10 | 3 | | | SHA02 |
| 2003 12 08.71 | | S | 6.5 | TK | 15.6 | L | 5 | 29 | 6 | 4 | | | BOU |
| 2003 12 08.71 | | S | 6.5 | TK | 15.6 | L | 5 | 29 | 7 | 4/ | | | DIJ |
| 2004 01 04.30 | | B | 7.5 | TK | 8.0 | B | | 20 | | 8 | | | AM001 |

Comet 29P/Schwassmann-Wachmann

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|-------|----|------|---|----|-----|-------|----|------|----|-------|
| 2003 06 24.99 | | S | [12.7 | HS | 20.3 | L | 6 | 108 | ! 0.5 | | | | GUZ |
| 2003 06 27.99 | | S | [13.0 | HS | 20.3 | L | 6 | 108 | ! 0.5 | | | | GUZ |
| 2003 07 02.01 | | S | [13.2 | HS | 20.3 | L | 6 | 108 | ! 0.5 | | | | GUZ |
| 2003 07 03.00 | | S | [13.6 | HS | 20.3 | L | 6 | 108 | ! 0.5 | | | | GUZ |
| 2003 07 20.91 | | S | [12.5 | HS | 20.3 | L | 6 | 108 | ! 0.5 | | | | GUZ |
| 2003 07 24.95 | | S | 12.8 | HS | 20.3 | L | 6 | 108 | 0.7 | 4 | | | GUZ |
| 2003 07 25.96 | | S | [13.0 | HS | 27.0 | L | 6 | 214 | ! 1.0 | | | | TOT03 |
| 2003 07 27.93 | | S | [13.2 | HS | 20.3 | L | 6 | 108 | ! 0.5 | | | | GUZ |
| 2003 07 27.94 | | S | [13.4 | HS | 27.0 | L | 6 | 214 | ! 0.5 | | | | TOT03 |
| 2003 08 06.02 | | S | [13.5 | HS | 20.3 | L | 6 | 108 | ! 0.5 | | | | GUZ |
| 2003 08 23.87 | | S | 13.4 | TI | 25.0 | T | 5 | 140 | 2 | s3 | | | SCA02 |
| 2003 08 24.93 | | S | 13.3 | TI | 25.0 | T | 5 | 140 | 2 | s3 | | | SCA02 |
| 2003 08 25.94 | | S | 12.5 | SK | 31.0 | J | 6 | 143 | 0.8 | 4 | | | BOU |
| 2003 08 25.95 | | S | 12.4 | SK | 31.0 | J | 6 | 143 | 0.8 | 2/ | | | DIJ |
| 2003 08 25.98 | | S | 12.6 | HS | 20.3 | L | 6 | 63 | 0.8 | 5 | | | GUZ |
| 2003 08 28.92 | | S | 13.1 | TI | 20.0 | T | 6 | 50 | 2 | s4 | | | SCA02 |
| 2003 09 01.90 | | S | 13.0 | TI | 20.0 | T | 6 | 63 | 1.5 | s2 | | | SCA02 |
| 2003 09 01.91 | | S | 12.4 | SK | 31.0 | J | 6 | 89 | 1.4 | 1/ | | | BOU |
| 2003 09 01.91 | | S | 12.7 | SK | 31.0 | J | 6 | 89 | 0.9 | 0/ | | | DIJ |
| 2003 09 02.89 | | S | 12.5 | SK | 25.4 | J | 6 | 88 | 1.4 | 1 | | | BOU |
| 2003 09 02.89 | | S | 12.6 | SK | 25.4 | J | 6 | 88 | 1.0 | 0/ | | | DIJ |
| 2003 09 02.95 | | S | 12.9 | HS | 27.0 | L | 6 | 120 | 1.2 | 2 | | | TOT03 |
| 2003 09 03.87 | | S | 13.2 | HS | 27.0 | L | 6 | 120 | 1.2 | 1 | | | TOT03 |
| 2003 09 06.00 | | S | 12.7 | HS | 20.3 | L | 6 | 63 | 1.5 | 2 | | | GUZ |
| 2003 09 07.02 | | S | 12.8 | HS | 20.3 | L | 6 | 63 | 1.5 | 2 | | | GUZ |
| 2003 09 18.85 | | S | 13.2 | HS | 27.0 | L | 6 | 167 | 1.0 | 2 | | | TOT03 |
| 2003 09 20.87 | | S | 13.3 | HS | 27.0 | L | 6 | 120 | 1.0 | 2 | | | TOT03 |
| 2003 09 21.92 | | S | 12.8 | HS | 20.3 | L | 6 | 63 | 2 | 0/ | | | GUZ |
| 2003 09 23.83 | | S | 12.6 | SK | 25.4 | J | 6 | 115 | 1.5 | 1 | | | BOU |
| 2003 09 23.83 | | S | 12.7 | SK | 25.4 | J | 6 | 115 | 1.3 | 0/ | | | DIJ |
| 2003 09 24.86 | | S | 13.7 | HS | 27.0 | L | 6 | 120 | 1.0 | 2/ | | | TOT03 |
| 2003 09 24.89 | | S | 12.4 | SK | 31.0 | J | 6 | 109 | 1.8 | 1 | | | BOU |
| 2003 09 24.90 | | S | 12.6 | SK | 31.0 | J | 6 | 109 | 1.3 | 1 | | | DIJ |
| 2003 09 25.94 | | S | 13.0 | HS | 20.3 | L | 6 | 63 | 1.6 | 0/ | | | GUZ |
| 2003 09 26.81 | | S | 13.0 | HS | 27.0 | L | 6 | 83 | 0.7 | s5 | | | TOT03 |
| 2003 09 28.78 | | S | 12.1 | TK | 20.3 | L | 6 | 63 | 0.8 | 6 | | | GUZ |
| 2003 09 29.87 | | S | 11.9 | AC | 30.5 | T | 10 | 117 | 1.8 | 1 | | | COM |
| 2003 09 29.91 | | S | 12.4 | SK | 31.0 | J | 6 | 109 | 1 | 3/ | | | DIJ |
| 2003 09 29.91 | | S | 12.5 | SK | 31.0 | J | 6 | 109 | 1.0 | 3/ | | | BOU |
| 2003 09 30.82 | | S | 12.4 | TK | 20.3 | L | 6 | 63 | 1 | 4 | | | GUZ |
| 2003 09 30.91 | | S | 13.1 | HS | 27.0 | L | 6 | 83 | 1.0 | 4 | | | TOT03 |
| 2003 10 18.80 | | S | [13.5 | HS | 20.3 | L | 6 | 63 | ! 0.5 | | | | GUZ |
| 2003 10 18.83 | | S | 13.3 | HN | 31.0 | J | 6 | 124 | 1.4 | 1/ | | | BOU |
| 2003 10 18.83 | | S | 13.6 | HN | 31.0 | J | 6 | 124 | 1.0 | 0/ | | | DIJ |
| 2003 10 28.83 | | S | [13.7 | HS | 27.0 | L | 6 | 214 | ! 0.5 | | | | TOT03 |
| 2003 11 12.71 | | S | [13.5 | HS | 27.0 | L | 6 | 214 | ! 0.5 | | | | TOT03 |
| 2003 11 20.75 | | S | [13.5 | HS | 27.0 | L | 6 | 214 | ! 0.5 | | | | TOT03 |

Comet 43P/Wolf-Harrington

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|-------|----|------|---|----|-----|-------|----|------|----|-------|
| 2003 09 02.98 | | S | [13.4 | HS | 27.0 | L | 6 | 214 | ! 0.5 | | | | TOT03 |
| 2003 09 03.90 | | S | [13.5 | HS | 27.0 | L | 6 | 214 | ! 1.0 | | | | TOT03 |
| 2003 09 06.01 | | S | [13.5 | HS | 20.3 | L | 6 | 63 | ! 0.5 | | | | GUZ |
| 2003 09 18.86 | | S | 13.5 | HS | 27.0 | L | 6 | 214 | 0.7 | 1 | | | TOT03 |
| 2003 09 20.88 | | S | 13.5 | HS | 27.0 | L | 6 | 214 | 0.7 | 1 | | | TOT03 |

Comet 43P/Wolf-Harrington [cont.]

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|--------|----|------|---|----|-----|-------|----|------|----|-------|
| 2003 09 21.93 | | S | 13.7: | HS | 20.3 | L | 6 | 108 | 0.5 | 2 | | | GUZ |
| 2003 09 24.88 | | S | 13.7 | HS | 27.0 | L | 6 | 167 | 1.0 | 2/ | | | TOT03 |
| 2003 09 25.97 | | S | 13.6: | HS | 20.3 | L | 6 | 108 | 0.6 | 2 | | | GUZ |
| 2003 09 26.09 | | S | 13.8 | AC | 31.0 | J | 6 | 143 | 0.7 | 4 | | | BOU |
| 2003 09 29.92 | | S | 13.8 | AC | 31.0 | J | 6 | 143 | 0.6 | 4 | | | BOU |
| 2003 09 29.93 | | S | 14.3 | AC | 31.0 | J | 6 | 143 | 0.6 | 4 | | | DIJ |
| 2003 10 18.83 | | S | 13.5: | HS | 20.3 | L | 6 | 108 | 0.6 | 2 | | | GUZ |
| 2003 10 18.84 | | S | 13.5 | AC | 31.0 | J | 6 | 143 | 0.8 | 4 | | | DIJ |
| 2003 10 18.84 | | S | 13.7 | AC | 31.0 | J | 6 | 143 | 0.7 | 3/ | | | BOU |
| 2003 10 23.84 | | S | 13.6 | AC | 31.0 | J | 6 | 143 | 0.8 | 4 | | | BOU |
| 2003 10 23.85 | | S | 13.4 | AC | 31.0 | J | 6 | 143 | 1.1 | 4 | | | DIJ |
| 2003 10 24.86 | | S | 13.6 | AC | 31.0 | J | 6 | 143 | 0.7 | 4 | | | BOU |
| 2003 10 26.93 | | S | 13.5 | AC | 31.0 | J | 6 | 143 | 0.8 | 3/ | | | BOU |
| 2003 10 28.76 | | S | 13.3 | HS | 20.3 | L | 6 | 108 | 0.8 | 3 | | | GUZ |
| 2003 10 28.85 | | S | 13.2 | HS | 27.0 | L | 6 | 167 | 0.7 | 3 | | | TOT03 |
| 2003 11 12.46 | | S | 13.3 | LM | 25.4 | L | 4 | 114 | | | | | SEA |
| 2003 11 12.73 | | S | 13.1 | HS | 27.0 | L | 6 | 167 | 0.8 | 3 | | | TOT03 |
| 2003 11 14.79 | | S | 13.2 | HS | 20.3 | L | 6 | 108 | 0.8 | 3 | | | GUZ |
| 2003 11 26.93 | | S | [12.5: | HS | 30 | R | 20 | 185 | | | | | SHA02 |
| 2003 11 27.80 | | S | [13.0 | HS | 30 | R | 20 | 230 | | | | | SHA02 |
| 2003 12 14.50 | | S | 12.4 | HS | 25.4 | T | 6 | 128 | 0.9 | 4 | | | YOS04 |
| 2003 12 15.76 | | S | 13.3: | VB | 30 | R | 20 | 230 | 0.3 | 3 | | | SHA02 |
| 2003 12 16.50 | x | S | 12.5 | HS | 25.4 | L | 4 | 113 | 1.4 | 3/ | | | YOS02 |
| 2003 12 16.91 | | S | 12.5 | TK | 20.3 | T | 10 | 100 | 1 | 3 | | | GON05 |
| 2003 12 17.76 | | S | 13.6: | VB | 30 | R | 20 | 300 | 0.7 | 3 | | | SHA02 |
| 2003 12 18.71 | | S | 12.8 | HS | 27.0 | L | 6 | 120 | 0.8 | 2/ | | | TOT03 |
| 2003 12 18.77 | | S | 13.0 | AC | 40.6 | L | 5 | 121 | 1.0 | 3 | | | RES |
| 2003 12 18.82 | | S | 12.7 | SK | 31.0 | J | 6 | 109 | 1.1 | 4 | | | BOU |
| 2003 12 18.83 | | S | 12.8 | SK | 31.0 | J | 6 | 109 | 1.0 | 2/ | | | DIJ |
| 2003 12 19.69 | | S | 12.9 | AC | 40.6 | L | 5 | 121 | 1.2 | 3 | | | RES |
| 2003 12 20.81 | | S | 12.7 | TI | 23.5 | T | 10 | 188 | 1 | 2 | | | LAB02 |
| 2003 12 23.48 | x | S | 12.8 | HS | 32.0 | L | 5 | 87 | 1.2 | 4 | | | NAG08 |
| 2003 12 26.73 | | S | 12.8 | HS | 27.0 | L | 6 | 167 | 1.2 | 2 | | | TOT03 |
| 2004 01 15.49 | | S | [12.0 | HS | 25.4 | T | 6 | 128 | ! 1.1 | | | | YOS04 |
| 2004 01 19.90 | | S | 12.6 | TK | 20.3 | T | 10 | 100 | 1.5 | 3 | | | GON05 |
| 2004 01 23.46 | | S | 11.7 | AU | 25.4 | T | 6 | 128 | 0.9 | 3 | | | YOS04 |
| 2004 01 24.83 | a | S | 12.3 | AC | 25.4 | J | 6 | 88 | 1.4 | 3 | | | BOU |
| 2004 01 24.84 | a | S | 11.5 | AC | 25.4 | J | 6 | 88 | 1 | 1/ | | | DIJ |
| 2004 01 24.86 | | S | [12.5 | HS | 30 | R | 20 | 230 | | | | | SHA02 |

Comet 53P/Van Biesbroeck

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|-------|----|------|---|----|-----|-------|----|------|----|-------|
| 2003 05 29.89 | | S | [13.0 | HS | 27.0 | L | 6 | 214 | ! 0.5 | | | | TOT03 |
| 2003 06 04.89 | | S | 13.1 | HS | 27.0 | L | 6 | 167 | 0.7 | 2/ | | | TOT03 |
| 2003 06 21.92 | | S | 13.2 | HS | 27.0 | L | 6 | 120 | 0.7 | 4 | | | TOT03 |
| 2003 06 24.90 | | S | 13.5: | HS | 20.3 | L | 6 | 108 | 0.5 | 4 | | | GUZ |
| 2003 06 25.90 | | S | 13.2 | HS | 27.0 | L | 6 | 120 | 0.6 | 2/ | | | TOT03 |
| 2003 07 02.88 | | S | 13.4: | HS | 20.3 | L | 6 | 108 | 0.5 | 4 | | | GUZ |
| 2003 07 02.96 | | S | 13.7 | HS | 35 | L | 5 | 237 | 1.0 | 2/ | | | HOR02 |
| 2003 10 13.44 | | S | [14.0 | HS | 28 | T | 10 | 310 | ! 1 | | | | MAT08 |

Comet 65P/Gunn

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|------|---|----|-----|------|----|------|----|-------|
| 2003 07 27.90 | | S | 12.1 | HS | 27.0 | L | 6 | 167 | 0.8 | 1 | | | TOT03 |
| 2003 10 13.46 | | S | 13.9 | HS | 28 | T | 10 | 310 | 0.8 | 3 | | | MAT08 |

Comet 66P/du Toit

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|-------|----|-----|---|----|-----|------|----|------|----|-------|
| 2003 10 13.45 | | S | [13.0 | HS | 28 | T | 10 | 133 | ! 1 | | | | MAT08 |

Comet 116P/Wild

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|-------|----|------|---|----|-----|------|----|------|----|-------|
| 2003 05 03.90 | | S | 11.3 | HS | 27.0 | L | 6 | 83 | 1.7 | 3/ | | | TOTO3 |
| 2003 06 24.89 | | S | [11.5 | TT | 20.3 | L | 6 | 63 | ! 1 | | | | GUZ |

Comet 153P/Ikeya-Zhang

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|------|---|----|-----|------|-----|------|-------|-------|
| 2002 03 11.76 | | B | 4.7 | AC | 5.0 | B | | 10 | 7 | 6 | 4 | 70 | UHR |
| 2002 03 26.78 | | B | 3.7 | AC | 5.0 | B | | 10 | 8 | 7 | 1.5 | 25 | UHR |
| 2002 03 30.77 | | B | 3.6 | AC | 5.0 | B | | 10 | 9 | 6 | 3 | 25 | UHR |
| 2002 04 30.87 | | S | 4.2 | TI | 0.0 | E | | 1 | | | | | SCA02 |
| 2002 05 01.89 | | S | 4.5 | TI | 0.0 | E | | 1 | | | | | SCA02 |
| 2002 05 03.83 | | S | 4.6 | TI | 5.0 | B | | 7 | 20 | s6 | 3 | 270 | SCA02 |
| 2002 05 05.85 | | S | 4.7 | TI | 5.0 | B | | 7 | 15 | s6/ | 2.5 | 270 | SCA02 |
| 2002 05 09.84 | | S | 5.2 | TI | 5.0 | B | | 7 | 15 | s5 | 1 | 250 | SCA02 |
| 2002 05 10.85 | | S | 5.1 | TI | 5.0 | B | | 7 | 20 | s5/ | 1 | 240 | SCA02 |
| 2002 05 14.85 | | S | 5.1 | TI | 5.0 | B | | 7 | 25 | s4/ | 2 | 220 | SCA02 |
| 2002 05 15.79 | | S | 5.3 | TI | 5.0 | B | | 7 | 15 | s4 | | | SCA02 |
| 2002 05 16.90 | | S | 5.0 | TI | 5.0 | B | | 7 | &25 | s5/ | 2.5 | 230 | SCA02 |
| 2002 05 17.84 | | S | 5.1 | TI | 5.0 | B | | 7 | 30 | s5/ | 2.5 | 225 | SCA02 |
| 2002 05 21.84 | | S | 5.4 | TI | 5.0 | B | | 7 | 15 | s5/ | 1 | 210 | SCA02 |
| 2002 05 22.81 | | S | 5.8 | TI | 5.0 | B | | 7 | 10 | s3 | | | SCA02 |
| 2002 05 25.81 | | S | 5.7 | TI | 5.0 | B | | 7 | &10 | s4 | | | SCA02 |
| 2002 05 27.82 | | S | 5.9 | TI | 5.0 | B | | 7 | & 8 | s5 | 1.5 | 200 | SCA02 |
| 2002 05 28.81 | | S | 5.9 | TI | 5.0 | B | | 7 | &10 | s4/ | 2 | 210 | SCA02 |
| 2002 05 29.82 | | S | 5.9 | TI | 5.0 | B | | 7 | &12 | s4 | 1.5 | 210 | SCA02 |
| 2002 05 30.82 | | S | 6.0 | TI | 5.0 | B | | 7 | 10 | s4/ | 1 | 200 | SCA02 |
| 2002 05 31.89 | | S | 6.1 | TI | 5.0 | B | | 7 | &15 | s4/ | 2 | 200 | SCA02 |
| 2002 06 02.83 | | S | 6.0 | TI | 5.0 | B | | 7 | &20 | s4 | 1 | 195 | SCA02 |
| 2002 06 03.83 | | S | 6.2 | TI | 5.0 | B | | 7 | &15 | s3 | | | SCA02 |
| 2002 06 05.89 | | S | 6.3 | TI | 5.0 | B | | 7 | &25 | s3 | 4 | 290 | SCA02 |
| 2002 06 06.83 | | S | 6.5 | TI | 5.0 | B | | 7 | &15 | s3 | 2 | 300 | SCA02 |
| 2002 06 08.84 | | S | 6.5 | TI | 5.0 | B | | 7 | &20 | s4 | 2.5 | 300 | SCA02 |
| 2002 06 09.83 | | S | 6.5 | TI | 5.0 | B | | 7 | 20 | s4 | 2 | 310 | SCA02 |
| 2002 06 12.86 | | S | 6.8 | TI | 5.0 | B | | 7 | 20 | s7 | 1 | 310 | SCA02 |
| 2002 06 13.87 | | S | 6.8 | TI | 5.0 | B | | 7 | 10 | s5/ | 1 | 320 | SCA02 |
| 2002 06 14.86 | | S | 7.0 | TI | 5.0 | B | | 7 | 8 | s4/ | 1 | 320 | SCA02 |
| 2002 06 15.84 | | S | 7.1 | TI | 5.0 | B | | 7 | 6 | s3/ | | | SCA02 |
| 2002 06 16.84 | | S | 7.2 | TI | 5.0 | B | | 7 | 8 | s3/ | 1 | 340 | SCA02 |
| 2002 06 17.82 | | S | 7.4 | TI | 5.0 | B | | 7 | 5 | s2 | | | SCA02 |
| 2002 06 18.82 | | S | 7.5 | TI | 5.0 | B | | 7 | 7 | s1 | | | SCA02 |
| 2002 06 26.83 | | S | 7.9 | TI | 5.0 | B | | 7 | 6 | s3 | | | SCA02 |
| 2002 06 27.87 | | S | 8.0 | TI | 5.0 | B | | 7 | 5 | s3 | | | SCA02 |
| 2002 06 28.84 | | S | 8.3 | TI | 20.3 | T | 10 | 70 | 8 | s3 | 30 | m 350 | SCA02 |
| 2002 06 28.86 | | S | 8.1 | TI | 5.0 | B | | 7 | 4 | s2/ | | | SCA02 |
| 2002 06 29.85 | | S | 8.0 | TI | 5.0 | B | | 7 | 10 | s3 | 1 | 350 | SCA02 |
| 2002 07 01.87 | | S | 8.2 | TI | 5.0 | B | | 7 | 6 | s2 | | | SCA02 |
| 2002 07 04.86 | | S | 8.7 | TI | 20.3 | T | 10 | 70 | 8 | s3 | 20 | m 350 | SCA02 |
| 2002 07 05.86 | | S | 8.8 | TI | 20.3 | T | 10 | 70 | 7 | s2/ | 30 | m 350 | SCA02 |
| 2002 07 06.83 | | S | 8.5 | TI | 20.3 | T | 10 | 70 | 8 | s3 | 30 | m 350 | SCA02 |
| 2002 07 06.84 | | S | 8.1 | TI | 5.0 | B | | 7 | 10 | s2/ | 0.5 | 350 | SCA02 |
| 2002 07 07.84 | | S | 8.5 | TI | 20.3 | T | 10 | 70 | 8 | s3 | 25 | m 340 | SCA02 |
| 2002 07 07.85 | | S | 8.1 | TI | 5.0 | B | | 7 | 9 | s2 | | | SCA02 |
| 2002 07 08.84 | | S | 8.4 | TI | 20.3 | T | 10 | 70 | 9 | s2/ | 20 | m 330 | SCA02 |
| 2002 07 08.85 | | S | 8.2 | TI | 5.0 | B | | 7 | 9 | s2 | | | SCA02 |
| 2002 07 09.83 | | S | 8.6 | TI | 20.3 | T | 10 | 70 | 10 | s2 | | | SCA02 |
| 2002 07 09.84 | | S | 8.2 | TI | 5.0 | B | | 7 | 10 | s2 | | | SCA02 |
| 2002 07 11.82 | | S | 8.4 | TI | 20.3 | T | 10 | 70 | 10 | s2 | 0.5 | 320 | SCA02 |
| 2002 07 11.83 | | S | 8.0 | TI | 5.0 | B | | 7 | 10 | s1 | | | SCA02 |
| 2002 07 12.84 | | S | 8.3 | TI | 5.0 | B | | 7 | 10 | s1 | | | SCA02 |
| 2002 07 13.83 | | S | 8.4 | TI | 5.0 | B | | 7 | 9 | s1 | | | SCA02 |
| 2002 07 14.83 | | S | 8.5 | TI | 5.0 | B | | 7 | 9 | s1 | | | SCA02 |

Comet 157P/Tritton

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|-------|----|------|---|----|-----|-------|----|------|----|-------|
| 2003 10 08.17 | | M | 11.8 | HN | 25.4 | J | 6 | 72 | 1.3 | 6/ | | | BOU |
| 2003 10 08.18 | | M | 12.0 | HN | 25.4 | J | 6 | 72 | 1.3 | 5 | | | DIJ |
| 2003 10 25.14 | | S | 12.8 | AC | 31.0 | J | 6 | 109 | 1.6 | 3 | | | BOU |
| 2003 10 25.14 | | S | 13.0: | HS | 20.3 | L | 6 | 108 | 1 | 2 | | | GUZ |
| 2003 11 03.15 | | S | [13.3 | HS | 27.0 | L | 6 | 167 | ! 1.0 | | | | TOT03 |
| 2003 11 06.18 | | S | 13.2 | AC | 31.0 | J | 6 | 143 | 1.2 | 2 | | | BOU |
| 2003 11 09.08 | | S | 12.8 | HS | 27.0 | L | 6 | 120 | 1.0 | 3 | | | TOT03 |

Comet C/2001 HT_50 (LINEAR-NEAT)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|------|---|----|-----|------|----|------|----|-------|
| 2003 08 26.06 | | S | 11.9 | TK | 20.3 | L | 6 | 63 | 1.2 | 3 | | | GUZ |
| 2003 09 02.10 | | S | 12.6 | TK | 31.0 | J | 6 | 109 | 1.0 | 3 | | | BOU |
| 2003 09 02.10 | | S | 12.7 | TK | 31.0 | J | 6 | 109 | 0.9 | 2 | | | DIJ |
| 2003 09 04.09 | | S | 12.6 | TK | 31.0 | J | 6 | 109 | 1.1 | 3 | | | BOU |
| 2003 09 07.04 | | S | 11.8 | TK | 20.3 | L | 6 | 63 | 1.5 | 3 | | | GUZ |
| 2003 09 21.96 | | M | 11.9 | TK | 20.3 | L | 6 | 63 | 2 | 4 | | | GUZ |
| 2003 09 24.93 | | S | 12.3 | HS | 27.0 | L | 6 | 83 | 1.5 | 4 | | | TOT03 |
| 2003 09 25.96 | | S | 11.8 | TK | 20.3 | L | 6 | 63 | 2 | 3 | | | GUZ |
| 2003 09 26.12 | | M | 12.1 | TK | 31.0 | J | 6 | 89 | 1.9 | 4 | | | BOU |
| 2003 10 08.13 | | M | 11.8 | SK | 25.4 | J | 6 | 88 | 1.8 | 4 | | | BOU |
| 2003 10 08.14 | | M | 12.0 | SK | 25.4 | J | 6 | 88 | 2.0 | 4 | | | DIJ |
| 2003 10 18.85 | | S | 11.7 | TK | 20.3 | L | 6 | 63 | 2 | 3 | | | GUZ |
| 2003 10 18.88 | | S | 11.5 | TK | 31.0 | J | 6 | 89 | 2.2 | 3/ | | | BOU |
| 2003 10 18.89 | | S | 11.5 | TK | 31.0 | J | 6 | 89 | 2.3 | 2 | | | DIJ |
| 2003 10 18.95 | | S | 10.9 | TK | 41 | T | 10 | 160 | 0.6 | 6 | | | ST003 |
| 2003 10 19.85 | | S | 11.6 | TK | 20.3 | L | 6 | 63 | 2 | 4 | | | GUZ |
| 2003 10 21.89 | | S | 11.5 | TK | 25.4 | J | 6 | 72 | 2.0 | 3/ | | | BOU |
| 2003 10 23.90 | | M | 11.6 | TK | 31.0 | J | 6 | 72 | 2.0 | 5/ | | | BOU |
| 2003 10 23.90 | | S | 12.0 | TK | 31.0 | J | 6 | 72 | 2.1 | 5/ | | | DIJ |
| 2003 10 24.83 | | S | 11.5 | TK | 20.3 | L | 6 | 63 | 2 | 4 | | | GUZ |
| 2003 10 24.95 | | S | 11.5 | HS | 27.0 | L | 6 | 120 | 1.3 | 5 | | | TOT03 |
| 2003 10 25.13 | | M | 11.7 | TK | 31.0 | J | 6 | 72 | 2.0 | 6 | | | BOU |
| 2003 10 26.92 | | M | 11.5 | TK | 31.0 | J | 6 | 89 | 1.8 | 5/ | | | BOU |
| 2003 10 27.89 | | S | 11.4 | TK | 31.0 | J | 6 | 72 | 1.5 | 2 | | | DIJ |
| 2003 10 27.90 | | M | 11.5 | TK | 31.0 | J | 6 | 72 | 2.5 | 5/ | | | BOU |
| 2003 10 27.94 | | S | 11.5 | TT | 20.0 | L | 4 | 80 | & 3 | 2 | | | SCH04 |
| 2003 10 27.96 | | S | 11.3 | TK | 20.3 | L | 6 | 63 | 2 | 4 | | | GUZ |
| 2003 10 28.86 | | S | 11.2 | HS | 27.0 | L | 6 | 167 | 1.3 | 4 | | | TOT03 |
| 2003 10 28.96 | | S | 12.0 | HS | 34.0 | L | 5 | 80 | 1.5 | 2 | | | SZA |
| 2003 11 02.01 | | B | 11.7 | TI | 23.5 | T | 10 | 94 | 2 | 3 | | | LAB02 |
| 2003 11 06.15 | | S | 11.5 | TK | 31.0 | J | 6 | 109 | 2.0 | 4/ | | | BOU |
| 2003 11 09.06 | | S | 11.2 | HS | 27.0 | L | 6 | 167 | 1.2 | 3 | | | TOT03 |
| 2003 11 12.83 | | S | 11.6 | HS | 30 | R | 20 | 185 | 0.4 | 4 | | | SHA02 |
| 2003 11 14.00 | | S | 11.5 | TK | 14.3 | L | 6 | 80 | | | | | AM001 |
| 2003 11 14.81 | | S | 11.3 | TK | 20.3 | L | 6 | 63 | 2 | 4 | | | GUZ |
| 2003 11 15.82 | | S | 11.5 | TK | 25.4 | J | 6 | 72 | 2.5 | 4 | | | BOU |
| 2003 11 16.99 | | S | 11.6 | TK | 30 | R | 20 | 185 | 0.7 | 3 | | | SHA02 |
| 2003 11 17.59 | x | S | 11.2 | HS | 32.0 | L | 5 | 58 | 1.7 | 5 | | | NAG08 |
| 2003 11 20.03 | | S | 11.6 | TK | 14.3 | L | 6 | 80 | 0.7 | 6 | | | AM001 |
| 2003 11 20.78 | | S | 10.8 | HS | 11.4 | L | 6 | 50 | 1.5 | 3/ | | | SAN07 |
| 2003 11 22.55 | x | S | 11.7 | HS | 32.0 | L | 5 | 58 | 1.2 | 6 | | | NAG08 |
| 2003 11 22.65 | | S | 10.6 | TJ | 25.4 | T | 6 | 67 | 2.0 | 5 | | | YOS04 |
| 2003 11 22.70 | x | S | 12.1 | HS | 31.7 | L | 6 | 63 | 1.0 | 3/ | | | MIY01 |
| 2003 11 22.96 | | S | 12.1 | TK | 41 | T | 10 | 160 | 0.5 | 6 | | | ST003 |
| 2003 11 23.43 | x | S | 11.8 | HS | 32.0 | L | 5 | 87 | 1.1 | 6 | | | NAG08 |
| 2003 11 23.74 | | S | 12.4 | HS | 44.0 | L | 5 | 156 | 1.0 | 4 | | | HAS02 |
| 2003 11 25.45 | x | M | 12.0 | HS | 25.4 | L | 4 | 81 | 1.5 | D6 | | | YOS02 |
| 2003 11 26.89 | | S | 12.7 | VB | 33 | L | 5 | 100 | 0.7 | 5 | | | SHA02 |
| 2003 11 26.92 | | S | 12.6 | VB | 30 | R | 20 | 185 | 0.8 | 5 | | | SHA02 |
| 2003 11 27.77 | | S | 12.5 | VB | 33 | L | 5 | 150 | 0.7 | 3 | | | SHA02 |
| 2003 11 28.74 | | S | 11.8 | TK | 20.3 | L | 6 | 63 | 1.5 | 3 | | | GUZ |
| 2003 11 29.77 | | S | 11.2 | HS | 27.0 | L | 6 | 120 | 1.1 | 3 | | | TOT03 |
| 2003 12 02.62 | | S | 11.3 | TJ | 25.4 | T | 6 | 128 | 1.1 | 5 | | | YOS04 |
| 2003 12 07.71 | | M | 11.1 | TT | 42 | L | 5 | 81 | 1.5 | 4 | | | LEH |

Comet C/2001 HT_50 (LINEAR-NEAT) [cont.]

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|-------|----|------|---|----|-----|------|----|------|----|-------|
| 2003 12 10.75 | | M | 11.1 | TT | 42 | L | 5 | 81 | 1.6 | 4 | | | LEH |
| 2003 12 13.43 | x | S | 12.3 | HS | 32.0 | L | 5 | 87 | 1.3 | 5 | | | NAG08 |
| 2003 12 14.52 | | S | 11.3 | TJ | 25.4 | T | 6 | 128 | 1.1 | 5 | | | YOS04 |
| 2003 12 14.75 | | S | 11.6 | AC | 13.0 | L | 6 | 45 | 1 | 3 | | | RES |
| 2003 12 15.72 | | S | 11.7 | AC | 13.0 | L | 6 | 45 | 1 | 3/ | | | RES |
| 2003 12 15.77 | | S | 13.4: | VB | 30 | R | 20 | 230 | 0.4 | 2 | | | SHA02 |
| 2003 12 16.48 | | S | 12.7 | GA | 25.4 | L | 4 | 71 | | | | | SEA |
| 2003 12 16.48 | x | S | 12.0 | HS | 25.4 | L | 4 | 113 | 1.1 | 6 | | | YOS02 |
| 2003 12 16.71 | | S | 11.7 | AC | 13.0 | L | 6 | 45 | 1 | 3 | | | RES |
| 2003 12 16.86 | | S | 12.6 | HS | 27.0 | L | 6 | 120 | 0.8 | 2 | | | TOT03 |
| 2003 12 16.92 | | S | 11.8 | TK | 20.3 | T | 10 | 100 | 1.5 | 4 | | | GON05 |
| 2003 12 17.77 | | S | 13.0 | VB | 30 | R | 20 | 300 | 0.6 | 3 | | | SHA02 |
| 2003 12 17.81 | | S | 11.9 | TK | 25.4 | J | 6 | 88 | 2.5 | 0/ | | | DIJ |
| 2003 12 17.81 | | S | 12.0 | TK | 25.4 | J | 6 | 88 | 1.5 | 3/ | | | BOU |
| 2003 12 17.92 | | S | 11.4 | TK | 30.5 | T | 10 | 115 | 0.9 | 5 | | | KAM01 |
| 2003 12 18.72 | | S | 12.6 | HS | 27.0 | L | 6 | 167 | 0.8 | 3 | | | TOT03 |
| 2003 12 18.78 | | S | 12.2 | TK | 31.0 | J | 6 | 89 | 1.5 | 3/ | | | BOU |
| 2003 12 18.79 | | S | 11.9 | TK | 31.0 | J | 6 | 89 | 2.0 | 3 | | | DIJ |
| 2003 12 18.81 | | S | 12.0 | AC | 40.6 | L | 5 | 72 | 1.0 | 3 | | | RES |
| 2003 12 18.84 | | S | 11.6 | TK | 30.5 | T | 10 | 115 | 0.9 | 5 | | | KAM01 |
| 2003 12 19.75 | | S | 11.9 | AC | 40.6 | L | 5 | 72 | 1.5 | 3 | | | RES |
| 2003 12 20.40 | x | S | 12.2 | HS | 31.7 | L | 6 | 152 | 0.6 | 3/ | | | MIY01 |
| 2003 12 20.84 | | S | 11.6 | TI | 23.5 | T | 10 | 188 | 3 | 3 | | | LAB02 |
| 2003 12 23.45 | x | S | 12.5 | HS | 32.0 | L | 5 | 87 | 0.9 | 5 | | | NAG08 |
| 2003 12 23.75 | | M | 11.5 | TT | 42 | L | 5 | 81 | 1.6 | 4 | | | LEH |
| 2003 12 23.84 | | S | 12.4 | HS | 30 | L | 5 | 100 | 1 | 3 | | | NEV |
| 2003 12 23.89 | | S | 12.7 | HS | 27.0 | L | 6 | 120 | 0.7 | 3 | | | TOT03 |
| 2003 12 26.76 | | S | 13.0 | HS | 27.0 | L | 6 | 167 | 0.8 | 4 | | | TOT03 |
| 2003 12 28.85 | | S | 13.2 | TK | 30 | R | 20 | 300 | 0.5 | 4 | | | SHA02 |
| 2004 01 11.47 | | S | 12.7 | AU | 25.4 | L | 4 | 113 | 1.1 | 6 | | | YOS02 |
| 2004 01 11.88 | | S | 12.2 | TK | 20.3 | T | 10 | 100 | 1.5 | 3 | | | GON05 |
| 2004 01 22.82 | | S | 12.8 | HS | 30 | L | 5 | 100 | 0.8 | 2 | | | NEV |

Comet C/2001 K5 (LINEAR)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|-------|----|------|---|----|-----|------|----|------|----|-------|
| 2003 06 24.97 | | S | 13.5: | HS | 20.3 | L | 6 | 108 | 0.5 | 4 | | | GUZ |
| 2003 07 02.90 | | S | 13.5: | HS | 20.3 | L | 6 | 108 | 0.5 | 5 | | | GUZ |
| 2003 07 27.82 | | S | 13.6 | HS | 27.0 | L | 6 | 167 | 0.6 | | | | TOT03 |
| 2003 09 24.84 | | S | 14.5 | AC | 31.0 | J | 6 | 177 | 0.4 | 3/ | | | BOU |
| 2003 09 24.84 | | S | 14.7: | AC | 31.0 | J | 6 | 177 | 0.7 | 2 | | | DIJ |

Comet C/2001 Q4 (NEAT)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|-------|------|------|---|----|-----|------|----|------|-----|-------|
| 2003 10 13.48 | | S | 11.5 | TK | 28 | T | 10 | 133 | 1 | 6 | 0.03 | 312 | MAT08 |
| 2003 10 16.59 | | S | 11.4 | TK | 28 | T | 10 | 133 | 1 | 6 | | | MAT08 |
| 2003 10 22.51 | | S | 11.5 | TK | 28 | T | 10 | 133 | 1 | 6 | 0.03 | 330 | MAT08 |
| 2003 10 29.67 | | S | 11.3 | TK | 28 | T | 10 | 133 | 1 | 6 | | | MAT08 |
| 2003 11 03.27 | | S | 11.1 | TK | 14.3 | L | 6 | 80 | 1 | 4 | | | AM001 |
| 2003 11 03.94 | | S | 10.6: | TJ | 20 | T | 10 | 100 | | 1 | | | SOU01 |
| 2003 11 04.06 | | S | 11.1: | TK | 14.3 | L | 6 | 80 | | 3 | | | AM001 |
| 2003 11 11.43 | | S | 10.4 | LM | 10.0 | B | | 25 | 2 | | | | SEA |
| 2003 11 11.47 | | S | 11.1 | TK | 28 | T | 10 | 133 | 1 | 6 | 0.03 | 0 | MAT08 |
| 2003 11 13.98 | | S | 11.0 | TK | 14.3 | L | 6 | 80 | 1 | 5 | | | AM001 |
| 2003 11 14.43 | | S | 10.3 | LM | 10.0 | B | | 25 | | | | | SEA |
| 2003 11 14.52 | | S | 11.3 | TK | 28 | T | 10 | 133 | 1.5 | 6 | | | MAT08 |
| 2003 11 18.06 | | S | 11.0 | TK | 14.3 | L | 6 | 80 | 1 | 2 | | | AM001 |
| 2003 11 19.22 | | S | 10.8: | TK | 14.3 | L | 6 | 80 | | | | | AM001 |
| 2003 11 20.02 | | S | 10.6 | TK | 14.3 | L | 6 | 80 | 1 | 2 | | | AM001 |
| 2003 11 26.54 | | S | 10.2 | AA | 10.0 | B | | 25 | | | | | SEA |
| 2003 11 27.45 | | S | 10.2 | AA | 10.0 | B | | 25 | | | | | SEA |
| 2003 11 29.08 | | S | 11.0: | TK | 14.3 | L | 6 | 80 | 1 | 3 | | | AM001 |
| 2003 12 03.71 | | S | 10 | : LM | 5.0 | B | | 10 | | | | | SEA |
| 2003 12 10.43 | | S | 9.9 | AA | 10.0 | B | | 25 | | | | | SEA |

Comet C/2001 Q4 (NEAT) [cont.]

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|------|---|----|-----|------|----|------|----|-------|
| 2003 12 14.51 | | S | 9.8 | AA | 10.0 | B | | 25 | | | | | SEA |
| 2003 12 15.46 | | S | 9.9 | AA | 10.0 | B | | 25 | | | | | SEA |
| 2003 12 17.47 | | M | 9.7 | AA | 10.0 | B | | 25 | | | | | SEA |
| 2003 12 18.49 | | S | 9.8 | AA | 10.0 | B | | 25 | | | | | SEA |
| 2003 12 19.45 | | B | 9.9 | AA | 10.0 | B | | 25 | | | | | SEA |
| 2003 12 22.09 | | S | 9.8 | TK | 14.3 | L | 6 | 80 | 1 | 4 | | | AM001 |
| 2003 12 22.45 | | S | 9.7 | AA | 10.0 | B | | 25 | | | | | SEA |
| 2003 12 25.50 | | B | 9.7 | AA | 10.0 | B | | 25 | | | | | SEA |
| 2003 12 28.14 | | S | 10.0 | TK | 14.3 | L | 6 | 80 | 1 | 3 | | | AM001 |
| 2003 12 30.47 | | S | 9.4 | AA | 10.0 | B | | 25 | | | | | SEA |
| 2004 01 04.20 | | S | 10.0 | TK | 14.3 | L | 6 | 80 | | | | | AM001 |
| 2004 01 06.00 | | S | 9.6 | TK | 14.3 | L | 6 | 80 | 1 | 5 | | | AM001 |
| 2004 01 09.45 | | S | 9.2 | AA | 8.0 | B | | 15 | | | | | SEA |
| 2004 01 10.46 | | S | 9.0 | AA | 5.0 | B | | 10 | | | | | SEA |
| 2004 01 11.98 | | S | 9.0 | TK | 8.0 | B | | 20 | 2 | 5 | | | AM001 |
| 2004 01 12.99 | | S | 8.9 | TK | 8.0 | B | | 20 | 2 | 5 | | | AM001 |
| 2004 01 14.02 | | S | 9.0 | TK | 14.3 | L | 6 | 35 | | | | | AM001 |
| 2004 01 19.47 | | S | 8.6: | AA | 10.0 | B | | 25 | | | | | SEA |
| 2004 01 20.44 | | S | 8.8 | AA | 10.0 | B | | 25 | & 4 | | | | SEA |
| 2004 01 25.47 | | S | 8.5 | AA | 3.5 | B | | 6 | | | | | SEA |

Comet C/2001 RX_14 (LINEAR)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|------|---|----|-----|------|----|------|----|-------|
| 2002 11 18.04 | | S | 11.8 | TI | 25.0 | T | 5 | 45 | 1 | s6 | | | SCA02 |
| 2002 11 29.01 | | S | 11.6 | TI | 25.0 | T | 5 | 60 | 2 | s5 | 4 | m | SCA02 |
| 2002 12 11.95 | | S | 11.5 | TI | 20.0 | T | 10 | 100 | 2 | s4 | | | SCA02 |
| 2003 04 04.88 | | M | 10.9 | TK | 13 | L | 8 | 69 | 2.6 | 3 | | | HOR02 |
| 2003 04 20.78 | | S | 11.5 | HS | 11.4 | L | 6 | 50 | 3 | 1 | | | SAN07 |
| 2003 05 03.86 | | S | 12.0 | HS | 27.0 | L | 6 | 83 | 2.0 | 1/ | | | TOT03 |
| 2003 05 05.88 | | S | 12.2 | HS | 27.0 | L | 6 | 120 | 1.2 | 1 | | | TOT03 |
| 2003 05 23.89 | | S | 13.1 | HS | 27.0 | L | 6 | 83 | 0.4 | 3 | | | TOT03 |
| 2003 05 29.89 | | S | 13.2 | HS | 27.0 | L | 6 | 167 | 0.6 | | | | TOT03 |

Comet C/2002 CE_10 (LINEAR)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|--------|----|------|---|----|-----|-------|----|------|----|-------|
| 2003 09 24.87 | | a | I 15.1 | AC | 31.0 | J | 6 | 177 | | 9 | | | DIJ |
| 2003 09 24.87 | | a | I 15.4 | AC | 31.0 | J | 6 | 177 | | 9 | | | BOU |
| 2003 10 17.74 | | S | [14.9 | HS | 27.0 | L | 6 | 214 | ! 0.0 | | | | TOT03 |

Comet C/2002 O4 (Hoenig)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|-----|---|----|-----|------|-----|------|-----|-------|
| 2002 08 06.96 | | S | 7.7 | TI | 5.0 | B | | 7 | 20 | s5/ | 0.5 | 260 | SCA02 |
| 2002 08 07.83 | | S | 7.8 | TI | 5.0 | B | | 7 | 15 | s5 | | | SCA02 |
| 2002 08 08.93 | | S | 7.4 | TI | 5.0 | B | | 20 | 18 | s5 | 1 | 260 | SCA02 |
| 2002 08 09.96 | | S | 7.2 | TI | 5.0 | B | | 20 | 13 | s5/ | 1 | 260 | SCA02 |
| 2002 08 13.07 | | S | 7.0 | TI | 5.0 | B | | 7 | 15 | s4/ | 1.5 | 230 | SCA02 |
| 2002 08 13.87 | | S | 7.0 | TI | 5.0 | B | | 7 | 15 | s5/ | 2 | 220 | SCA02 |
| 2002 08 14.88 | | S | 7.0 | TI | 5.0 | B | | 7 | 12 | s7 | 2 | 210 | SCA02 |
| 2002 08 15.88 | | S | 7.2 | TI | 5.0 | B | | 7 | 14 | s6/ | 2 | 210 | SCA02 |
| 2002 08 17.85 | | S | 7.1 | TI | 5.0 | B | | 7 | 14 | s6 | 1 | 200 | SCA02 |
| 2002 08 18.01 | | S | 7.3 | TI | 5.0 | B | | 7 | 13 | s6 | 1 | 200 | SCA02 |
| 2002 08 18.87 | | S | 6.9 | TI | 5.0 | B | | 7 | 15 | s6/ | 1 | 200 | SCA02 |
| 2002 08 19.88 | | S | 6.8 | TI | 5.0 | B | | 7 | 15 | s5/ | 0.8 | 180 | SCA02 |
| 2002 08 23.79 | | S | 7.1 | TI | 5.0 | B | | 7 | 12 | s5/ | | | SCA02 |
| 2002 08 24.83 | | S | 7.2 | TI | 5.0 | B | | 7 | 12 | s5 | | | SCA02 |
| 2002 08 25.87 | | S | 7.4 | TI | 5.0 | B | | 7 | 10 | s4/ | | | SCA02 |
| 2002 08 26.81 | | S | 7.3 | TI | 5.0 | B | | 7 | 12 | s5 | | | SCA02 |
| 2002 08 27.94 | | S | 7.4 | TI | 5.0 | B | | 7 | 10 | s4 | | | SCA02 |
| 2002 08 30.79 | | S | 7.4 | TI | 5.0 | B | | 7 | 12 | s5 | 0.5 | 80 | SCA02 |
| 2002 09 01.93 | | S | 7.2 | TI | 5.0 | B | | 7 | 12 | s5 | 0.8 | 60 | SCA02 |
| 2002 09 02.81 | | S | 7.3 | TI | 5.0 | B | | 7 | 10 | s5/ | 0.5 | 50 | SCA02 |
| 2002 09 03.82 | | S | 7.4 | TI | 5.0 | B | | 7 | 10 | s4 | | | SCA02 |

Comet C/2002 04 (Hoenig) [cont.]

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|-----|---|----|-----|------|----|------|----|-------|
| 2002 09 05.81 | | S | 7.4 | TI | 5.0 | B | | 7 | 12 | | s4 | | SCA02 |
| 2002 09 06.78 | | S | 7.5 | TI | 5.0 | B | | 7 | 10 | | s4 | | SCA02 |
| 2002 09 09.79 | | S | 7.3 | TI | 5.0 | B | | 7 | 13 | | s5 | | SCA02 |

Comet C/2002 06 (SWAN)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|-----|---|----|-----|------|----|------|----|-------|
| 2002 08 16.11 | | S | 6.3: | SC | 5.0 | B | | 10 | & 5 | | 3 | | KAN05 |

Comet C/2002 07 (LINEAR)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|------|---|----|-----|------|----|------|----|-------|
| 2003 05 03.87 | | S | 13.2 | HS | 27.0 | L | 6 | 167 | 0.7 | | 3 | | TOT03 |
| 2003 05 23.88 | | S | 13.2 | HS | 27.0 | L | 6 | 83 | 0.7 | | 2 | | TOT03 |
| 2003 06 16.89 | | S | 12.0 | HS | 35 | L | 5 | 68 | 1.3 | | 2/ | | HOR02 |
| 2003 06 17.91 | | S | 11.8 | HS | 35 | L | 5 | 68 | 1.5 | | 2/ | | HOR02 |

Comet C/2002 T7 (LINEAR)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|-------|----|------|---|----|-----|-------|----|------|----------|-------|
| 2001 01 14.14 | | M | 8.0 | TJ | 8.0 | B | | 20 | 8 | | 4/ | | MOR |
| 2001 01 16.22 | | M | 7.9 | TJ | 8.0 | B | | 20 | 8 | | 4 | | MOR |
| 2001 01 20.16 | | M | 7.8 | TJ | 8.0 | B | | 20 | 8 | | 4 | | MOR |
| 2003 08 06.05 | | S | 12.5 | HS | 20.3 | L | 6 | 108 | ! 0.5 | | | | GUZ |
| 2003 08 26.05 | | S | 12.6 | TK | 20.3 | L | 6 | 63 | 0.8 | | 2 | | GUZ |
| 2003 09 02.09 | | M | 12.6 | AC | 31.0 | J | 6 | 109 | 0.8 | | 4 | | DIJ |
| 2003 09 02.09 | | M | 12.7 | AC | 31.0 | J | 6 | 109 | 0.8 | | 6/ | | BOU |
| 2003 09 03.00 | | S | 13.0 | HS | 27.0 | L | 6 | 167 | 0.4 | | 6 | | TOT03 |
| 2003 09 04.08 | | M | 12.6 | AC | 31.0 | J | 6 | 109 | 0.8 | | 5/ | | BOU |
| 2003 09 06.02 | | S | 12.4: | TK | 20.3 | L | 6 | 63 | 0.7 | | 4 | | GUZ |
| 2003 09 07.03 | | M | 12.4 | TK | 20.3 | L | 6 | 63 | 0.6 | | 5 | | GUZ |
| 2003 09 21.95 | | M | 12.1 | TK | 20.3 | L | 6 | 63 | 0.6 | | 6 | | GUZ |
| 2003 09 24.94 | | S | 12.0 | HS | 27.0 | L | 6 | 120 | 0.8 | | 6 | | TOT03 |
| 2003 09 24.95 | | S | 12.3 | TK | 31.0 | J | 6 | 109 | 1.0 | | 5 | | BOU |
| 2003 09 24.97 | | M | 12.4 | TK | 31.0 | J | 6 | 109 | 1.2 | | 4 | | DIJ |
| 2003 09 25.95 | | M | 11.9 | TK | 20.3 | L | 6 | 63 | 0.6 | | 6 | | GUZ |
| 2003 09 26.11 | | M | 12.1 | TK | 31.0 | J | 6 | 109 | 1.0 | | 6 | | BOU |
| 2003 09 29.97 | | M | 11.8 | TK | 31.0 | J | 6 | 89 | 1.1 | | 5 | | DIJ |
| 2003 09 29.97 | | M | 11.9 | TK | 31.0 | J | 6 | 89 | 0.9 | | 6 | | BOU |
| 2003 09 30.13 | | S | 12.3 | AC | 30.5 | T | 10 | 117 | 1.0 | | 5 | | COM |
| 2003 09 30.95 | | S | 11.7 | HS | 27.0 | L | 6 | 214 | 1.2 | | D7 | | TOT03 |
| 2003 10 08.14 | | M | 11.5 | TK | 25.4 | J | 6 | 88 | 1.5 | | 5 | | DIJ |
| 2003 10 08.14 | | M | 11.8 | TK | 25.4 | J | 6 | 88 | 1.0 | | 6 | | BOU |
| 2003 10 17.86 | | S | 11.7 | TK | 30 | L | 4 | 96 | 0.3 | | 6 | 0.3m 343 | ABB |
| 2003 10 18.84 | | M | 11.4 | TK | 20.3 | L | 6 | 63 | 0.8 | | 5 | | GUZ |
| 2003 10 18.85 | | M | 11.3 | TK | 31.0 | J | 6 | 109 | 1.3 | | 5 | | DIJ |
| 2003 10 18.85 | | M | 11.4 | TK | 31.0 | J | 6 | 109 | 1.0 | | 6 | | BOU |
| 2003 10 18.92 | | S | 10.5 | TK | 41 | T | 10 | 160 | 0.6 | | 6 | | ST003 |
| 2003 10 18.92 | | S | 10.7 | TK | 30 | L | 4 | 96 | 0.4 | | 6 | | ABB |
| 2003 10 19.84 | | M | 11.2 | TK | 20.3 | L | 6 | 63 | 0.8 | | 6 | | GUZ |
| 2003 10 21.87 | | M | 11.3 | TK | 25.4 | J | 6 | 72 | 1.1 | | 6 | | BOU |
| 2003 10 23.88 | | M | 11.3 | TK | 31.0 | J | 6 | 72 | 0.9 | | 5 | | DIJ |
| 2003 10 23.88 | | M | 11.3 | TK | 31.0 | J | 6 | 72 | 1.2 | | 6/ | | BOU |
| 2003 10 23.93 | | S | 11.0 | TK | 30 | L | 4 | 96 | 0.4 | | 6 | 0.4m 338 | ABB |
| 2003 10 23.94 | | S | 11.1 | TT | 20.0 | L | 4 | 42 | 1 | | 3 | | SCH04 |
| 2003 10 24.82 | | M | 11.1 | TK | 20.3 | L | 6 | 63 | 0.8 | | 6 | | GUZ |
| 2003 10 24.89 | | M | 11.2 | TK | 31.0 | J | 6 | 72 | 1.3 | | 6/ | | BOU |
| 2003 10 24.98 | | S | 11.2 | HS | 27.0 | L | 6 | 83 | 0.8 | | 6 | | TOT03 |
| 2003 10 26.83 | | S | 10.4 | TK | 10.0 | B | | 25 | 1.9 | | 4 | | HAS02 |
| 2003 10 26.89 | | S | 10.9 | TT | 20.0 | L | 4 | 42 | & 1.5 | | 3 | | SCH04 |
| 2003 10 26.93 | | M | 11.0 | TK | 31.0 | J | 6 | 89 | 1.2 | | 6 | | BOU |
| 2003 10 27.90 | | M | 10.9 | TK | 31.0 | J | 6 | 89 | 1.2 | | 6/ | | BOU |
| 2003 10 27.91 | | M | 11.3 | TK | 31.0 | J | 6 | 89 | 0.7 | | 5 | | DIJ |
| 2003 10 27.94 | | S | 10.9 | TT | 20.0 | L | 4 | 42 | & 1.5 | | 3 | | SCH04 |
| 2003 10 27.95 | | M | 10.8 | TK | 20.3 | L | 6 | 63 | 1.0 | | 7 | | GUZ |

Comet C/2002 T7 (LINEAR) [cont.]

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|-------|----|------|---|----|-----|-------|----|------|-----|-------|
| 2003 10 27.96 | | S | 11.0 | TK | 30 | L | 4 | 96 | 0.5 | 5 | 0.3m | 355 | ABB |
| 2003 10 28.88 | | M | 10.9 | TK | 15.6 | L | 5 | 45 | 1.5 | 7 | | | BOU |
| 2003 10 28.88 | | S | 10.9 | TK | 15.6 | L | 5 | 45 | 1.8 | 5 | | | DIJ |
| 2003 10 28.88 | | S | 11.0 | HS | 27.0 | L | 6 | 83 | 1.0 | 5 | | | TOT03 |
| 2003 10 28.99 | | S | 11.2 | HS | 34.0 | L | 5 | 80 | 1 | 4 | 0.05 | 165 | SZA |
| 2003 10 29.85 | | S | 10.4 | TK | 15.6 | L | 5 | 36 | 1.2 | 5/ | | | DIJ |
| 2003 10 29.86 | | M | 10.8 | TK | 15.6 | L | 5 | 36 | 1.7 | 7 | | | BOU |
| 2003 10 30.81 | x | M | 11.3 | TT | 35.0 | C | 14 | 156 | 1.0 | 5 | | | TSU02 |
| 2003 10 31.96 | | B | 10.3 | TI | 23.5 | T | 10 | 94 | 2 | 6 | | | LAB02 |
| 2003 11 01.77 | | S | 11.0 | TK | 30 | R | 20 | 185 | 0.6 | 5 | | | SHA02 |
| 2003 11 01.98 | | B | 10.3 | TI | 23.5 | T | 10 | 94 | 2 | 7 | | | LAB02 |
| 2003 11 02.00 | | S | 10.5 | TI | 15.0 | M | | 27 | 2 | 6 | | | SER02 |
| 2003 11 02.46 | | S | 10.4 | TK | 37 | L | 3 | 172 | 1 | 7 | | | LIN04 |
| 2003 11 03.29 | | S | 10.6 | TK | 14.3 | L | 6 | 80 | 1.5 | 6 | | | AM001 |
| 2003 11 04.92 | | M | 11.0 | TT | 42 | L | 5 | 81 | 1.5 | 6 | | | LEH |
| 2003 11 05.01 | | S | 9.8 | PA | 6 | R | 10 | 30 | 0.5 | 1 | | | SEM02 |
| 2003 11 05.88 | | M | 11.0 | TT | 42 | L | 5 | 81 | 1.5 | 6/ | | | LEH |
| 2003 11 06.15 | | M | 10.5 | TK | 31.0 | J | 6 | 72 | 1.6 | 6/ | | | BOU |
| 2003 11 09.03 | | S | 11.4 | HS | 27.0 | L | 6 | 83 | 1.2 | 5 | | | TOT03 |
| 2003 11 09.05 | | S | 9.8 | TI | 25.0 | T | 5 | 48 | 4 | s5 | | | SCA02 |
| 2003 11 09.06 | | M | 10.0 | TK | 15.2 | L | 5 | 44 | 2.5 | 6 | | | GRA04 |
| 2003 11 11.73 | | M | 10.0: | TK | 20.3 | L | 6 | 63 | & 2 | 6 | | | GUZ |
| 2003 11 12.71 | | M | 10.2 | TK | 20.3 | L | 6 | 63 | 1.5 | 6 | | | GUZ |
| 2003 11 12.82 | | S | 10.8 | TK | 30 | R | 20 | 185 | 0.8 | 6 | | | SHA02 |
| 2003 11 13.39 | x | M | 10.1 | TJ | 32.0 | L | 5 | 58 | 1.3 | 7 | | | NAG08 |
| 2003 11 13.75 | | M | 10.1 | TK | 20.3 | L | 6 | 63 | 1.5 | 7 | | | GUZ |
| 2003 11 14.03 | | S | 10.3 | TK | 14.3 | L | 6 | 80 | 1 | 4 | | | AM001 |
| 2003 11 14.56 | | S | 10.0 | TK | 28 | T | 10 | 133 | 1 | 7 | | | MAT08 |
| 2003 11 14.80 | | M | 9.9 | TK | 20.3 | L | 6 | 63 | 1.8 | 7 | | | GUZ |
| 2003 11 14.82 | | S | 9.7 | TI | 8.0 | R | 5 | 16 | 5 | s6 | | | SCA02 |
| 2003 11 15.80 | | M | 9.9 | TK | 25.4 | J | 6 | 58 | 1.8 | 7 | | | BOU |
| 2003 11 16.01 | | S | 9.6: | PA | 6 | R | 10 | 30 | 1.2 | 1 | | | SEM02 |
| 2003 11 16.07 | % | B | 10.7 | TJ | 25.4 | L | 4 | 38 | & 1 | 7 | | | GRE |
| 2003 11 16.08 | | S | 10.2 | TJ | 5.0 | B | | 12 | & 3.7 | 3/ | | | GRE |
| 2003 11 16.08 | | S | 10.3 | TJ | 8.0 | B | | 20 | & 2.8 | 6/ | | | GRE |
| 2003 11 16.91 | | S | 9.8 | TT | 5.6 | B | | 10 | & 2 | | | | BUS01 |
| 2003 11 16.94 | | S | 10.0 | TK | 30 | L | 4 | 60 | 0.7 | 7 | 1.3m | 138 | ABB |
| 2003 11 17.00 | | S | 10.2 | TK | 30 | R | 20 | 185 | 1.1 | 6 | | | SHA02 |
| 2003 11 17.09 | | S | 9.9 | TK | 10 | B | | 25 | 1.3 | 5 | | | SHA02 |
| 2003 11 17.47 | x | M | 9.7 | TT | 10.0 | B | | 26 | | | | | TSU02 |
| 2003 11 17.57 | x | M | 10.0 | TJ | 32.0 | L | 5 | 58 | 1.2 | 6/ | | | NAG08 |
| 2003 11 17.86 | | S | 10.1 | TK | 20.3 | T | 10 | 77 | 3 | 6 | | | GON05 |
| 2003 11 17.88 | | S | 10.1 | TK | 10.0 | B | | 25 | 3 | 7 | | | GON05 |
| 2003 11 17.93 | | M | 9.9 | TK | 7.0 | R | 7 | 24 | 2.5 | 6 | | | GRA04 |
| 2003 11 18.07 | | S | 9.8 | TK | 14.3 | L | 6 | 80 | 1 | 4 | | | AM001 |
| 2003 11 18.34 | | S | 9.8 | TK | 37 | L | 3 | 172 | 1 | 7 | 1.0m | 150 | LIN04 |
| 2003 11 18.80 | | B | 9.5 | TI | 23.5 | T | 10 | 67 | 2 | 6 | | | LAB02 |
| 2003 11 18.87 | | S | 9.7 | TT | 5.6 | B | | 10 | & 2 | | | | BUS01 |
| 2003 11 18.87 | | S | 10.2 | NP | 7.0 | B | | 10 | 1 | 6 | | | MAR02 |
| 2003 11 19.27 | | M | 9.8 | TJ | 8.0 | B | | 20 | 3 | 6 | | | MOR |
| 2003 11 19.40 | x | M | 9.8 | TJ | 10.0 | B | | 20 | 1.7 | 6 | | | NAG08 |
| 2003 11 19.75 | | S | 10.0: | HS | 11.4 | L | 6 | 50 | 3.5 | 5/ | | | SAN07 |
| 2003 11 19.78 | | S | 9.5 | TI | 25.0 | T | 5 | 48 | 5 | s6 | | | SCA02 |
| 2003 11 19.78 | | S | 10.2 | TK | 10.0 | B | | 25 | 3.8 | 4 | | | HAS02 |
| 2003 11 20.04 | | S | 9.8 | TK | 14.3 | L | 6 | 80 | 1.5 | 6 | | | AM001 |
| 2003 11 20.76 | | S | 9.5 | HS | 11.4 | L | 6 | 50 | 3 | 5/ | | | SAN07 |
| 2003 11 20.77 | | S | 9.7 | HS | 27.0 | L | 6 | 83 | 2.0 | 5 | 0.04 | 140 | TOT03 |
| 2003 11 20.87 | | S | 9.5: | HS | 5.0 | B | | 10 | 2.5 | 1/ | | | SAN07 |
| 2003 11 21.14 | | S | 9.8 | TK | 18 | L | | 50 | 1 | 3 | | | ARA |
| 2003 11 21.60 | | S | 9.5 | TJ | 25.4 | T | 6 | 67 | 1.6 | 7/ | ? | | YOS04 |
| 2003 11 22.45 | x | M | 9.8 | TJ | 10.0 | B | | 20 | 2 | 7 | | | NAG08 |
| 2003 11 22.55 | x | M | 9.5 | TK | 15.0 | L | 6 | 54 | 2 | 6 | | | MOM |
| 2003 11 22.63 | | S | 9.2 | TJ | 25.4 | T | 6 | 67 | 1.9 | 7 | ? | | YOS04 |
| 2003 11 22.68 | x | S | 10.0 | TJ | 31.7 | L | 6 | 63 | 0.8 | 6 | 1.7 | 130 | MIY01 |
| 2003 11 22.93 | | S | 10.6 | TK | 41 | T | 10 | 160 | 0.6 | 7 | 0.5m | 115 | ST003 |

Comet C/2002 T7 (LINEAR) [cont.]

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|------|---|----|-----|-------|-----|------|-----|-------|
| 2003 11 23.20 | | B | 10.3 | TJ | 25.4 | L | 4 | 38 | & 1.4 | 7 | | | GRE |
| 2003 11 23.20 | | S | 10.3 | TJ | 25.4 | L | 4 | 38 | & 1.4 | 7 | | | GRE |
| 2003 11 23.21 | | S | 10.3 | TJ | 10.0 | B | | 25 | & 1.8 | 4/ | | | GRE |
| 2003 11 23.22 | | B | 10.3 | TJ | 10.0 | B | | 25 | & 1.8 | 4/ | | | GRE |
| 2003 11 23.28 | | S | 9.9 | TK | 37 | L | 3 | 172 | 1.7 | 7 | 2.0m | 130 | LIN04 |
| 2003 11 23.44 | x | M | 9.9 | TT | 10.0 | B | | 26 | | | | | TSU02 |
| 2003 11 23.45 | x | M | 9.7 | TJ | 10.0 | B | | 20 | 2 | 7 | | | NAG08 |
| 2003 11 23.48 | x | M | 9.9 | TJ | 32.0 | L | 5 | 87 | 1.0 | 6/ | 5 m | 145 | NAG08 |
| 2003 11 23.74 | | B | 11.1 | TK | 44.0 | L | 5 | 63 | 0.6 | 5 | | | HAS02 |
| 2003 11 23.83 | | S | 9.5 | TI | 25.0 | T | 5 | 48 | 6 | s7 | 7 m | 110 | SCA02 |
| 2003 11 24.12 | | S | 9.8 | TK | 18 | L | | 50 | 1 | 3/ | | | ARA |
| 2003 11 24.19 | | M | 9.5 | TJ | 8.0 | B | | 20 | 5 | 5 | | | MOR |
| 2003 11 24.75 | | S | 9.4 | TK | 33 | L | 5 | 45 | 1.5 | 6 | | | SHA02 |
| 2003 11 24.85 | | S | 9.6 | TT | 5.6 | B | | 10 | & 2 | | | | BUS01 |
| 2003 11 25.48 | x | M | 9.6 | TK | 25.4 | L | 4 | 46 | 1.3 | 6 | 2 m | 120 | YOS02 |
| 2003 11 25.83 | | S | 9.5 | TT | 5.6 | B | | 10 | & 3 | | | | BUS01 |
| 2003 11 25.83 | | S | 9.7 | TK | 10.0 | B | | 25 | 3 | 7 | | | GON05 |
| 2003 11 25.85 | | S | 9.7 | TK | 8.0 | B | | 11 | 2 | 8 | | | GON05 |
| 2003 11 25.91 | | S | 9.5 | TI | 23.5 | T | 10 | 94 | 2 | 7 | 1 m | 160 | LAB02 |
| 2003 11 25.95 | | M | 9.2 | TK | 5.0 | B | | 10 | 2.5 | 6 | | | GUZ |
| 2003 11 26.19 | | M | 9.3 | TJ | 8.0 | B | | 20 | 6 | 4 | | | MOR |
| 2003 11 26.87 | | S | 9.9 | TK | 33 | L | 5 | 45 | 1.5 | 5 | | | SHA02 |
| 2003 11 26.92 | | S | 10.1 | TK | 30 | L | 4 | 48 | 0.8 | 6 | 3.5m | 92 | ABB |
| 2003 11 27.20 | | M | 9.3 | TJ | 8.0 | B | | 20 | 6 | 4 | | | MOR |
| 2003 11 27.72 | | M | 9.5 | TK | 20.3 | L | 6 | 63 | 2.5 | 7 | | | GUZ |
| 2003 11 27.73 | | M | 9.2 | TK | 5.0 | B | | 10 | 3 | 6 | | | GUZ |
| 2003 11 27.78 | | S | 9.9 | TK | 33 | L | 5 | 45 | 1.1 | 6 | | | SHA02 |
| 2003 11 27.79 | | S | 10.0 | HS | 12.7 | L | 12 | 77 | 2.5 | D6 | 0.05 | 120 | SZA02 |
| 2003 11 27.84 | | S | 8.5 | HS | 16.0 | L | 6 | 83 | 3.6 | 6 | 0.1 | 120 | HAD01 |
| 2003 11 27.87 | | S | 9.4 | TT | 5.6 | B | | 10 | & 3 | | | | BUS01 |
| 2003 11 27.93 | | S | 9.3 | TK | 10 | B | | 25 | 3.8 | 4 | | | SHA02 |
| 2003 11 28.72 | | M | 9.4 | TK | 20.3 | L | 6 | 63 | 2.5 | 7 | | | GUZ |
| 2003 11 28.73 | | M | 9.2 | TK | 5.0 | B | | 10 | 3 | 7 | | | GUZ |
| 2003 11 29.07 | | S | 9.5 | TK | 14.3 | L | 6 | 35 | 1.5 | 6 | | | AMD01 |
| 2003 11 29.75 | | S | 9.5 | HS | 27.0 | L | 6 | 60 | 1.5 | 5 | 0.05 | 110 | TOT03 |
| 2003 11 29.99 | | M | 9.3 | TT | 10 | B | 4 | 25 | 2.5 | 6/ | | | LEH |
| 2003 12 01.08 | | S | 9.6 | TK | 18 | L | | 50 | 1 | 2 | | | ARA |
| 2003 12 01.79 | | S | 9.7 | TI | 8.0 | R | 5 | 16 | 5 | s6 | | | SCA02 |
| 2003 12 02.45 | | M | 9.3 | TJ | 8.0 | B | | 20 | 6 | 5 | | | MOR |
| 2003 12 02.62 | x | M | 9.4 | TJ | 15.0 | B | | 25 | 2 | 7 | | | MIT |
| 2003 12 02.64 | | S | 9.2 | TJ | 25.4 | T | 6 | 67 | 1.4 | s6 | 6 m | 100 | YOS04 |
| 2003 12 03.39 | x | M | 9.7 | TJ | 10.0 | B | | 20 | 3 | 6 | | | NAG08 |
| 2003 12 03.71 | | S | 9.3 | TI | 8.0 | R | 5 | 16 | 4 | s5/ | | | SCA02 |
| 2003 12 03.78 | | S | 8.9 | LA | 20.3 | T | 10 | 80 | 1.7 | 3 | | | NAV02 |
| 2003 12 07.71 | | S | 8.5 | TJ | 15.0 | R | 8 | 30 | 2 | 7 | | | DIE02 |
| 2003 12 07.73 | | M | 8.5 | TT | 10 | B | 4 | 25 | 3 | 6 | | | LEH |
| 2003 12 08.73 | | M | 9.3 | TK | 15.6 | L | 5 | 45 | 2.5 | 7 | | | BOU |
| 2003 12 08.73 | | S | 9.4 | TK | 15.6 | L | 5 | 45 | 3 | 5 | | | DIJ |
| 2003 12 08.74 | | M | 9.9 | TI | 27.0 | L | 6 | 83 | 0.8 | 4 | 0.02 | 90 | TOT03 |
| 2003 12 09.71 | | S | 8.5 | TJ | 15.0 | R | 8 | 30 | 2 | 7 | | | DIE02 |
| 2003 12 09.78 | | S | 8.5: | TK | 33 | L | 5 | 45 | 1.7 | 4 | | | SHA02 |
| 2003 12 10.37 | x | S | 9.7 | TJ | 15.0 | B | | 25 | 2 | 7 | | | MIT |
| 2003 12 10.69 | | M | 9.0 | TK | 20.3 | L | 6 | 63 | 2.5 | 6 | | | GUZ |
| 2003 12 10.71 | | S | 8.5 | TJ | 15.0 | R | 8 | 30 | 2 | 7 | | | DIE02 |
| 2003 12 10.76 | | S | 9.2 | TK | 10.0 | B | | 25 | 3 | 5 | | | GON05 |
| 2003 12 10.79 | | M | 8.5 | TT | 10 | B | 4 | 25 | 4 | 5/ | | | LEH |
| 2003 12 10.79 | | S | 8.6 | TI | 20.0 | T | 6 | 48 | 4 | s6 | | | SCA02 |
| 2003 12 10.89 | | B | 9.9 | TI | 23.5 | T | 10 | 94 | 2 | 4 | | | LAB02 |
| 2003 12 12.10 | | S | 9.0: | TJ | 8.0 | B | | 20 | | | | | MOR |
| 2003 12 12.41 | x | M | 8.9 | TJ | 10.0 | B | | 20 | 4 | 6 | | | NAG08 |
| 2003 12 12.41 | x | S | 10.2 | TJ | 31.7 | L | 6 | 63 | 1.7 | 5 | | | MIY01 |
| 2003 12 12.82 | | B | 9.9 | TI | 23.5 | T | 10 | 94 | 2 | 6 | | | LAB02 |
| 2003 12 13.43 | x | M | 9.3 | TJ | 15.0 | B | | 25 | 3 | 7 | | | MIT |
| 2003 12 13.44 | x | M | 9.0 | TJ | 8.0 | B | | 11 | 4 | 5 | | | NAG08 |
| 2003 12 13.80 | | S | 8.5 | TK | 8.0 | B | | 20 | 5 | 6 | | | SHA02 |

Comet C/2002 T7 (LINEAR) [cont.]

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|------|---|----|-----|------|----|------|----|-------|
| 2003 12 13.83 | | S | 9.9 | TK | 30 | L | 4 | 48 | 0.7 | 7 | 2 m | 95 | ABB |
| 2003 12 14.05 | | B | 8.4 | AC | 8.0 | B | | 15 | 2 | 2 | | | NOW |
| 2003 12 14.09 | | M | 8.9 | TJ | 8.0 | B | | 20 | 6 | 4 | | | MOR |
| 2003 12 14.14 | | S | 8.9 | TK | 5.0 | B | | 10 | 4 | 6 | | | LIN04 |
| 2003 12 14.54 | | S | 9.2 | TJ | 25.4 | T | 6 | 32 | 2.5 | 7 | 4.5m | 85 | YOS04 |
| 2003 12 14.71 | | S | 8.9 | AC | 13.0 | L | 6 | 45 | 2.1 | 4 | | | RES |
| 2003 12 14.81 | | S | 8.6 | TJ | 15.0 | R | 8 | 30 | 2 | 7 | | 85 | DIE02 |
| 2003 12 14.83 | | B | 10.1 | TI | 15.0 | M | | 27 | 1.5 | 5 | 1 m | 90 | SER02 |
| 2003 12 15.49 | | B | 8.9 | AA | 10.0 | B | | 25 | | | | | SEA |
| 2003 12 15.72 | | M | 8.9 | PA | 41 | L | 4 | 89 | 1 | 5/ | 7 m | 89 | SHU |
| 2003 12 15.72 | | S | 8.8 | AC | 13.0 | L | 6 | 45 | 2.8 | 5 | | | RES |
| 2003 12 15.72 | | S | 9.0 | AA | 6.0 | B | | 20 | 6 | 3 | | | CSU |
| 2003 12 15.74 | | S | 8.6 | TK | 33 | L | 5 | 45 | 5.5 | 6 | | | SHA02 |
| 2003 12 15.77 | | S | 8.9 | TK | 10.0 | B | | 25 | 4 | 5 | | | GON05 |
| 2003 12 15.79 | | S | 8.9 | TK | 8.0 | B | | 11 | 4 | 6 | | | GON05 |
| 2003 12 15.83 | | S | 9.1 | TK | 10.2 | M | 13 | 65 | 4 | 5 | 0.1 | 70 | GON05 |
| 2003 12 15.83 | | S | 9.3 | TK | 30 | L | 4 | 48 | 1.0 | 6 | 3.5m | 86 | ABB |
| 2003 12 15.92 | | S | 9.4 | TK | 18 | L | | 50 | 1 | 2/ | | | ARA |
| 2003 12 16.10 | | M | 8.9 | TJ | 8.0 | B | | 20 | 6 | 4 | | | MOR |
| 2003 12 16.58 | x | M | 9.3 | TJ | 10.0 | B | | 20 | 3 | 6 | | | NAG08 |
| 2003 12 16.81 | | S | 8.9 | TK | 10.0 | B | | 25 | 4 | 5 | 0.1 | 80 | GON05 |
| 2003 12 16.82 | | S | 8.9 | TK | 8.0 | B | | 11 | 4 | 6 | | | GON05 |
| 2003 12 16.85 | | S | 9.5 | TK | 20.3 | T | 10 | 77 | 3 | 5 | 0.2 | 80 | GON05 |
| 2003 12 16.86 | | M | 9.2 | TI | 27.0 | L | 6 | 83 | 1.5 | d5 | 0.05 | 90 | TOT03 |
| 2003 12 16.88 | | S | 8.9 | AC | 13.0 | L | 6 | 45 | 2.5 | 5 | | | RES |
| 2003 12 17.05 | | S | 8.7 | TK | 8.0 | B | | 20 | 3 | 3 | | | SHA02 |
| 2003 12 17.05 | | S | 8.8 | TK | 10 | B | | 25 | 3 | 5 | | | SHA02 |
| 2003 12 17.22 | | S | 8.4 | TK | 5.0 | B | | 10 | 6 | 6 | | | LIN04 |
| 2003 12 17.46 | | B | 8.8 | AA | 10.0 | B | | 25 | | | | | SEA |
| 2003 12 17.71 | | S | 9.0 | TI | 11.4 | L | 5 | 50 | 2 | s6 | 0.2 | 80 | SAN07 |
| 2003 12 17.75 | | S | 8.6 | TJ | 15.0 | R | 8 | 30 | 3 | 7 | | 85 | DIE02 |
| 2003 12 17.77 | | S | 9.0 | TT | 8.0 | B | | 15 | & 5 | 5 | | | SCH04 |
| 2003 12 17.78 | | S | 8.7 | TK | 33 | L | 5 | 45 | 1.6 | 5 | 2.5m | 95 | SHA02 |
| 2003 12 17.82 | | M | 8.8 | TK | 8.0 | B | | 15 | 4 | 6 | | | DIJ |
| 2003 12 17.82 | | M | 8.9 | TK | 8.0 | B | | 15 | 3.5 | 6 | | | BOU |
| 2003 12 17.83 | | S | 9.2 | TK | 30.5 | T | 10 | 56 | 2.5 | 5 | &0.1 | | COM |
| 2003 12 17.91 | | S | 9.6 | TK | 30.5 | T | 10 | 75 | 1.5 | s6 | 0.10 | 80 | KAM01 |
| 2003 12 17.94 | | S | 8.8 | TT | 8.0 | B | | 15 | 5 | 6 | | | RIE |
| 2003 12 17.98 | | S | 9.8 | TK | 30 | L | 4 | 48 | 0.6 | 7 | 1.8m | 95 | ABB |
| 2003 12 18.72 | | M | 9.0 | TI | 11.4 | L | 5 | 50 | 3 | s5 | 0.15 | 80 | SAN07 |
| 2003 12 18.72 | | M | 9.0 | TI | 27.0 | L | 6 | 60 | 2.0 | d6 | 0.12 | 90 | TOT03 |
| 2003 12 18.74 | | S | 8.9 | TK | 8.0 | B | | 20 | 4.0 | 4 | | | SHA02 |
| 2003 12 18.75 | | S | 8.6 | TJ | 15.0 | R | 8 | 30 | 3 | 7 | | 85 | DIE02 |
| 2003 12 18.77 | | S | 8.7 | TT | 5.0 | B | | 10 | 6 | 5 | | | RIE |
| 2003 12 18.78 | | S | 8.8 | TT | 7.8 | R | 4 | 12 | > 4 | 4 | | | BUS01 |
| 2003 12 18.79 | | B | 9.6 | TK | 10.0 | B | | 25 | 3.2 | 4 | | | HAS02 |
| 2003 12 18.79 | | S | 9.1 | TK | 30.5 | T | 10 | 56 | & 3 | 5/ | >0.1 | | COM |
| 2003 12 18.80 | | M | 8.8 | TK | 8.0 | B | | 15 | 4 | 5/ | | | DIJ |
| 2003 12 18.80 | | M | 8.8 | TK | 8.0 | B | | 15 | 5 | 5/ | | | BOU |
| 2003 12 18.81 | | S | 8.9 | AC | 40.6 | L | 5 | 72 | 2.5 | 5 | 20 m | 85 | RES |
| 2003 12 18.82 | | B | 9.5 | TI | 15.0 | M | | 27 | 2 | 5 | 5 m | 70 | SER02 |
| 2003 12 18.85 | | S | 9.3 | TK | 30.5 | T | 10 | 75 | 1.8 | s5 | 0.10 | 75 | KAM01 |
| 2003 12 19.09 | | M | 8.5 | TJ | 8.0 | B | | 20 | 9 | 4 | | | MOR |
| 2003 12 19.09 | | S | 8.5 | TK | 5.0 | B | | 10 | 6 | 6 | | | LIN04 |
| 2003 12 19.47 | | B | 8.7: | AA | 10.0 | B | | 25 | | | | | SEA |
| 2003 12 19.73 | | S | 8.8 | AA | 6.0 | B | | 20 | 4.5 | 3 | | | CSU |
| 2003 12 19.81 | | S | 8.6 | AC | 40.6 | L | 5 | 72 | 2.6 | 5/ | 10 m | 80 | RES |
| 2003 12 20.41 | x | S | 10.6 | TJ | 31.7 | L | 6 | 63 | 1.3 | 5 | 4.0m | 88 | MIY01 |
| 2003 12 20.47 | x | M | 9.1 | TK | 10.0 | B | | 20 | 3 | 6 | 5 m | 75 | YOS02 |
| 2003 12 20.79 | | S | 8.6 | AC | 13.0 | L | 6 | 45 | 2.5 | 5/ | | | RES |
| 2003 12 20.86 | | B | 8.7 | TI | 8.0 | B | | 11 | 3 | 7 | 6 m | 80 | LAB02 |
| 2003 12 20.87 | | S | 8.9 | TK | 8.0 | B | | 20 | 5 | 4 | | | SHA02 |
| 2003 12 20.95 | | M | 9.0 | TK | 30.5 | T | 10 | 56 | & 3 | 6 | &0.2 | | COM |
| 2003 12 20.96 | | S | 9.3 | TK | 18 | L | | 50 | 1 | 3/ | | | ARA |
| 2003 12 21.02 | | S | 8.5 | TK | 10.0 | B | | 25 | 5 | 5 | | | GON05 |

Comet C/2002 T7 (LINEAR) [cont.]

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|------|---|----|-----|------|----|-------|-----|-------|
| 2003 12 21.03 | | S | 8.6 | TK | 10.2 | M | 13 | 65 | 4 | 5 | | | GON05 |
| 2003 12 21.43 | x | M | 8.9 | TK | 10.0 | B | | 20 | 3 | 6 | 5 m | 70 | YOSO2 |
| 2003 12 21.44 | x | M | 9.2 | TK | 12.0 | R | 5 | 25 | 3 | 6 | 8 m | 110 | MOM |
| 2003 12 21.55 | x | M | 9.3 | TJ | 32.0 | L | 5 | 58 | 2.0 | 6 | 4 m | 80 | NAG08 |
| 2003 12 21.83 | | M | 8.7 | TK | 15.6 | L | 5 | 36 | 4 | 6 | | | BOU |
| 2003 12 21.84 | | M | 8.9 | TK | 15.6 | L | 5 | 36 | 3.5 | 5 | | | DIJ |
| 2003 12 21.87 | | S | 10.6 | TK | 41 | T | 10 | 70 | 0.8 | 6 | 3.6m | 80 | ST003 |
| 2003 12 21.94 | | S | 9.3 | TK | 18 | L | | 50 | 1 | 3 | | | ARA |
| 2003 12 21.95 | | S | 8.9: | TK | 8.0 | B | | 20 | 5 | 4 | | | SHA02 |
| 2003 12 22.27 | | M | 8.3 | TJ | 8.0 | B | | 20 | 7 | 4 | 0.33 | | MOR |
| 2003 12 22.46 | | S | 8.6 | AA | 5.0 | B | | 10 | | | | | SEA |
| 2003 12 22.74 | | S | 8.5 | TJ | 15.0 | R | 8 | 30 | 3 | 7 | | 90 | DIE02 |
| 2003 12 22.77 | | S | 8.6 | TK | 8.0 | B | | 15 | 4.5 | 5 | | | BOU |
| 2003 12 22.88 | | S | 8.7 | TT | 8.0 | B | | 15 | & 6 | 6 | | | SCH04 |
| 2003 12 23.38 | x | M | 8.9 | TJ | 15.0 | B | | 25 | 3.5 | 7 | | | MIT |
| 2003 12 23.45 | x | M | 9.1 | TK | 10.0 | B | | 20 | 3 | 5 | 7 m | 70 | YOSO2 |
| 2003 12 23.53 | x | M | 9.2 | TJ | 32.0 | L | 5 | 58 | 1.8 | 6/ | 4 m | 75 | NAG08 |
| 2003 12 23.69 | | M | 8.5 | AA | 8.0 | R | 11 | 52 | 7.5 | 5 | 0.17 | 90 | BAL08 |
| 2003 12 23.79 | | S | 8.0 | TT | 10 | B | 4 | 25 | 4 | 6 | | | LEH |
| 2003 12 23.79 | | S | 8.6 | TK | 10.2 | M | 13 | 65 | 4 | 5 | 0.2 | 80 | GON05 |
| 2003 12 23.80 | | S | 8.6 | AC | 6.0 | B | | 7 | 2 | 4 | | | RES |
| 2003 12 23.81 | | S | 8.5 | TK | 8.0 | B | | 11 | 6 | 5 | | | GON05 |
| 2003 12 23.82 | | S | 9.7 | TK | 44.0 | L | 5 | 63 | 2.2 | 4 | 0.09 | 82 | HAS02 |
| 2003 12 23.83 | | S | 8.4 | TK | 10.0 | B | | 25 | 6 | 5 | 0.1 | 80 | GON05 |
| 2003 12 23.86 | | M | 8.7 | HD | 30 | L | 5 | 60 | 3 | S6 | 5 m | 79 | NEV |
| 2003 12 23.87 | | M | 8.6 | TI | 27.0 | L | 6 | 60 | 3 | 6 | 0.15 | 85 | TOT03 |
| 2003 12 23.87 | | S | 8.2 | HD | 11 | B | | 20 | 5 | 3 | | | NEV |
| 2003 12 23.89 | | S | 8.9 | TK | 30.5 | T | 10 | 75 | 1.8 | s5 | 0.15 | 72 | KAM01 |
| 2003 12 23.96 | | S | 8.8 | TK | 8.0 | B | | 20 | 2 | 4 | | | AM001 |
| 2003 12 23.97 | | S | 8.4 | TK | 5.0 | B | | 10 | 5 | 6 | | | LIN04 |
| 2003 12 24.65 | | M | 8.6 | PA | 41 | L | 4 | 89 | 1 | 5/ | 4 m | | SHU |
| 2003 12 24.68 | | M | 8.7 | AA | 16.0 | L | 6 | 50 | 8.0 | 5 | 0.19 | 110 | HAD01 |
| 2003 12 24.70 | | M | 8.5 | TI | 5.0 | B | | 10 | 6 | 4 | | | SAN07 |
| 2003 12 24.71 | | S | 9.0 | TK | 10.0 | B | | 25 | 3.5 | 4 | | | HAS02 |
| 2003 12 24.75 | | S | 8.4 | AA | 6.0 | B | | 20 | 6 | 3/ | | | CSU |
| 2003 12 24.79 | | S | 8.6 | AC | 6.0 | B | | 7 | 3 | 4 | | | RES |
| 2003 12 25.71 | | M | 8.5 | TI | 5.0 | B | | 10 | 6 | s5 | | | SAN07 |
| 2003 12 25.76 | | S | 8.6 | AA | 6.0 | B | | 20 | 6 | 3/ | | | CSU |
| 2003 12 25.77 | | S | 9.2 | TI | 6.0 | B | | 20 | 7 | 3 | | | SAR02 |
| 2003 12 25.79 | | S | 8.5 | AC | 6.0 | B | | 7 | 2.5 | 4 | | | RES |
| 2003 12 25.80 | | S | 8.7 | TI | 36.0 | L | 4 | 100 | 1.5 | s3 | 0.04 | 60 | CSO |
| 2003 12 26.17 | | M | 8.2 | TJ | 5.0 | B | | 10 | &13 | 3 | | | MOR |
| 2003 12 26.27 | | M | 8.1 | TJ | 8.0 | B | | 20 | 7 | 4 | &0.33 | | MOR |
| 2003 12 26.72 | | S | 8.5 | AA | 6.0 | B | | 20 | 6 | 3/ | | | CSU |
| 2003 12 26.75 | | M | 8.7 | TI | 27.0 | L | 6 | 83 | 2 | 5 | 0.13 | 80 | TOT03 |
| 2003 12 26.76 | | S | 8.7: | TK | 8.0 | B | | 20 | 6 | 4 | | | SHA02 |
| 2003 12 26.96 | | B | 8.5 | TK | 25 | L | 4 | 53 | 4.5 | 7 | 15 m | 75 | LIN04 |
| 2003 12 26.97 | | S | 8.2 | TK | 10.0 | B | | 25 | 6 | 5 | 0.2 | 80 | GON05 |
| 2003 12 26.99 | | S | 8.2 | TK | 8.0 | B | | 11 | 6 | 5 | | | GON05 |
| 2003 12 27.30 | | M | 8.2 | TJ | 8.0 | B | | 20 | 9 | 3/ | &0.33 | | MOR |
| 2003 12 27.52 | x | M | 9.0 | TJ | 15.0 | B | | 25 | 3.5 | 6 | | | MIT |
| 2003 12 27.72 | | S | 8.5 | TJ | 15.0 | R | 8 | 30 | 4 | 6 | | 85 | DIE02 |
| 2003 12 27.73 | | S | 8.4 | TT | 5.6 | B | | 10 | > 5 | 6 | 0.1 | 75 | BUS01 |
| 2003 12 27.74 | | M | 8.5 | TK | 8.0 | B | | 15 | 4.5 | 5/ | | | BOU |
| 2003 12 27.75 | | M | 8.5 | TK | 8.0 | B | | 15 | 4.2 | 4/ | | | DIJ |
| 2003 12 27.75 | | S | 8.4 | AA | 6.0 | B | | 20 | 6 | 3/ | | | CSU |
| 2003 12 27.78 | | S | 8.2 | TK | 8.0 | B | | 11 | 6 | 5 | | | GON05 |
| 2003 12 27.78 | | S | 8.5 | AC | 6.0 | B | | 7 | 3.2 | 4/ | | | RES |
| 2003 12 27.78 | | S | 8.8 | TK | 8.0 | B | | 20 | 5 | 5 | | | SHA02 |
| 2003 12 27.97 | | S | 8.6 | TK | 25 | L | 4 | 53 | 4 | 6 | | | LIN04 |
| 2003 12 28.30 | | M | 8.1 | TJ | 8.0 | B | | 20 | 8 | 4 | &0.33 | | MOR |
| 2003 12 28.55 | x | M | 8.7 | TJ | 10.0 | B | | 20 | 3 | 6/ | 5 m | 65 | NAG08 |
| 2003 12 28.73 | | S | 8.5 | TK | 8.0 | B | | 20 | 5 | 5 | | | SHA02 |
| 2003 12 28.74 | | S | 8.3 | AA | 6.0 | B | | 20 | 6 | 3/ | | | CSU |
| 2003 12 28.77 | | M | 8.7 | TI | 11.4 | L | 5 | 50 | 4 | s6 | 0.05 | 70 | SAN07 |

Comet C/2002 T7 (LINEAR) [cont.]

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|------|---|----|-----|-------|----|------|----|-------|
| 2003 12 28.81 | | S | 8.9 | TK | 33 | L | 5 | 45 | 3.4 | 5 | 8 m | 80 | SHAO2 |
| 2003 12 28.87 | | B | 8.7 | TI | 10.2 | T | 5 | 20 | 3 | 6 | | | LABO2 |
| 2003 12 28.87 | | S | 8.5 | TK | 8.0 | B | | 11 | 4 | 5 | | | GON05 |
| 2003 12 28.92 | | M | 8.4 | TK | 8.0 | B | | 15 | 5.5 | 5 | 0.4 | 72 | BOU |
| 2003 12 29.79 | | S | 8.4 | AC | 13.0 | L | 6 | 45 | 2.8 | 4/ | | | RES |
| 2003 12 29.79 | | S | 8.8 | TK | 30.5 | T | 10 | 75 | 2.0 | s5 | 0.1 | 65 | KAM01 |
| 2003 12 29.81 | | S | 10.1 | TK | 41 | T | 10 | 70 | 0.6 | 6 | 4.5m | 65 | STO03 |
| 2003 12 30.55 | x | S | 9.9 | TJ | 31.7 | L | 6 | 63 | 1.2 | 5 | 3.7m | 75 | MIY01 |
| 2004 01 01.02 | | M | 8.3: | HV | 8.0 | B | | 16 | 7 | 3 | | | CRE01 |
| 2004 01 02.74 | | S | 9.1: | TK | 33 | L | 5 | 45 | 2.2 | 4 | | | SHAO2 |
| 2004 01 05.97 | | S | 8.8 | TK | 14.3 | L | 6 | 35 | 1.5 | 4 | | | AM001 |
| 2004 01 06.83 | | S | 8.3 | TK | 10.0 | B | | 25 | 4 | 5 | | | GON05 |
| 2004 01 07.96 | | S | 8.5 | TK | 8.0 | B | | 20 | 2 | 3 | | | AM001 |
| 2004 01 08.93 | | S | 7.9: | TK | 10 | B | | 25 | 3 | 4 | | | SHAO2 |
| 2004 01 09.46 | x | M | 9.2 | TT | 10.0 | B | | 26 | 3 | | | | TSU02 |
| 2004 01 09.76 | | S | 7.9 | TK | 5.0 | B | | 10 | 5 | 3 | | | SHAO2 |
| 2004 01 09.76 | | S | 8.0 | TK | 33 | L | 5 | 45 | 3.4 | 5 | 7 m | 70 | SHAO2 |
| 2004 01 09.77 | | S | 7.9 | TK | 8.0 | B | | 10 | 7 | 3 | | | SHAO2 |
| 2004 01 09.78 | | S | 7.4 | TK | 5.0 | B | | 7 | 13 | 5 | 0.2 | 80 | GON05 |
| 2004 01 10.73 | | M | 7.7 | TK | 15.5 | L | 5 | 30 | 3.5 | 5 | 10 m | 75 | DIJ |
| 2004 01 10.74 | | M | 7.8 | TK | 8.0 | B | | 15 | 7 | 5 | | | BOU |
| 2004 01 10.75 | | S | 8.3 | TK | 8.0 | B | | 15 | | 5/ | | | COM |
| 2004 01 10.78 | | B | 8.3 | TI | 8.0 | B | | 11 | 4 | 6 | | | LABO2 |
| 2004 01 11.44 | x | M | 7.8 | TK | 10.0 | B | | 20 | 5 | 5 | 9 m | 55 | YOS02 |
| 2004 01 11.44 | x | S | 8.8 | TJ | 32.0 | L | 5 | 58 | 3.3 | 6 | 5 m | 55 | NAG08 |
| 2004 01 11.75 | | M | 7.7 | TK | 8.0 | B | | 15 | 8 | 5 | 0.25 | 70 | BOU |
| 2004 01 11.78 | | M | 7.6 | TK | 15.5 | L | 5 | 30 | 4 | 6 | 14 m | 77 | DIJ |
| 2004 01 11.78 | | S | 7.6 | TK | 8.0 | B | | 20 | 9 | 5 | | | SHAO2 |
| 2004 01 11.80 | | S | 7.5 | TK | 5.0 | B | | 7 | 13 | 5 | | | GON05 |
| 2004 01 11.81 | | S | 7.5 | TK | 8.0 | B | | 11 | 13 | 5 | 0.2 | 80 | GON05 |
| 2004 01 11.83 | | S | 7.7 | TK | 20.3 | T | 10 | 36 | 11 | 6 | | | GON05 |
| 2004 01 12.79 | | S | 7.6 | TK | 8.0 | B | | 20 | 10 | 5 | | | SHAO2 |
| 2004 01 13.45 | x | M | 8.1 | TK | 10.0 | B | | 20 | 5 | 5 | 9 m | 60 | YOS02 |
| 2004 01 13.76 | | S | 7.7 | TK | 8.0 | B | | 20 | 8 | 5 | | | SHAO2 |
| 2004 01 13.99 | | S | 8.3 | TK | 8.0 | B | | 20 | 2 | 5 | | | AM001 |
| 2004 01 14.76 | | B | 8.3 | TK | 5.0 | B | | 10 | 7.0 | 4 | | | HAS02 |
| 2004 01 14.80 | | S | 7.4 | TK | 5.0 | B | | 7 | 13 | 5 | | | GON05 |
| 2004 01 14.81 | | S | 7.4 | TK | 8.0 | B | | 11 | 13 | 5 | 0.3 | 70 | GON05 |
| 2004 01 14.82 | | S | 7.5 | TK | 10.0 | B | | 25 | 8 | 5 | 0.6 | 70 | GON05 |
| 2004 01 14.84 | | S | 7.7 | TK | 10.2 | M | 13 | 65 | 6 | 6 | 0.2 | 70 | GON05 |
| 2004 01 15.50 | | S | 7.6 | TJ | 25.4 | T | 6 | 32 | 3.7 | 6 | | | YOS04 |
| 2004 01 15.72 | w | S | 7.8 | S | 11 | L | 7 | 32 | 5 | 2/ | 0.25 | 75 | SVE01 |
| 2004 01 16.75 | | S | 7.5 | TK | 5.0 | B | | 10 | 7 | 5 | | | SHAO2 |
| 2004 01 16.79 | | S | 7.4 | TK | 5.0 | B | | 7 | 11 | 5 | | | GON05 |
| 2004 01 16.80 | | B | 8.0 | TI | 8.0 | B | | 11 | 5 | 6 | | | LABO2 |
| 2004 01 16.80 | | S | 7.4 | TK | 8.0 | B | | 11 | 11 | 5 | 0.2 | 70 | GON05 |
| 2004 01 16.98 | | S | 8.1 | TK | 8.0 | B | | 11 | 2 | 2 | | | DES01 |
| 2004 01 17.01 | | S | 8.0 | TJ | 8.0 | B | | 20 | & 4.5 | 2/ | | | GRE |
| 2004 01 17.45 | x | S | 8.1 | TJ | 15.0 | B | | 25 | 4 | 5 | 12 m | 58 | HAS08 |
| 2004 01 17.75 | | S | 7.9 | TT | 5.0 | B | | 7 | 10 | 4 | | | KAR02 |
| 2004 01 17.82 | | B | 7.9 | TI | 8.0 | B | | 11 | 5 | 5 | | | LABO2 |
| 2004 01 17.92 | | S | 7.4 | TK | 8.0 | B | | 20 | 7 | 4 | 14 m | 80 | SHAO2 |
| 2004 01 17.99 | | S | 8.1 | TJ | 27 | L | 5 | 55 | 7 | 5/ | 0.41 | 64 | DES01 |
| 2004 01 18.22 | | B | 8.0 | TK | 37 | L | 3 | 60 | 6 | 5 | 10 m | 50 | LIN04 |
| 2004 01 18.81 | | S | 7.4 | TK | 5.0 | B | | 7 | 11 | 5 | | | GON05 |
| 2004 01 18.82 | | B | 8.0 | TI | 8.0 | B | | 11 | 5 | 5 | | | LABO2 |
| 2004 01 18.82 | | S | 7.4 | TK | 8.0 | B | | 11 | 11 | 5 | 0.2 | 70 | GON05 |
| 2004 01 18.99 | | S | 8.0 | TJ | 8.0 | B | | 11 | 3 | 3 | | | DES01 |
| 2004 01 19.16 | | B | 8.2 | TK | 8.0 | B | | 11 | 5 | 5 | | | WAR01 |
| 2004 01 19.40 | x | S | 7.9 | TJ | 10.0 | B | | 20 | 3 | 6 | | | NAG08 |
| 2004 01 19.83 | | S | 7.5 | TK | 5.0 | B | | 7 | 11 | 5 | | | GON05 |
| 2004 01 19.83 | | S | 7.5 | TK | 8.0 | B | | 11 | 11 | 5 | 0.2 | 70 | GON05 |
| 2004 01 19.84 | | S | 7.6 | TK | 10.0 | B | | 25 | 11 | 6 | 0.4 | 70 | GON05 |
| 2004 01 19.98 | | S | 8.0 | TJ | 8.0 | B | | 11 | 3 | 2/ | | | DES01 |
| 2004 01 20.01 | | S | 7.9 | TJ | 8.0 | B | | 20 | & 4 | 1/ | | | GRE |

Comet C/2002 T7 (LINEAR) [cont.]

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|------|---|----|-----|-------|----|------|----|-------|
| 2004 01 20.99 | | S | 7.3 | TJ | 8.0 | B | | 20 | & 8 | 5 | | | GRE |
| 2004 01 21.00 | | B | 7.7 | TJ | 5.0 | B | | 12 | | | | | GRE |
| 2004 01 21.00 | | M | 7.6 | HV | 5.0 | B | | 10 | 12 | 5 | | | CRE01 |
| 2004 01 21.00 | | S | 7.0 | TJ | 5.0 | B | | 12 | &10 | 4/ | | | GRE |
| 2004 01 21.80 | | S | 7.4 | TK | 8.0 | B | | 11 | 10 | 5 | 0.2 | 70 | GON05 |
| 2004 01 21.80 | | S | 7.5 | TK | 5.0 | B | | 7 | 10 | 5 | 0.2 | 70 | GON05 |
| 2004 01 21.82 | | S | 7.7 | TK | 10.0 | B | | 25 | 9 | 6 | 0.3 | 70 | GON05 |
| 2004 01 21.83 | | M | 7.3 | S | 3.0 | B | | 6 | 12 | 5 | | | MAR02 |
| 2004 01 22.19 | | S | 7.1 | TJ | 5.0 | B | | 10 | 17 | 3 | | | MOR |
| 2004 01 22.20 | | M | 7.5 | TJ | 8.0 | B | | 20 | 8 | 7 | &2.5 | | MOR |
| 2004 01 22.84 | | M | 7.5 | HD | 30 | L | 5 | 60 | 6 | s6 | 0.25 | 70 | NEV |
| 2004 01 22.85 | | S | 7.3 | HD | 11 | B | | 20 | 8 | 4 | | | NEV |
| 2004 01 23.43 | x | M | 8.2 | TT | 10.0 | B | | 26 | 4 | | | | TSU02 |
| 2004 01 23.49 | | S | 7.4 | TJ | 25.4 | T | 6 | 32 | 7.5 | 4 | | | YOS04 |
| 2004 01 23.74 | | S | 7.1 | TJ | 15.0 | R | 8 | 30 | 7 | 4 | | | DIE02 |
| 2004 01 23.75 | | M | 7.6 | TK | 8.0 | B | | 15 | 6 | 5 | 0.35 | 65 | BOU |
| 2004 01 23.75 | | M | 7.7 | TK | 8.0 | B | | 15 | 5 | 5 | 20 m | 73 | DIJ |
| 2004 01 24.01 | | B | 8.3 | TJ | 8.0 | B | | 20 | | | | | GRE |
| 2004 01 24.01 | | S | 7.6 | TJ | 8.0 | B | | 20 | & 4.5 | 3 | | | GRE |
| 2004 01 24.12 | | M | 6.9 | TJ | 5.0 | B | | 10 | 17 | 4 | | | MOR |
| 2004 01 24.12 | | M | 7.3 | TJ | 8.0 | B | | 20 | 8 | 6/ | &2.5 | | MOR |
| 2004 01 24.80 | | M | 7.9 | TK | 8.0 | B | | 15 | 4 | 5 | | | COM |
| 2004 01 24.81 | | M | 7.6 | TK | 8.0 | B | | 15 | 6 | 5/ | 0.4 | 60 | BOU |
| 2004 01 24.81 | | S | 7.4 | TK | 8.0 | B | | 20 | 8 | 4 | 10 m | 80 | SHA02 |
| 2004 01 24.82 | | M | 7.6 | TK | 8.0 | B | | 15 | 6 | 5 | 0.3 | 66 | DIJ |
| 2004 01 24.83 | | S | 7.4 | TK | 5.0 | B | | 10 | 8 | 4 | | | SHA02 |
| 2004 01 25.42 | x | M | 7.4 | TJ | 8.0 | B | | 11 | 6 | 5 | | | NAG08 |
| 2004 01 25.42 | x | M | 7.4 | TJ | 10.0 | B | | 20 | 5 | 5 | 10 m | 60 | NAG08 |
| 2004 01 25.47 | x | M | 7.9 | TK | 10.0 | B | | 20 | 6 | 4 | 9 m | 60 | YOS02 |
| 2004 01 25.48 | x | S | 7.5 | TK | 3.5 | B | | 7 | 9 | 3 | | | YOS02 |
| 2004 01 25.79 | | S | 7.4: | TK | 8.0 | B | | 20 | 5 | 3 | | | SHA02 |
| 2004 01 25.92 | | S | 7.5 | TK | 5.0 | B | | 7 | 10 | 5 | | | GON05 |
| 2004 01 25.92 | | S | 7.5 | TK | 8.0 | B | | 11 | 10 | 5 | | | GON05 |
| 2004 01 25.93 | | S | 7.7 | TK | 10.0 | B | | 25 | 8 | 6 | 0.2 | 70 | GON05 |
| 2004 01 29.76 | | S | 7.3 | TK | 8.0 | B | | 20 | 6 | 4 | | | SHA02 |

Comet C/2002 V1 (NEAT)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|------|---|----|-----|------|-----|------|-----|-------|
| 2002 12 11.90 | | S | 11.2 | TI | 20.0 | T | 10 | 100 | 1 | s7 | | | SCA02 |
| 2002 12 11.90 | | S | 11.2 | TI | 20.0 | T | 10 | 100 | 1 | s7 | | | SCA02 |
| 2002 12 26.77 | | S | 8.0 | TI | 5.0 | B | | 7 | 12 | S4 | | | SCA02 |
| 2002 12 26.77 | | S | 8.4 | TI | 25 | T | 5 | 45 | 15 | s4 | 40 m | | SCA02 |
| 2002 12 27.76 | | S | 8.0 | TI | 5.0 | B | | 7 | 13 | s4 | | | SCA02 |
| 2002 12 29.72 | | S | 7.8 | TI | 5.0 | B | | 7 | 15 | s3/ | | | SCA02 |
| 2003 01 01.71 | | S | 7.2 | TI | 5.0 | B | | 7 | 22 | s5 | 30 m | 30 | SCA02 |
| 2003 01 03.74 | | M | 7.6 | TI | 11.4 | L | 5 | 20 | 8 | 3 | 0.07 | 120 | SAN07 |
| 2003 01 03.79 | | S | 7.8 | TI | 27.0 | L | 6 | 60 | 7 | 4 | 0.05 | 40 | TOT03 |
| 2003 01 04.73 | | S | 7.4 | TI | 5.0 | B | | 10 | 10 | 1 | | | SAN07 |
| 2003 01 05.73 | | S | 6.8 | TI | 5.0 | B | | 7 | 18 | s5 | 30 m | 40 | SCA02 |
| 2003 01 06.73 | | S | 8.0: | TI | 11.4 | L | 5 | 20 | 5 | 3 | | | SAN07 |
| 2003 01 07.75 | | S | 6.7 | TI | 5.0 | B | | 7 | 16 | s5/ | 40 m | 40 | SCA02 |
| 2003 01 12.71 | | M | 6.8 | TI | 11.4 | L | 5 | 20 | 5 | s5 | | | SAN07 |
| 2003 01 14.76 | | S | 6.5 | TI | 5.0 | B | | 7 | 13 | s6/ | 50 m | 60 | SCA02 |
| 2003 01 15.71 | | M | 6.5 | TI | 5.0 | B | | 10 | 8 | s6/ | | | SAN07 |
| 2003 01 15.74 | | S | 6.3 | TI | 5.0 | B | | 7 | 14 | s7 | 1 | 70 | SCA02 |
| 2003 01 19.72 | | S | 6.2 | TI | 5.0 | B | | 7 | 13 | s7/ | 1 | 70 | SCA02 |
| 2003 01 20.73 | | S | 6.1 | TI | 5.0 | B | | 7 | 11 | s7/ | 1 | 75 | SCA02 |
| 2003 01 21.73 | | S | 6.0 | TI | 5.0 | B | | 7 | 15 | s7/ | 1.5 | 70 | SCA02 |
| 2003 01 23.02 | | S | 6.0: | AA | 20.0 | T | 10 | 50 | 3.5 | 7 | &0.5 | 60 | SHA04 |
| 2003 01 24.75 | | S | 5.5 | TI | 0.0 | E | | 1 | | s8 | | | SCA02 |
| 2003 01 24.75 | | S | 5.6 | TI | 5.0 | B | | 7 | 12 | s8 | 2 | 75 | SCA02 |
| 2003 01 25.79 | | S | 5.5 | TI | 5.0 | B | | 7 | 13 | s8/ | 2.5 | 75 | SCA02 |
| 2003 01 27.74 | | S | 5.4 | TI | 5.0 | B | | 7 | 12 | s9 | 3 | 80 | SCA02 |
| 2003 01 28.06 | | S | 5.8: | AA | 20.0 | T | 10 | 50 | 2.7 | 8 | &1 | 30 | SHA04 |

Comet C/2002 V1 (NEAT) [cont.]

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|------|---|----|-----|------|-----|------|----|-------|
| 2003 01 28.75 | | S | 5.3 | TI | 5.0 | B | | 7 | 12 | s8/ | 2.5 | 85 | SCA02 |
| 2003 01 29.73 | | M | 5.5 | TI | 5.0 | B | | 10 | 5 | S7/ | 0.2 | 65 | SAN07 |
| 2003 01 29.77 | | S | 5.3 | TI | 5.0 | B | | 7 | 10 | s8 | 2 | 85 | SCA02 |
| 2003 01 31.75 | | M | 4.9 | TI | 5.0 | B | | 7 | 12 | s8 | 4 | 85 | SCA02 |
| 2003 02 01.06 | | S | 5.0: | AA | 20.0 | T | 10 | 50 | 2.7 | 9 | &1 | 70 | SHA04 |
| 2003 02 01.73 | | M | 5.4 | TI | 5.0 | B | | 10 | 4 | S8 | 1.5 | 65 | SAN07 |
| 2003 02 02.73 | | M | 5.2 | TI | 5.0 | B | | 10 | 4 | S8 | 2.5 | 60 | SAN07 |
| 2003 02 03.06 | | S | 4.8: | AA | 20.0 | T | 10 | 50 | 2.7 | 9 | &1 | 60 | SHA04 |
| 2003 02 05.00 | | B | 5.2 | A | 5.0 | B | | 7 | 7 | 8 | | | SIM |
| 2003 02 07.71 | | M | 4.0 | TI | 5.0 | B | | 10 | 3 | S8 | 0.5 | 55 | SAN07 |
| 2003 02 07.73 | | M | 4.8: | TI | 6.0 | B | | 20 | 3 | 8 | 0.7 | 40 | BAL04 |
| 2003 02 07.75 | | M | 4.0 | TI | 0.7 | E | | 1 | | s8 | 2 | | SCA02 |
| 2003 02 07.75 | | M | 4.0 | TI | 5.0 | B | | 7 | 12 | s8 | 5.5 | 80 | SCA02 |
| 2003 02 08.73 | | M | 3.8 | TI | 0.7 | E | | 1 | | s8 | 2 | | SCA02 |
| 2003 02 08.73 | | M | 3.9 | TI | 5.0 | B | | 7 | 10 | S8 | 5 | 75 | SCA02 |
| 2003 02 11.73 | | M | 3.6 | TI | 6.0 | B | | 20 | 5 | 7 | 1 | 45 | KUL02 |

Comet C/2002 X1 (LINEAR)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|-----|------|----|------|---|----|-----|------|----|------|----|------|
| 2003 09 04.12 | | a S | 13.8 | AC | 31.0 | J | 6 | 143 | 0.7 | 2/ | | | BOU |
| 2003 09 26.13 | | S | 13.4 | AC | 31.0 | J | 6 | 143 | 1.0 | 3 | | | BOU |
| 2003 10 26.96 | | S | 13.3 | HN | 31.0 | J | 6 | 143 | 0.9 | 4 | | | BOU |
| 2003 10 27.94 | | S | 13.2 | HN | 31.0 | J | 6 | 124 | 0.8 | 3/ | | | BOU |
| 2003 10 27.95 | | S | 13.6 | HN | 31.0 | J | 6 | 124 | 0.8 | 1/ | | | DIJ |

Comet C/2002 X5 (Kudo-Fujikawa)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|------|---|----|-----|------|-----|------|-----|-------|
| 2002 01 01.72 | | M | 6.5 | AA | 6.0 | B | | 20 | 9 | | 1 | 35 | KOC03 |
| 2002 01 03.68 | | M | 6.3 | AA | 6.0 | B | | 20 | 12 | | 2 | 40 | KOC03 |
| 2002 01 03.70 | | S | 6.5 | TI | 27.0 | L | 6 | 83 | 6 | 6/ | 0.2 | 350 | TOT03 |
| 2002 12 17.20 | | S | 6.5 | TI | 5.0 | B | | 7 | 6 | s4 | | | SCA02 |
| 2002 12 17.70 | | S | 6.7 | TI | 5.0 | B | | 7 | 5 | s3/ | | | SCA02 |
| 2002 12 21.70 | | S | 6.4 | TI | 5.0 | B | | 7 | 10 | s6/ | 10 m | | SCA02 |
| 2003 01 03.68 | | M | 6.2 | TI | 5.0 | B | | 10 | 8 | s6/ | 0.25 | 5 | SAN07 |
| 2003 01 04.68 | | S | 6.8 | TI | 5.0 | B | | 10 | 6 | S7 | | | SAN07 |

Comet C/2002 Y1 (Juels-Holvorcem)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|------|----|------|---|----|-----|------|-----|------|----|-------|
| 2003 01 29.00 | | S | 9.0: | TI | 5.0 | B | | 10 | 5 | 0 | | | SAN07 |
| 2003 01 30.00 | | S | 9.5 | TI | 5.0 | B | | 10 | 4 | 2 | | | SAN07 |
| 2003 02 24.79 | | M | 8.0 | TI | 11.4 | L | 5 | 50 | 6 | d3/ | | | SAN07 |
| 2003 02 27.00 | | B | 7.7 | AA | 5.0 | B | | 10 | 4 | 2 | | | NOW |
| 2003 02 28.01 | | B | 7.7 | AA | 10.0 | B | | 20 | 6 | 4 | | | NOW |
| 2003 03 05.78 | | S | 6.6 | TI | 5.0 | B | | 7 | 8 | s5/ | | | SCA02 |
| 2003 03 06.75 | | S | 6.6 | TI | 8.0 | R | | 5 | 10 | s6 | | | SCA02 |
| 2003 03 12.76 | | S | 6.4 | TI | 8.0 | R | | 5 | 12 | s6 | | | SCA02 |
| 2003 03 15.77 | | S | 6.4 | TI | 8.0 | R | | 5 | 13 | s6/ | | | SCA02 |
| 2003 03 17.77 | | M | 7.0: | TI | 11.4 | L | 5 | 50 | 4 | s4 | | | SAN07 |
| 2003 03 18.76 | | S | 6.2 | TI | 8.0 | R | | 5 | 10 | s6 | | | SCA02 |
| 2003 03 22.76 | | M | 6.3 | TI | 5.0 | B | | 10 | 6 | s6 | 0.1 | 10 | SAN07 |
| 2003 03 24.77 | | M | 6.5: | TI | 5.0 | B | | 10 | 6 | s4 | | | SAN07 |
| 2003 03 24.77 | | S | 5.7 | TI | 8.0 | R | | 5 | 14 | s7 | | | SCA02 |
| 2003 04 01.42 | | S | 5.5: | AA | 20.0 | T | 10 | 50 | | 4 | | | SHA04 |

Comet C/2003 F1 (LINEAR)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|-------|----|------|---|----|-----|-------|----|------|----|-------|
| 2003 05 03.90 | | S | [13.5 | HS | 27.0 | L | 6 | 214 | ! 0.5 | | | | TOT03 |

Comet C/2003 H1 (LINEAR)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|--------|----|------|---|----|-----|-------|----|------|----|-------|
| 2003 06 24.93 | | | S[13.8 | HS | 20.3 | L | 6 | 108 | ! 0.5 | | | | GUZ |
| 2003 07 02.91 | | | S[13.8 | HS | 20.3 | L | 6 | 108 | ! 0.5 | | | | GUZ |
| 2003 07 19.91 | | | M 14.0 | HS | 35 | L | 5 | 237 | 0.6 | 4 | | | HOR02 |
| 2004 01 20.23 | | | S 13.3 | TK | 20.3 | T | 10 | 100 | 1 | 2 | | | GON05 |
| 2004 01 25.70 | | | S 13.3 | GA | 25.4 | L | 4 | 71 | & 1 | | | | SEA |
| 2004 01 25.86 | | | S 13.0 | AU | 25.4 | L | 4 | 113 | 1.1 | 3 | | | YOS02 |

Comet C/2003 H3 (NEAT)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|--------|----|------|---|----|-----|-------|----|------|----|-------|
| 2003 09 03.88 | | | S[13.7 | HS | 27.0 | L | 6 | 214 | ! 0.5 | | | | TOT03 |

Comet C/2003 K4 (LINEAR)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|--------|----|------|---|----|-----|------|----|------|----|-------|
| 2003 11 23.73 | | | S[13.5 | HS | 44.0 | L | 5 | 156 | | | | | HAS02 |
| 2003 12 19.70 | | | S 13.8 | AC | 40.6 | L | 5 | 121 | 0.8 | 3 | | | RES |

Comet C/2003 T2 (LINEAR)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|---------|----|------|---|----|-----|-------|----|------|----|-------|
| 2003 10 16.77 | | | S[13.6 | HS | 27.0 | L | 6 | 214 | ! 1.0 | | | | TOT03 |
| 2003 10 16.81 | | | S 14.4: | AC | 31.0 | J | 6 | 177 | 0.5 | 4 | | | BOU |
| 2003 10 16.81 | | | S 14.7: | AC | 31.0 | J | 6 | 177 | 0.6 | 2/ | | | DIJ |
| 2003 10 18.87 | | | S 14.2 | AC | 31.0 | J | 6 | 143 | 0.5 | 4 | | | BOU |
| 2003 10 18.88 | | | S 14.4 | AC | 31.0 | J | 6 | 143 | 0.6 | 3 | | | DIJ |
| 2003 10 23.87 | | | S 14.2 | AC | 31.0 | J | 6 | 143 | 0.5 | 3/ | | | BOU |
| 2003 10 23.87 | | | S 14.5 | AC | 31.0 | J | 6 | 143 | 0.6 | 5 | | | DIJ |
| 2003 10 24.87 | | | S 14.1 | AC | 31.0 | J | 6 | 143 | 0.6 | 4 | | | BOU |
| 2003 10 26.94 | | | S 14.0 | AC | 31.0 | J | 6 | 143 | 0.7 | 4 | | | BOU |

Comet C/2003 T3 (Tabur)

| DATE (UT) | N | MM | MAG. | RF | AP. | T | F/ | PWR | COMA | DC | TAIL | PA | OBS. |
|---------------|---|----|---------|----|------|---|----|-----|------|----|------|----|-------|
| 2003 10 16.58 | | | S 11.9 | TK | 28 | T | 10 | 133 | 1 | 5 | | | MAT08 |
| 2003 10 22.50 | | | S 12.0 | TK | 28 | T | 10 | 133 | 1 | 5 | | | MAT08 |
| 2003 11 03.91 | | | S 11.5: | TJ | 20 | T | 10 | 153 | | 2 | | | SOU01 |
| 2003 11 04.01 | | | S 11.8: | TK | 14.3 | L | 6 | 112 | | 6 | | | AM001 |
| 2003 11 11.46 | | | S 11.6 | TK | 28 | T | 10 | 133 | 1.2 | 5 | | | MAT08 |
| 2003 11 12.43 | | | S 11.7 | LM | 25.4 | L | 4 | 71 | | | | | SEA |
| 2003 11 13.97 | | | S 11.8: | TK | 14.3 | L | 6 | 80 | | | | | AM001 |
| 2003 11 14.54 | | | S 11.8 | TK | 28 | T | 10 | 133 | 1 | 5 | | | MAT08 |
| 2003 12 16.46 | | | S 11.8 | GA | 25.4 | L | 4 | 71 | 1 | | | | SEA |

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Non-Visual Data (new format)

TABULATED NON-VISUAL DATA

The new format for non-visual data was introduced in the October 2001 issue of the *ICQ*, chiefly to help researchers make more sense of comet photometry obtained with CCD cameras, to determine what effects various instrumental factors play (spectral responses, exposure times, photometric aperture sizes, etc.). As described in that issue, almost all of the new information is added to the original observation records in columns 81-129, thereby leaving the first 80 columns essentially unchanged (except that in the "coma-diameter" column, true coma diameters are now given without exception in the new format; the old format allowed CCD users to put instead an aperture size in the "coma-diameter" column, but this is now allowed for in columns 87-93 of the new-format records). See also page 208 of the July 2002 issue.

Most of the columns below are as for the visual data (described on pages 20-21 of this issue). While electronic magnitudes *can* be submitted to 0.01 magnitude, for many reasons it is highly advised to continue giving total comet magnitudes only to 0.1 mag. Similarly, it is advised to continue giving all times to 0.01 day, as 0.001 day is usually unnecessary for cometary photometry.

The headings for the tabulated data are as follows: The date (UT), notes, magnitude method (including filters for CCDs, and "P" for photographs), magnitude, reference, instrument aperture, instrument type, instrument *f*-ratio, exposure time, coma diameter, degree of condensation, tail length and position angle, and observer are all as described for the visual tabulation. The column headed "APERTUR" gives the photometric aperture, preceded by "S" for square aperture and "C" for circular aperture, and followed by "d" for degrees, "m" for arcmin, and "s" for arcsec. The column "Chp" contains the 3-character code for the computer chip, given to indicate spectral response of the CCD camera. This column will also be used to indicate photographic emulsion when such information is provided for photographic photometry. The column "Sfw" contains the 3-character code for the software used to actually perform the photometric measures (not solely to extract comparison-star magnitudes). A lower-case "a" between these two columns indicates an anti-blooming CCD. The column headed "C" gives a number as follows: 0 = no correction; 1 = correction for bias (bias subtracted); 2 = flat-field corrected (flat-fielded); 3 = 1 + 2; 4 = dark-subtracted (and bias-subtracted) 5 = 2 + 4. The column headed "P" includes a P if the images used to measure the photometry were also measured for astrometry *and* those astrometric measures were published in the *Minor Planet Circulars* (meaning they were refereed); a U in this column indicates that the respective astrometric was sent to the MPC for publication but that either (a) they are unpublished at the time of reporting the photometry or (b) the observer is unaware of the publication status; a blank in this column indicates that no astrometry was measured. The 3-character CCD-camera code is listed under "Cam".

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Comet 2P/Encke

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|-----|---|------|----|-------|---|------|------|------|----|---------|------|---------|---------|-----|-----|-----|-------|------|
| 2003 10 17.87 | d | C | 14.7 | LB | 6.3M | 8 | a600 | 0.6 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 17.87 | d | C | 15.2 | LB | 6.3M | 8 | a600 | 0.6 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 17.87 | d | C | 15.3 | LB | 6.3M | 8 | a600 | 0.6 | | | | | S 0.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 18.84 | d | C | 13.8 | LB | 6.3M | 8 | a480 | 0.7 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 18.84 | d | C | 13.9 | LB | 6.3M | 8 | a480 | 0.7 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 26.48 | x | C | 14.3 | TJ | 20.0C | 9 | a120 | & 2 | | | | | C 2.2 m | K26 | SI4 | 5 | ST9 | KON03 | |
| 2003 10 28.95 | d | C | 14.1 | LB | 6.3M | 8 | a600 | 0.7 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 28.95 | d | C | 14.2 | LB | 6.3M | 8 | a600 | 0.7 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 29.51 | ax | C | 12.5 | HV | 35.0C | 9 | a 60 | 3.5 | | | | | S 4.02m | KAIaSI3 | 5 | | ST2 | TSU02 | |
| 2003 10 30.54 | ax | C | 12.0 | HV | 35.0C | 9 | a 60 | 4.5 | | | | | S 5.16m | KAIaSI3 | 5 | | ST2 | TSU02 | |
| 2003 11 04.51 | a | V | 14.8 | LA | 30.0L | 6 | a540 | 0.4 | 8 | | 1.0m315 | | C 0.4 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 11 04.52 | a | H | 14.1 | LA | 30.0L | 6 | a540 | 0.4 | 8 | | 1.0m315 | | C 0.4 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 11 04.93 | d | C | 13.2 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 04.93 | d | C | 13.4 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 04.93 | d | C | 13.6 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 0.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 05.85 | d | C | 13.6 | LB | 6.3M | 8 | a240 | 0.6 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 05.85 | d | C | 13.9 | LB | 6.3M | 8 | a240 | 0.6 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 05.85 | d | C | 14.4 | LB | 6.3M | 8 | a240 | 0.6 | | | | | S 0.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 12.82 | d | C | 13.8 | LB | 6.3M | 8 | a240 | 0.6 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 12.82 | d | C | 14.2 | LB | 6.3M | 8 | a240 | 0.6 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 12.82 | d | C | 14.7 | LB | 6.3M | 8 | a240 | 0.6 | | | | | S 0.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 13.45 | a | H | 15.2 | LA | 30.0L | 6 | A680 | 0.4 | 8 | | | | C 0.4 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 11 13.47 | a | V | 15.0 | LA | 30.0L | 6 | A560 | 1.8 | 8 | | | | C 0.4 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 12 04.36 | ax | C | 8.4 | HV | 35.0C | 9 | a 30 | 5 | | | | | S 8.20m | KAIaSI3 | 5 | | ST2 | TSU02 | |
| 2003 12 31.87 | &xC | | 9.8 | TJ | 20.0C | 9 | a 30 | 0.8 | | | 5 | m275 | C 0.95m | K26 | SI4 | 5 | ST9 | KON03 | |

Comet 7P/Pons-Winnecke

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|------|------|------|----|---------|----|---------|-----|-----|---|-----|-------|------|
| 2002 05 14.69 | x | C | 14.4 | TJ | 20.0C | 9 | a120 | 0.3 | | | 0.6m287 | | C 0.5 m | K26 | SI4 | 5 | ST9 | KON03 | |

Comet 22P/Kopff

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|------|------|------|----|---------|----|---------|-----|-----|---|-----|-------|-------|
| 2002 06 07.50 | x | C | 14.9 | TJ | 20.0C | 9 | a 60 | 0.3 | | | 0.8m110 | | C 0.8 m | K26 | SI4 | 5 | ST9 | KON03 | |
| 2003 11 16.58 | | C | 16.9 | GA | 60.0Y | 6 | a240 | 0.55 | | | | | S 0.55m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet 28P/Neujmin

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|------|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 11 22.61 | | C | 18.1 | GA | 60.0Y | 6 | a240 | | | 9 | | | S 0.3 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2004 01 17.57 | | C | 18.5 | GA | 60.0Y | 6 | a240 | | | 9 | | | S 0.3 m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet 29P/Schwassmann-Wachmann

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|-----|---|------|----|-------|---|------|------|------|----|------|----|---------|---------|-----|----|-----|-------|-------|
| 2003 08 24.98 | d | C | 12.8 | LB | 6.3M | 8 | a600 | 1.0 | | | | | S 1.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 08 24.98 | d | C | 12.9 | LB | 6.3M | 8 | a600 | 1.0 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 08 24.98 | d | C | 13.0 | LB | 6.3M | 8 | a600 | 1.0 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 14.87 | d | C | 13.5 | LB | 6.3M | 8 | a420 | 0.8 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 14.87 | d | C | 13.8 | LB | 6.3M | 8 | a420 | 0.8 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 14.87 | d | C | 14.3 | LB | 6.3M | 8 | a420 | 0.8 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 15.85 | d | C | 14.0 | LB | 6.3M | 8 | a600 | 0.6 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 15.85 | d | C | 14.3 | LB | 6.3M | 8 | a600 | 0.6 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 21.84 | d | C | 13.4 | LB | 6.3M | 8 | a600 | 1.4 | | | | | S 1.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 21.84 | d | C | 13.4 | LB | 6.3M | 8 | a600 | 1.4 | | | | | S 1.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 21.84 | d | C | 13.7 | LB | 6.3M | 8 | a600 | 1.4 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 22.91 | d | C | 12.8 | LB | 6.3M | 8 | a600 | 1.9 | | | | | S 2.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 22.91 | d | C | 12.9 | LB | 6.3M | 8 | a600 | 1.9 | | | | | S 1.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 22.91 | d | C | 13.0 | LB | 6.3M | 8 | a600 | 1.9 | | | | | S 1.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 25.80 | d | C | 13.0 | LB | 6.3M | 8 | a600 | 1.9 | | | | | S 2.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 25.80 | d | C | 13.1 | LB | 6.3M | 8 | a600 | 1.9 | | | | | S 1.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 25.80 | d | C | 13.2 | LB | 6.3M | 8 | a600 | 1.9 | | | | | S 1.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 18.80 | d | C | 13.2 | LB | 6.3M | 8 | a600 | 1.3 | | | | | S 1.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 18.80 | d | C | 13.4 | LB | 6.3M | 8 | a600 | 1.3 | | | | | S 1.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 18.80 | d | C | 13.5 | LB | 6.3M | 8 | a600 | 1.3 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 30.48 | axC | | 13.3 | HV | 35.0C | 9 | a720 | 2 | | 4 | | | S 3.20m | KAIaSI3 | 5 | | ST2 | TSU02 | |
| 2003 11 01.55 | x | C | 15.4 | TJ | 25.0L | 5 | a120 | 0.5 | | | | | S 0.5 m | K42 | SI4 | 5 | U | SE7 | OHS |
| 2003 11 16.51 | a | C | 13.6 | GA | 60.0Y | 6 | a120 | 1.8 | s0/ | | | | S 1.8 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 11 16.51 | a | c | 16.5 | GA | 60.0Y | 6 | a120 | | | | | | S10.0 s | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 11 23.45 | a | C | 13.9 | GA | 60.0Y | 6 | a120 | 1.7 | s0/ | | | | S 1.7 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 11 23.45 | a | c | 16.6 | GA | 60.0Y | 6 | a120 | | | | | | S10.0 s | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 11 23.50 | axC | | 15.5 | HV | 35.0C | 9 | a120 | 0.5 | | 5 | | | S 0.59m | KAIaSI3 | 5 | | ST2 | TSU02 | |
| 2003 11 26.44 | axC | | 15.9 | TJ | 25.0L | 5 | a120 | 0.6 | | | | | S 0.6 m | K42 | SI4 | 5 | U | SE7 | OHS |
| 2003 12 14.43 | | C | 13.7 | GA | 60.0Y | 6 | a120 | 1.9 | | | | | S 1.9 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 14.43 | | C | 14.8 | GA | 60.0Y | 6 | a120 | 1.9 | | | | | S 0.35m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 14.49 | x | C | 14.6 | TJ | 25.0L | 5 | a120 | 0.6 | | | | | S 0.6 m | K42 | SI4 | 5 | U | SE7 | OHS |
| 2003 12 21.43 | axC | | 14.7 | HV | 35.0C | 9 | a120 | 0.7 | | 4 | | | S 0.74m | KAIaSI3 | 5 | | ST2 | TSU02 | |
| 2003 12 23.67 | | C | 16.5 | UO | 11.0L | 7 | a240 | 0.17 | | 2 | | | C 0.17m | T25 | A32 | 4 | | PIX | SHU |
| 2004 01 19.38 | axC | | 15.6 | HV | 35.0C | 9 | a450 | 0.4 | | 4 | | | S 0.76m | KAIaSI3 | 5 | | ST2 | TSU02 | |

Comet 36P/Whipple

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|------|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 11 23.57 | | C | 18.4 | GA | 60.0Y | 6 | a240 | 0.25 | | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 28.51 | | C | 18.9 | GA | 60.0Y | 6 | a240 | 0.3 | | | | | S 0.3 m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet 40P/Vaisala

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|-----|---|------|----|-------|---|------|------|------|----|------|---------|---------|-----|-----|---|---|-----|------|
| 2003 11 01.79 | axC | | 16.8 | TJ | 25.0L | 5 | a120 | 0.3 | | | | 0.9m283 | S 0.3 m | K42 | SI4 | 5 | U | SE7 | OHS |

Comet 43P/Wolf-Harrington

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|------|---|------|------|------|----|------|----|---------|-----|-----|----|-----|-----|------|
| 2003 09 14.90 | d | C | 14.5 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 14.90 | d | C | 14.5 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 14.90 | d | C | 14.7 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 15.82 | d | C | 14.4 | LB | 6.3M | 8 | a600 | 0.6 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 15.82 | d | C | 14.7 | LB | 6.3M | 8 | a600 | 0.6 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 18.87 | d | C | 14.5 | LB | 6.3M | 8 | a600 | 0.6 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 18.87 | d | C | 14.7 | LB | 6.3M | 8 | a600 | 0.6 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 19.93 | d | C | 14.3 | LB | 6.3M | 8 | a600 | 0.9 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 19.93 | d | C | 14.6 | LB | 6.3M | 8 | a600 | 0.9 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 19.93 | d | C | 14.7 | LB | 6.3M | 8 | a600 | 0.9 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 21.85 | d | C | 14.5 | LB | 6.3M | 8 | a600 | 0.6 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 21.85 | d | C | 14.6 | LB | 6.3M | 8 | a600 | 0.6 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 21.85 | d | C | 14.8 | LB | 6.3M | 8 | a600 | 0.6 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 22.94 | d | C | 14.3 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 22.94 | d | C | 14.4 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 22.94 | d | C | 14.5 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |

Comet 43P/Wolf-Harrington [cont.]

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|-----|---|------|----|-------|---|------|------|------|----|---------|----|---------|---------|-----|-----|-------|-------|------|
| 2003 09 25.81 | d | C | 13.7 | LB | 6.3M | 8 | a600 | 0.7 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 25.81 | d | C | 14.0 | LB | 6.3M | 8 | a600 | 0.7 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 25.81 | d | C | 14.7 | LB | 6.3M | 8 | a600 | 0.7 | | | | | S 0.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 17.84 | d | C | 13.8 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 17.84 | d | C | 14.0 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 17.84 | d | C | 14.2 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 18.82 | d | C | 13.6 | LB | 6.3M | 8 | a540 | 0.8 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 18.82 | d | C | 13.7 | LB | 6.3M | 8 | a540 | 0.8 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 18.82 | d | C | 13.9 | LB | 6.3M | 8 | a540 | 0.8 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 28.93 | d | C | 13.6 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 28.93 | d | C | 13.8 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 28.93 | d | C | 13.9 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 05.82 | d | C | 13.2 | LB | 6.3M | 8 | a600 | 0.7 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 05.82 | d | C | 13.3 | LB | 6.3M | 8 | a600 | 0.7 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 05.82 | d | C | 13.5 | LB | 6.3M | 8 | a600 | 0.7 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 12.85 | d | C | 13.5 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 12.85 | d | C | 13.8 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 12.85 | d | C | 14.0 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 16.52 | C | | 13.9 | GA | 60.0Y | 6 | a120 | 1.05 | | | | | S 1.05m | SIA | IPL | 5 | U Ap7 | NAK01 | |
| 2003 11 23.52 | axC | | 14.0 | HV | 35.0C | 9 | a120 | 0.7 | 5 | | 3.1m 82 | S | 1.18m | KAIaSI3 | 5 | ST2 | TSU02 | | |
| 2003 11 26.48 | x | C | 13.6 | TJ | 25.0L | 5 | a120 | 1.0 | | | 1.9m 71 | S | 1.0 m | K42 | SI4 | 5 | U SE7 | OHS | |
| 2003 12 02.80 | d | C | 13.4 | LB | 6.3M | 8 | a480 | 1.0 | | | 1.4m 63 | C | 1.25m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 02.80 | d | C | 13.6 | LB | 6.3M | 8 | a480 | 1.0 | | | 1.4m 63 | C | 1.00m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 02.80 | d | C | 13.8 | LB | 6.3M | 8 | a480 | 1.0 | | | 1.4m 63 | C | 0.75m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 09.78 | d | C | 13.3 | LB | 6.3M | 8 | a600 | 0.8 | | | 1.4m 50 | C | 1.25m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 09.78 | d | C | 13.5 | LB | 6.3M | 8 | a600 | 0.8 | | | 1.4m 50 | C | 1.00m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 09.78 | d | C | 13.7 | LB | 6.3M | 8 | a600 | 0.8 | | | 1.4m 50 | C | 0.75m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 14.47 | C | | 13.5 | GA | 60.0Y | 6 | a120 | 1.1 | | | 3.4m 65 | S | 1.1 m | SIA | IPL | 5 | U Ap7 | NAK01 | |
| 2003 12 14.48 | x | C | 13.1 | TJ | 25.0L | 5 | a120 | 1.1 | | | 1.9m 60 | S | 1.1 m | K42 | SI4 | 5 | U SE7 | OHS | |
| 2003 12 22.41 | axC | | 14.1 | HV | 35.0C | 9 | a 60 | 0.7 | 5 | | 2.5m 66 | S | 0.72m | KAIaSI3 | 5 | ST2 | TSU02 | | |
| 2003 12 23.45 | axC | | 13.6 | HV | 35.0C | 9 | a120 | 0.9 | 5 | | 2.7m 54 | S | 1.25m | KAIaSI3 | 5 | ST2 | TSU02 | | |
| 2003 12 23.70 | C | | 16.0 | UO | 11.0L | 7 | a240 | 0.30 | 3/ | | | C | 0.30m | T25 | A32 | 4 | PIX | SHU | |
| 2003 12 26.81 | d | C | 13.1 | LB | 6.3M | 8 | a600 | 1.1 | | | 1.3m 45 | C | 1.50m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 26.81 | d | C | 13.2 | LB | 6.3M | 8 | a600 | 1.1 | | | 1.3m 45 | C | 1.25m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 26.81 | d | C | 13.4 | LB | 6.3M | 8 | a600 | 1.1 | | | 1.3m 45 | C | 1.00m | K40 | GAI | 5* | ST7 | SRB | |
| 2004 01 09.47 | axC | | 13.1 | HV | 35.0C | 9 | a 90 | 0.7 | 5 | | 2.3m 46 | S | 1.39m | KAIaSI3 | 5 | ST2 | TSU02 | | |
| 2004 01 17.45 | C | | 13.1 | GA | 60.0Y | 6 | a120 | 1.5 | | | 2.6m 52 | S | 1.5 m | SIA | IPL | 5 | U Ap7 | NAK01 | |

Comet 53P/Van Biesbroeck

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|------|---|------|------|------|----|------|----|---------|-----|-----|-----|-----|-------|------|
| 2003 06 18.00 | d | k | 13.7 | LA | 35 | L | 5 | a780 | 0.82 | | | | C 0.82m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 18.00 | d | k | 14.1 | LA | 35 | L | 5 | a780 | 0.82 | | | | C 0.50m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 22.00 | d | k | 13.8 | LA | 35 | L | 5 | a330 | 0.9 | | | | C 0.90m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 22.00 | d | k | 14.2 | LA | 35 | L | 5 | a330 | 0.9 | | | | C 0.50m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 24.98 | d | k | 13.9 | LA | 35 | L | 5 | a600 | 0.92 | | | | C 0.92m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 24.98 | d | k | 14.3 | LA | 35 | L | 5 | a600 | 0.92 | | | | C 0.50m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 25.92 | d | C | 13.5 | LB | 6.3M | 8 | a360 | 0.8 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 06 25.92 | d | C | 13.5 | LB | 6.3M | 8 | a360 | 0.8 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 06 25.92 | d | C | 13.8 | LB | 6.3M | 8 | a360 | 0.8 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 06 25.99 | d | k | 13.6 | LA | 35 | L | 5 | a600 | 1.00 | | | | C 1.00m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 25.99 | d | k | 14.1 | LA | 35 | L | 5 | a600 | 1.00 | | | | C 0.50m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 29.92 | d | C | 13.4 | LB | 6.3M | 8 | a420 | 0.8 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 06 29.92 | d | C | 13.6 | LB | 6.3M | 8 | a420 | 0.8 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 06 29.92 | d | C | 14.0 | LB | 6.3M | 8 | a420 | 0.8 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 06 29.97 | d | k | 13.6 | LA | 35 | L | 5 | a300 | 0.80 | | | | C 1.50m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 29.97 | d | k | 13.8 | LA | 35 | L | 5 | a300 | 0.80 | | | | C 0.80m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 29.97 | d | k | 14.1 | LA | 35 | L | 5 | a300 | 0.80 | | | | C 0.50m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 02.92 | d | C | 13.8 | LB | 6.3M | 8 | a420 | 0.8 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 07 02.92 | d | C | 13.9 | LB | 6.3M | 8 | a420 | 0.8 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 07 02.95 | d | k | 13.5 | LA | 35 | L | 5 | a480 | 0.90 | | | | C 1.50m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 02.95 | d | k | 13.8 | LA | 35 | L | 5 | a480 | 0.90 | | | | C 0.90m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 02.95 | d | k | 14.2 | LA | 35 | L | 5 | a480 | 0.90 | | | | C 0.50m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 07.96 | d | k | 14.0 | LA | 35 | L | 5 | a480 | 0.77 | | | | C 1.00m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 07.96 | d | k | 14.1 | LA | 35 | L | 5 | a480 | 0.77 | | | | C 0.77m | T24 | GAI | 5*P | ST6 | HOR02 | |

Comet 53P/Van Biesbroeck [cont.]

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|------|---|----|------|------|----|------|----|---------|-----|-----|----|---|-----|-------|
| 2003 07 07.96 | d | k | 14.3 | LA | 35 | L | 5 | a480 | 0.77 | | | | C 0.50m | T24 | GAI | 5* | P | ST6 | HORO2 |
| 2003 07 14.93 | d | k | 14.2 | LA | 35 | L | 5 | a660 | 0.67 | | | | C 0.67m | T24 | GAI | 5* | P | ST6 | HORO2 |
| 2003 07 18.91 | d | k | 13.9 | LA | 35 | L | 5 | a540 | 0.92 | | | | C 0.92m | T24 | GAI | 5* | P | ST6 | HORO2 |
| 2003 07 18.91 | d | k | 14.3 | LA | 35 | L | 5 | a540 | 0.92 | | | | C 0.50m | T24 | GAI | 5* | P | ST6 | HORO2 |
| 2003 07 19.89 | d | C | 13.9 | LB | 6.3M | | 8 | a600 | 0.9 | | | | S 1.40m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 07 19.89 | d | C | 14.3 | LB | 6.3M | | 8 | a600 | 0.9 | | | | S 1.10m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 07 19.89 | d | C | 14.5 | LB | 6.3M | | 8 | a600 | 0.9 | | | | S 0.60m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 07 19.92 | d | k | 13.7 | LA | 35 | L | 5 | a600 | 1.07 | | | | C 1.50m | T24 | GAI | 5* | P | ST6 | HORO2 |
| 2003 07 19.92 | d | k | 13.8 | LA | 35 | L | 5 | a600 | 1.07 | | | | C 1.07m | T24 | GAI | 5* | P | ST6 | HORO2 |
| 2003 07 19.92 | d | k | 14.3 | LA | 35 | L | 5 | a600 | 1.07 | | | | C 0.50m | T24 | GAI | 5* | P | ST6 | HORO2 |
| 2003 07 20.88 | d | C | 13.4 | LB | 6.3M | | 8 | a360 | 0.7 | | | | S 1.10m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 07 20.88 | d | C | 13.6 | LB | 6.3M | | 8 | a360 | 0.7 | | | | S 0.60m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 07 20.92 | d | k | 13.9 | LA | 35 | L | 5 | a420 | 0.75 | | | | C 1.00m | T24 | GAI | 5* | P | ST6 | HORO2 |
| 2003 07 20.92 | d | k | 14.0 | LA | 35 | L | 5 | a420 | 0.75 | | | | C 0.75m | T24 | GAI | 5* | P | ST6 | HORO2 |
| 2003 07 20.92 | d | k | 14.2 | LA | 35 | L | 5 | a420 | 0.75 | | | | C 0.50m | T24 | GAI | 5* | P | ST6 | HORO2 |
| 2003 07 27.87 | d | C | 13.8 | LB | 6.3M | | 8 | a660 | 1.0 | | | | S 1.10m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 07 27.87 | d | C | 13.9 | LB | 6.3M | | 8 | a660 | 1.0 | | | | S 0.90m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 07 27.87 | d | C | 14.2 | LB | 6.3M | | 8 | a660 | 1.0 | | | | S 0.60m | K40 | OPS | 5* | | ST7 | SRB |

Comet 104P/Kowal

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 11 17.45 | | C | 19.7 | GA | 60.0Y | | 6 | a240 | 0.2 | | | | S 0.2 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 11 23.44 | a | C | 19.5 | GA | 60.0Y | | 6 | a240 | 0.25 | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 14.42 | | C | 19.2 | GA | 60.0Y | | 6 | a240 | 0.25 | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet 116P/Wild

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|------|---|----|------|------|----|---------|----|---------|-----|-----|----|---|-----|------|
| 2003 05 29.98 | d | C | 11.5 | LB | 6.3M | | 8 | a600 | 1.1 | | 2.4m287 | | S 1.40m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 05 29.98 | d | C | 11.7 | LB | 6.3M | | 8 | a600 | 1.1 | | 2.4m287 | | S 1.10m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 05 29.98 | d | C | 11.9 | LB | 6.3M | | 8 | a600 | 1.1 | | 2.4m287 | | S 0.90m | K40 | OPS | 5* | | ST7 | SRB |

Comet 117P/Helin-Roman-Alu

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|------|----|---------|-----|-----|---|---|-----|------|
| 2003 12 28.66 | x | C | 18.4 | TJ | 25.0L | | 5 | a240 | 0.2 | | | | S 0.2 m | K42 | SI4 | 5 | U | SE7 | OHS |
| 2004 01 03.83 | x | C | 19.2 | TJ | 25.0L | | 5 | a300 | 0.2 | | | | S 0.2 m | K42 | SI4 | 5 | U | SE7 | OHS |

Comet 118P/Shoemaker-Levy

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|---------|----|---------|-----|-----|---|---|-----|------|
| 2003 11 01.77 | x | C | 15.7 | TJ | 25.0L | | 5 | a120 | 0.4 | | 1.5m288 | | S 0.4 m | K42 | SI4 | 5 | U | SE7 | OHS |

Comet 121P/Shoemaker-Holt

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 11 17.55 | | C | 19.4 | GA | 60.0Y | | 6 | a240 | 0.25 | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 11 23.54 | | C | 19.1 | GA | 60.0Y | | 6 | a240 | 0.25 | 8 | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet 123P/West-Hartley

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|----|---|------|----|-------|---|----|------|------|----|---------|----|---------|-----|-----|---|---|-----|-------|
| 2003 11 01.76 | x | C | 16.0 | TJ | 25.0L | | 5 | a120 | 0.4 | | 1.0m297 | | S 0.4 m | K42 | SI4 | 5 | U | SE7 | OHS |
| 2003 12 01.82 | a | C | 15.0 | GA | 60.0Y | | 6 | a120 | 0.85 | | 4.4m299 | | S 0.85m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 28.72 | wx | C | 14.5 | TJ | 25.0L | | 5 | a120 | 0.5 | | 2.0m301 | | S 0.5 m | K42 | SI4 | 5 | U | SE7 | OHS |
| 2004 01 17.08 | | C | 14.8 | UO | 11.0L | | 7 | a180 | 0.33 | 3 | | | C 0.33m | T25 | A32 | 4 | | PIX | SHU |
| 2004 01 21.67 | x | C | 14.8 | TJ | 25.0L | | 5 | a120 | 0.6 | | 2.1m295 | | S 0.6 m | K42 | SI4 | 5 | U | SE7 | OHS |

Comet 127P/Holt-Olmstead

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 11 23.61 | | C | 19.6 | GA | 60.0Y | | 6 | a240 | 0.2 | | | | S 0.2 m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet 129P/Shoemaker-Levy

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 11 23.49 | | C | 19.9 | GA | 60.0Y | | 6 | a240 | 0.25 | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet 133P/Elst-Pizarro

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 11 17.66 | | C | 20.6 | GA | 60.0Y | | 6 | a240 | | 9 | | | S 0.2 m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet 155P/Shoemaker

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|------|-----|---------|-----|-----|---|---|-----|-------|
| 2003 01 06.57 | x | C | 14.5 | TJ | 20.0C | | 9 | a180 | 0.4 | | 1.7m | 287 | C 0.8 m | K26 | SI4 | 5 | | ST9 | KON03 |

Comet 157P/Tritton

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|----|---|------|----|-------|---|----|------|------|----|--------|-----|---------|------|-----|---|---|-----|-------|
| 2003 10 30.84 | ax | C | 13.5 | HV | 35.0C | | 9 | a 60 | 0.4 | 3 | 4.5m | 294 | S 1.94m | KAIa | SI3 | 5 | | ST2 | TSU02 |
| 2003 11 01.75 | ax | C | 15.1 | TJ | 25.0L | | 5 | a120 | 0.4 | | 7.0m | 290 | S 0.4 m | K42 | SI4 | 5 | U | SE7 | OHS |
| 2003 12 03.78 | ax | C | 16.2 | HV | 35.0C | | 9 | A560 | 0.4 | 3 | 5.0m | 295 | S 1.00m | KAIa | SI3 | 5 | | ST2 | TSU02 |
| 2003 12 28.74 | wx | C | 17.2 | TJ | 25.0L | | 5 | a240 | 0.3 | | > 6.7m | 294 | S 0.3 m | K42 | SI4 | 5 | U | SE7 | OHS |

Comet 158P/Kowal-LINEAR

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|----|---|------|----|-------|---|----|------|------|----|------|-----|---------|------|-----|---|---|-----|-------|
| 2003 12 01.65 | | C | 18.9 | GA | 60.0Y | | 6 | a240 | 0.3 | | | 250 | S 0.3 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 23.64 | ax | C | 18.9 | HV | 35.0C | | 9 | C240 | 0.2 | 4 | | | S 0.53m | KAIa | SI3 | 5 | | ST2 | TSU02 |
| 2003 12 28.54 | | C | 18.7 | GA | 60.0Y | | 6 | a240 | 0.3 | | | | S 0.3 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2004 01 19.50 | ax | C | 18.6 | HV | 35.0C | | 9 | a540 | 0.2 | | | | S 0.61m | KAIa | SI3 | 5 | | ST2 | TSU02 |

Comet 159P/LONEOS

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 12 28.47 | | C | 19.5 | GA | 60.0Y | | 6 | a240 | 0.25 | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet C/1999 F1 (Catalina)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|------|-----|---------|-----|-----|---|---|-----|-------|
| 2003 11 23.55 | | C | 16.0 | HV | 60.0Y | | 6 | a240 | 0.55 | | 2.4m | 131 | S 0.55m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet C/2000 SV_74 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-----|---|----|------|------|----|------|----|---------|-----|-----|----|---|-----|-------|
| 2003 07 19.86 | d | k | 16.2 | LA | 35 | L | 5 | a720 | 0.6 | | | | C 0.60m | T24 | GAI | 5* | | ST6 | HOR02 |

Comet C/2001 B2 (NEAT)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 12 01.76 | | C | 19.1 | GA | 60.0Y | | 6 | a240 | 0.3 | | | | S 0.3 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 28.64 | | C | 18.9 | GA | 60.0Y | | 6 | a240 | 0.35 | | | | S 0.35m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet C/2001 HT_50 (LINEAR-NEAT)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|------|---|----|------|------|----|------|----|---------|-----|-----|----|---|-----|------|
| 2003 08 25.06 | d | C | 12.9 | LB | 6.3M | | 8 | a600 | 1.1 | | | | S 1.10m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 08 25.06 | d | C | 13.1 | LB | 6.3M | | 8 | a600 | 1.1 | | | | S 0.90m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 08 25.06 | d | C | 13.2 | LB | 6.3M | | 8 | a600 | 1.1 | | | | S 0.60m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 09 14.97 | d | C | 13.1 | LB | 6.3M | | 8 | a600 | 0.9 | | | | S 0.90m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 09 14.97 | d | C | 13.4 | LB | 6.3M | | 8 | a600 | 0.9 | | | | S 0.60m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 09 19.97 | d | C | 12.5 | LB | 6.3M | | 8 | a600 | 0.9 | | | | S 1.10m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 09 19.97 | d | C | 12.8 | LB | 6.3M | | 8 | a600 | 0.9 | | | | S 0.90m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 09 19.97 | d | C | 13.1 | LB | 6.3M | | 8 | a600 | 0.9 | | | | S 0.60m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 09 21.97 | d | C | 12.5 | LB | 6.3M | | 8 | a600 | 1.0 | | | | S 1.40m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 09 21.97 | d | C | 12.6 | LB | 6.3M | | 8 | a600 | 1.0 | | | | S 1.10m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 09 21.97 | d | C | 12.8 | LB | 6.3M | | 8 | a600 | 1.0 | | | | S 0.90m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 09 22.96 | d | C | 12.5 | LB | 6.3M | | 8 | a600 | 1.1 | | | | S 1.40m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 09 22.96 | d | C | 12.6 | LB | 6.3M | | 8 | a600 | 1.1 | | | | S 1.10m | K40 | OPS | 5* | | ST7 | SRB |

Comet C/2001 HT₅₀ (LINEAR-NEAT) [cont.]

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|----|---|------|----|-------|---|------|------|------|----|--------|------|---------|---------|-----|-----|-------|-------|-------|
| 2003 09 22.96 | d | C | 12.8 | LB | 6.3M | 8 | a600 | 1.1 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 25.94 | d | C | 12.7 | LB | 6.3M | 8 | a600 | 0.9 | | | | | S 1.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 25.94 | d | C | 12.9 | LB | 6.3M | 8 | a600 | 0.9 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 25.94 | d | C | 13.0 | LB | 6.3M | 8 | a600 | 0.9 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 17.89 | d | C | 11.9 | LB | 6.3M | 8 | a600 | 1.3 | | | 5 | m 95 | S 1.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 17.89 | d | C | 12.0 | LB | 6.3M | 8 | a600 | 1.3 | | | 5 | m 95 | S 1.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 17.89 | d | C | 12.0 | LB | 6.3M | 8 | a600 | 1.3 | | | 5 | m 95 | S 1.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 18.86 | d | C | 12.0 | LB | 6.3M | 8 | a600 | 1.3 | | | 5 | m100 | S 1.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 18.86 | d | C | 12.1 | LB | 6.3M | 8 | a600 | 1.3 | | | 5 | m100 | S 1.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 18.86 | d | C | 12.2 | LB | 6.3M | 8 | a600 | 1.3 | | | 5 | m100 | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 26.51 | x | C | 12.9 | TJ | 20.0C | 9 | a120 | 1.1 | | | | 8.4m | 90 | C 1.3 m | K26 | SI4 | 5 | ST9 | KON03 |
| 2003 10 28.96 | d | C | 11.6 | LB | 6.3M | 8 | a600 | 1.3 | | | 10 | m 92 | S 1.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 28.96 | d | C | 11.6 | LB | 6.3M | 8 | a600 | 1.3 | | | 10 | m 92 | S 1.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 28.96 | d | C | 11.6 | LB | 6.3M | 8 | a600 | 1.3 | | | 10 | m 92 | S 1.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 29.57 | ax | C | 12.2 | HV | 35.0C | 9 | a 90 | 1.5 | | 5 | > 8 | m 88 | S 1.86m | KAIaSI3 | 5 | ST2 | TSU02 | | |
| 2003 11 04.60 | a | H | 11.3 | LA | 30.0L | 6 | a600 | 1.8 | | | | | 90 | C 1.8 m | SIA | MIm | 5*U | Ap7 | EZA |
| 2003 11 04.61 | a | V | 12.2 | LA | 30.0L | 6 | a600 | 1.8 | | | | | 90 | C 1.8 m | SIA | MIm | 5*U | Ap7 | EZA |
| 2003 11 04.88 | d | C | 11.7 | LB | 6.3M | 8 | a600 | 1.3 | | | 8 | m 85 | S 1.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 04.88 | d | C | 11.8 | LB | 6.3M | 8 | a600 | 1.3 | | | 8 | m 85 | S 1.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 04.88 | d | C | 12.0 | LB | 6.3M | 8 | a600 | 1.3 | | | 8 | m 85 | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 05.87 | d | C | 12.0 | LB | 6.3M | 8 | a600 | 1.1 | | | | | S 1.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 05.87 | d | C | 12.1 | LB | 6.3M | 8 | a600 | 1.1 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 05.87 | d | C | 12.2 | LB | 6.3M | 8 | a600 | 1.1 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 12.87 | d | C | 11.7 | LB | 6.3M | 8 | a600 | 1.1 | | | 9 | m 84 | S 1.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 12.87 | d | C | 11.8 | LB | 6.3M | 8 | a600 | 1.1 | | | 9 | m 84 | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 12.87 | d | C | 12.0 | LB | 6.3M | 8 | a600 | 1.1 | | | 9 | m 84 | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 13.56 | a | V | 12.1 | LA | 30.0L | 6 | a600 | 1.8 | | | | | 90 | C 1.8 m | SIA | MIm | 5*U | Ap7 | EZA |
| 2003 11 13.57 | a | H | 11.4 | LA | 30.0L | 6 | a600 | 1.8 | | | | | 90 | C 1.8 m | SIA | MIm | 5*U | Ap7 | EZA |
| 2003 11 17.54 | | C | 12.1 | GA | 60.0Y | 6 | a120 | 2.0 | | | > 8.8m | 84 | S 2.0 m | SIA | IPL | 5 U | Ap7 | NAK01 | |
| 2003 11 23.57 | ax | C | 12.4 | HV | 35.0C | 9 | a 90 | 1.2 | | 5 | 10 | m 80 | S 2.08m | KAIaSI3 | 5 | ST2 | TSU02 | | |
| 2003 12 02.84 | d | C | 12.5 | LB | 6.3M | 8 | a600 | 0.7 | | | | | C 1.25m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 02.84 | d | C | 12.6 | LB | 6.3M | 8 | a600 | 0.7 | | | | | C 0.75m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 02.84 | d | C | 12.6 | LB | 6.3M | 8 | a600 | 0.7 | | | | | C 1.00m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 07.90 | d | C | 12.4 | LB | 6.3M | 8 | a600 | 1.0 | | | | | C 1.25m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 07.90 | d | C | 12.5 | LB | 6.3M | 8 | a600 | 1.0 | | | | | C 0.75m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 07.90 | d | C | 12.5 | LB | 6.3M | 8 | a600 | 1.0 | | | | | C 1.00m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 09.83 | d | C | 12.7 | LB | 6.3M | 8 | a600 | 1.0 | | | | | C 1.25m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 09.83 | d | C | 12.7 | LB | 6.3M | 8 | a600 | 1.0 | | | | | C 1.00m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 09.83 | d | C | 12.8 | LB | 6.3M | 8 | a600 | 1.0 | | | | | C 0.75m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 15.48 | ax | C | 13.0 | HV | 35.0C | 9 | a 60 | 1.0 | | 5 | 4 | m 80 | S 1.67m | KAIaSI3 | 5 | ST2 | TSU02 | | |
| 2003 12 23.48 | ax | C | 13.3 | HV | 35.0C | 9 | a120 | 1.1 | | 5 | 7 | m 74 | S 1.66m | KAIaSI3 | 5 | ST2 | TSU02 | | |
| 2003 12 23.77 | | C | 14.9 | UO | 11.0L | 7 | a120 | 0.20 | | 4 | | | C 0.20m | T25 | A32 | 4 | PIX | SHU | |
| 2003 12 26.83 | d | C | 13.1 | LB | 6.3M | 8 | a600 | 1.0 | | | | | C 1.50m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 26.83 | d | C | 13.3 | LB | 6.3M | 8 | a600 | 1.0 | | | | | C 1.25m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 26.83 | d | C | 13.3 | LB | 6.3M | 8 | a600 | 1.0 | | | | | C 1.00m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 28.44 | | C | 13.3 | GA | 60.0Y | 6 | a120 | 1.15 | | | > 8.0m | 77 | S 1.15m | SIA | IPL | 5 U | Ap7 | NAK01 | |
| 2004 01 17.46 | | C | 13.6 | GA | 60.0Y | 6 | a120 | 1.25 | | | > 8.3m | 78 | S 1.25m | SIA | IPL | 5 U | Ap7 | NAK01 | |
| 2004 01 19.39 | ax | C | 13.7 | HV | 35.0C | 9 | a120 | 0.8 | | 5 | 4 | m 73 | S 1.14m | KAIaSI3 | 5 | ST2 | TSU02 | | |
| 2004 01 22.66 | | C | 15.4 | UO | 11.0L | 7 | a120 | 0.16 | | 3 | | | C 0.16m | T25 | A32 | 4 | PIX | SHU | |

Comet C/2001 K5 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-----|---|----|------|------|----|------|---------|---------|---------|-----|-----|-----|-------|-------|
| 2003 06 16.97 | d | k | 14.6 | LA | 35 | L | 5 | a360 | 0.40 | | | | 7.5m222 | C 1.00m | T24 | GAI | 5*P | ST6 | HOR02 |
| 2003 06 16.97 | d | k | 15.0 | LA | 35 | L | 5 | a360 | 0.40 | | | | 7.5m222 | C 0.40m | T24 | GAI | 5*P | ST6 | HOR02 |
| 2003 06 17.97 | d | k | 14.6 | LA | 35 | L | 5 | a720 | 0.45 | | | | 8.9m220 | C 1.00m | T24 | GAI | 5*P | ST6 | HOR02 |
| 2003 06 17.97 | d | k | 15.1 | LA | 35 | L | 5 | a720 | 0.45 | | | | 8.9m220 | C 0.45m | T24 | GAI | 5*P | ST6 | HOR02 |
| 2003 06 21.06 | d | k | 14.7 | LA | 35 | L | 5 | a540 | 0.42 | | | | 8.0m219 | C 1.00m | T24 | GAI | 5*P | ST6 | HOR02 |
| 2003 06 21.06 | d | k | 15.1 | LA | 35 | L | 5 | a540 | 0.42 | | | | 8.0m219 | C 0.42m | T24 | GAI | 5*P | ST6 | HOR02 |
| 2003 06 22.03 | d | k | 14.7 | LA | 35 | L | 5 | a540 | 0.48 | | > | 6.9m218 | C 1.00m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 22.03 | d | k | 15.1 | LA | 35 | L | 5 | a540 | 0.48 | | > | 6.9m218 | C 0.48m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 24.94 | d | k | 14.7 | LA | 35 | L | 5 | a600 | 0.42 | | | | 9.1m218 | C 1.00m | T24 | GAI | 5*P | ST6 | HOR02 |
| 2003 06 24.94 | d | k | 15.1 | LA | 35 | L | 5 | a600 | 0.42 | | | | 9.1m218 | C 0.42m | T24 | GAI | 5*P | ST6 | HOR02 |
| 2003 06 25.91 | d | k | 14.6 | LA | 35 | L | 5 | a540 | 0.43 | | | | 8.8m217 | C 1.00m | T24 | GAI | 5*P | ST6 | HOR02 |
| 2003 06 25.91 | d | k | 15.0 | LA | 35 | L | 5 | a540 | 0.43 | | | | 8.8m217 | C 0.43m | T24 | GAI | 5*P | ST6 | HOR02 |

Comet C/2001 K5 (LINEAR) [cont.]

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|----|---|------|----|-------|---|----|------|------|----|-----------|----|---------|---------|-----|-----|-----|-------|------|
| 2003 07 02.91 | d | k | 14.7 | LA | 35 | L | 5 | a540 | 0.43 | | 10.5m217 | C | 1.00m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 07 02.91 | d | k | 15.2 | LA | 35 | L | 5 | a540 | 0.43 | | 10.5m217 | C | 0.43m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 07 08.05 | d | k | 14.4 | LA | 35 | L | 5 | a600 | 0.55 | | 10.4m215 | C | 1.50m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 07 08.05 | d | k | 14.7 | LA | 35 | L | 5 | a600 | 0.55 | | 10.4m215 | C | 1.00m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 07 08.05 | d | k | 15.1 | LA | 35 | L | 5 | a600 | 0.55 | | 10.4m215 | C | 0.55m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 07 08.92 | d | k | 14.7 | LA | 35 | L | 5 | a540 | 0.50 | | 9.8m214 | C | 1.00m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 07 08.92 | d | k | 15.1 | LA | 35 | L | 5 | a540 | 0.50 | | 9.8m214 | C | 0.50m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 07 10.99 | d | k | 14.6 | LA | 35 | L | 5 | a600 | 0.42 | | 10.8m215 | C | 1.00m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 07 10.99 | d | k | 15.2 | LA | 35 | L | 5 | a600 | 0.42 | | 10.8m215 | C | 0.50m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 07 14.97 | d | k | 14.6 | LA | 35 | L | 5 | a600 | 0.37 | | 10.2m214 | C | 1.00m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 07 14.97 | d | k | 15.2 | LA | 35 | L | 5 | a600 | 0.37 | | 10.2m214 | C | 0.37m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 07 16.02 | d | k | 14.7 | LA | 35 | L | 5 | a420 | 0.48 | | > 8.9m215 | C | 1.00m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 07 16.02 | d | k | 15.1 | LA | 35 | L | 5 | a420 | 0.48 | | > 8.9m215 | C | 0.48m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 07 18.99 | d | k | 14.8 | LA | 35 | L | 5 | a420 | 0.42 | | 9.6m212 | C | 1.00m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 07 18.99 | d | k | 15.1 | LA | 35 | L | 5 | a420 | 0.42 | | 9.6m212 | C | 0.42m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 07 19.92 | d | C | 14.2 | LB | 6.3M | | 8 | a600 | 0.7 | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 07 19.92 | d | C | 14.3 | LB | 6.3M | | 8 | a600 | 0.7 | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 07 19.92 | d | C | 14.7 | LB | 6.3M | | 8 | a600 | 0.7 | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 07 19.97 | d | k | 14.8 | LA | 35 | L | 5 | a600 | 0.52 | | 11.9m210 | C | 1.00m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 07 19.97 | d | k | 15.1 | LA | 35 | L | 5 | a600 | 0.52 | | 11.9m210 | C | 0.52m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 07 20.93 | d | C | 14.1 | LB | 6.3M | | 8 | a660 | 0.7 | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 07 20.93 | d | C | 14.7 | LB | 6.3M | | 8 | a660 | 0.7 | | | | S 0.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 07 20.96 | d | k | 15.0 | LA | 35 | L | 5 | a570 | 0.43 | | 9.9m210 | C | 0.43m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 07 27.92 | d | C | 14.2 | LB | 6.3M | | 8 | a480 | 0.6 | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 07 27.92 | d | C | 14.5 | LB | 6.3M | | 8 | a480 | 0.6 | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 07 27.92 | d | C | 14.9 | LB | 6.3M | | 8 | a480 | 0.6 | | | | S 0.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 08 23.87 | d | C | 14.3 | LB | 6.3M | | 8 | a900 | 0.5 | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 08 23.87 | d | C | 14.7 | LB | 6.3M | | 8 | a900 | 0.5 | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 08 23.87 | d | C | 15.3 | LB | 6.3M | | 8 | a900 | 0.5 | | | | S 0.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 08 24.92 | d | C | 14.6 | LB | 6.3M | | 8 | a900 | 0.7 | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 08 24.92 | d | C | 14.7 | LB | 6.3M | | 8 | a900 | 0.7 | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 08 24.92 | d | C | 15.1 | LB | 6.3M | | 8 | a900 | 0.7 | | | | S 0.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 08 25.93 | d | C | 14.8 | LB | 6.3M | | 8 | a540 | 0.4 | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 08 25.93 | d | C | 15.3 | LB | 6.3M | | 8 | a540 | 0.4 | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 08 25.93 | d | C | 15.7 | LB | 6.3M | | 8 | a540 | 0.4 | | | | S 0.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 14.81 | d | C | 14.1 | LB | 6.3M | | 8 | a600 | 0.6 | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 14.81 | d | C | 14.5 | LB | 6.3M | | 8 | a600 | 0.6 | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 14.81 | d | C | 14.5 | LB | 6.3M | | 8 | a600 | 0.6 | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 15.80 | d | C | 14.4 | LB | 6.3M | | 8 | a600 | 0.6 | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 18.81 | d | C | 14.4 | LB | 6.3M | | 8 | a600 | 0.8 | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 18.81 | d | C | 14.8 | LB | 6.3M | | 8 | a600 | 0.8 | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 21.87 | d | C | 14.3 | LB | 6.3M | | 8 | a600 | 0.5 | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 21.87 | d | C | 14.7 | LB | 6.3M | | 8 | a600 | 0.5 | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 22.92 | d | C | 14.6 | LB | 6.3M | | 8 | a600 | 0.4 | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 22.92 | d | C | 15.1 | LB | 6.3M | | 8 | a600 | 0.4 | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 22.92 | d | C | 15.6 | LB | 6.3M | | 8 | a600 | 0.4 | | | | S 0.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 25.84 | d | C | 14.3 | LB | 6.3M | | 8 | a600 | 0.4 | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 25.84 | d | C | 14.6 | LB | 6.3M | | 8 | a600 | 0.4 | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 25.84 | d | C | 14.9 | LB | 6.3M | | 8 | a600 | 0.4 | | | | S 0.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 14.39 | ax | C | 15.5 | HV | 35.0C | | 9 | a120 | 0.3 | 4 | 5.0m223 | S | 0.41m | KAIaSI3 | 5 | | ST2 | TSU02 | |
| 2003 12 21.39 | ax | C | 16.4 | HV | 35.0C | | 9 | a120 | 0.3 | 4 | 4.3m238 | S | 0.43m | KAIaSI3 | 5 | | ST2 | TSU02 | |

Comet C/2001 RX_14 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|----------|----|---------|-----|-----|-----|-----|-------|-------|
| 2003 01 06.61 | x | C | 12.9 | TJ | 20.0C | | 9 | a120 | 0.7 | | 15.8m316 | C | 1.0 m | K26 | SI4 | 5 | | ST9 | KON03 |
| 2003 05 24.87 | d | C | 13.4 | LB | 6.3M | | 8 | a120 | 0.6 | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 05 24.87 | d | C | 13.6 | LB | 6.3M | | 8 | a120 | 0.6 | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 05 24.87 | d | C | 13.9 | LB | 6.3M | | 8 | a120 | 0.6 | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 05 29.87 | d | C | 13.7 | LB | 6.3M | | 8 | a600 | 0.8 | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 05 29.87 | d | C | 13.9 | LB | 6.3M | | 8 | a600 | 0.8 | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 05 29.87 | d | C | 14.2 | LB | 6.3M | | 8 | a600 | 0.8 | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 06 16.86 | d | k | 14.0 | LA | 35 | L | 5 | a720 | 1.4 | | | | C 1.40m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 06 16.86 | d | k | 14.3 | LA | 35 | L | 5 | a720 | 1.4 | | | | C 1.00m | T24 | GAI | 5*P | ST6 | HORO2 | |
| 2003 06 16.86 | d | k | 14.6 | LA | 35 | L | 5 | a720 | 1.4 | | | | C 0.50m | T24 | GAI | 5*P | ST6 | HORO2 | |

Comet C/2001 RX_14 (LINEAR) [cont.]

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-----|---|----|------|------|----|------|----|---------|-----|-----|----|---|-----|-------|
| 2003 06 17.86 | d | k | 14.3 | LA | 35 | L | 5 | a420 | 0.7 | | | | C 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 17.86 | d | k | 14.5 | LA | 35 | L | 5 | a420 | 0.7 | | | | C 0.70m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 17.86 | d | k | 14.8 | LA | 35 | L | 5 | a420 | 0.7 | | | | C 0.50m | T24 | GAI | 5* | P | ST6 | HOR02 |

Comet C/2001 T4 (NEAT)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|------|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 11 17.58 | | | 18.7 | GA | 60.0Y | 6 | a240 | 0.25 | | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 11 23.58 | | | 18.8 | GA | 60.0Y | 6 | a240 | 0.3 | | | | | S 0.3 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 28.53 | | | 19.2 | GA | 60.0Y | 6 | a240 | 0.25 | | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet C/2002 CE_10 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|----|---|------|----|-------|---|------|------|------|----|------|----|---------|------|-----|---|---|-----|-------|
| 2003 10 19.48 | ax | C | 17.5 | HV | 35.0C | 9 | a720 | 0.2 | | 4 | | | S 0.64m | KAIa | SI3 | 5 | | ST2 | TSU02 |

Comet P/2002 LZ_11 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|------|------|------|----|------|-----|---------|-----|-----|---|---|-----|-------|
| 2003 11 22.58 | | | 17.3 | TJ | 60.0Y | 6 | a240 | 0.3 | | | | | S 0.3 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 11 23.53 | | | 17.3 | GA | 60.0Y | 6 | a240 | 0.45 | | | 1.3m | 260 | S 0.45m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 28.49 | | | 18.4 | GA | 60.0Y | 6 | a240 | 0.35 | | | | | S 0.35m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet C/2002 07 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|------|---|------|------|------|----|------|----|---------|-----|-----|----|---|-----|-------|
| 2003 05 29.93 | d | C | 13.8 | LB | 6.3M | 8 | a480 | 0.9 | | | | | S 1.10m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 05 29.93 | d | C | 14.0 | LB | 6.3M | 8 | a480 | 0.9 | | | | | S 0.90m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 05 29.93 | d | C | 14.1 | LB | 6.3M | 8 | a480 | 0.9 | | | | | S 0.60m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 06 16.88 | d | k | 13.5 | LA | 35 | L | 5 | a600 | 1.0 | | 2.4m | 63 | C 2.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 16.88 | d | k | 14.0 | LA | 35 | L | 5 | a600 | 1.0 | | 2.4m | 63 | C 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 17.88 | d | k | 13.6 | LA | 35 | L | 5 | a480 | 1.1 | | 3.5m | 70 | C 2.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 17.88 | d | k | 14.0 | LA | 35 | L | 5 | a480 | 1.1 | | 3.5m | 70 | C 1.10m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 17.88 | d | k | 14.7 | LA | 35 | L | 5 | a480 | 1.1 | | 3.5m | 70 | C 0.50m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 24.87 | d | k | 13.8 | LA | 35 | L | 5 | a540 | 0.92 | | 2.2m | 77 | C 0.92m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 24.87 | d | k | 14.3 | LA | 35 | L | 5 | a540 | 0.92 | | 2.2m | 77 | C 0.50m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 25.87 | d | k | 13.3 | LA | 35 | L | 5 | a540 | 1.05 | | 2.5m | 65 | C 2.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 25.87 | d | k | 13.8 | LA | 35 | L | 5 | a540 | 1.05 | | 2.5m | 65 | C 1.05m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 25.87 | d | k | 14.4 | LA | 35 | L | 5 | a540 | 1.05 | | 2.5m | 65 | C 0.50m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 29.86 | d | k | 13.2 | LA | 35 | L | 5 | a600 | 1.0 | | 1.8m | 73 | C 2.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 29.86 | d | k | 13.6 | LA | 35 | L | 5 | a600 | 1.0 | | 1.8m | 73 | C 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 29.86 | d | k | 14.1 | LA | 35 | L | 5 | a600 | 1.0 | | 1.8m | 73 | C 0.50m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 02.87 | d | k | 13.0 | LA | 35 | L | 5 | a600 | 0.8 | | 2.6m | 71 | C 2.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 02.87 | d | k | 13.5 | LA | 35 | L | 5 | a600 | 0.8 | | 2.6m | 71 | C 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 02.87 | d | k | 13.6 | LA | 35 | L | 5 | a600 | 0.8 | | 2.6m | 71 | C 0.80m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 02.87 | d | k | 14.1 | LA | 35 | L | 5 | a600 | 0.8 | | 2.6m | 71 | C 0.50m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 02.88 | d | C | 11.8 | LB | 6.3M | 8 | a300 | 0.8 | | | | | S 1.10m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 07 02.88 | d | C | 11.9 | LB | 6.3M | 8 | a300 | 0.8 | | | | | S 0.90m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 07 02.88 | d | C | 12.2 | LB | 6.3M | 8 | a300 | 0.8 | | | | | S 0.60m | K40 | OPS | 5* | | ST7 | SRB |

Comet C/2002 R3 (LONEOS)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|------|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 08 18.98 | | | 15.7 | UO | 11.0L | 7 | a720 | 0.33 | | 4 | | | C 0.33m | T25 | A32 | 4 | | PIX | SHU |
| 2003 11 17.46 | | | 16.8 | GA | 60.0Y | 6 | a120 | 0.4 | | | | | S 0.4 m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet P/2002 T5 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|------|------|------|----|------|-----|---------|-----|-----|---|---|-----|-------|
| 2003 11 01.68 | x | | 18.0 | TJ | 25.0L | 5 | a120 | 0.2 | | | | | S 0.2 m | K42 | SI4 | 5 | U | SE7 | OHS |
| 2003 12 01.74 | | | 16.8 | GA | 60.0Y | 6 | a240 | 0.4 | | | | | S 0.4 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 28.72 | | | 16.3 | GA | 60.0Y | 6 | a240 | 0.6 | | | 1.8m | 257 | S 0.6 m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet P/2002 T6 (NEAT-LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|-----|---|------|----|-------|---|------|------|------|----|------|----|---------|------|-----|---|---|-----|-------|
| 2003 12 01.73 | | C | 15.5 | GA | 60.0Y | 6 | a120 | 0.6 | | | | | S 0.6 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 28.59 | | C | 15.4 | GA | 60.0Y | 6 | a120 | 0.55 | | | | | S 0.55m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 28.62 | x | C | 15.6 | TJ | 25.0L | 5 | a240 | 0.3 | | | | | S 0.3 m | K42 | SI4 | 5 | U | SE7 | OHS |
| 2003 12 30.55 | axC | C | 15.7 | HV | 35.0C | 9 | a120 | 0.3 | | 5 | | | S 0.57m | KAIa | SI4 | 5 | U | ST2 | TSU02 |
| 2004 01 15.59 | | C | 15.9 | GA | 60.0Y | 6 | a120 | 0.4 | | | | | S 0.4 m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet C/2002 T7 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|-----|---|------|----|-------|---|------|------|------|----|---------|---------|---------|------|-----|-----|-----|-------|-------|
| 2003 08 25.03 | d | C | 12.7 | LB | 6.3M | 8 | a840 | 1.1 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 08 25.03 | d | C | 12.7 | LB | 6.3M | 8 | a840 | 1.1 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 08 25.03 | d | C | 12.8 | LB | 6.3M | 8 | a840 | 1.1 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 21.94 | d | C | 12.2 | LB | 6.3M | 8 | a600 | 1.2 | | | | | S 1.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 21.94 | d | C | 12.2 | LB | 6.3M | 8 | a600 | 1.2 | | | | | S 1.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 21.94 | d | C | 12.3 | LB | 6.3M | 8 | a600 | 1.2 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 22.99 | d | C | 12.2 | LB | 6.3M | 8 | a600 | 1.1 | | | | | S 1.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 22.99 | d | C | 12.3 | LB | 6.3M | 8 | a600 | 1.1 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 22.99 | d | C | 12.4 | LB | 6.3M | 8 | a600 | 1.1 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 17.91 | d | C | 11.1 | LB | 6.3M | 8 | a600 | 1.2 | | | | | S 1.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 17.91 | d | C | 11.2 | LB | 6.3M | 8 | a600 | 1.2 | | | | | S 1.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 17.91 | d | C | 11.3 | LB | 6.3M | 8 | a600 | 1.2 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 18.89 | d | C | 11.3 | LB | 6.3M | 8 | a600 | 1.3 | | | | | S 1.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 18.89 | d | C | 11.4 | LB | 6.3M | 8 | a600 | 1.3 | | | | | S 1.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 18.89 | d | C | 11.7 | LB | 6.3M | 8 | a600 | 1.3 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 26.53 | x | C | 11.9 | TJ | 20.0C | 9 | a120 | 1.3 | | | | | C 1.5 m | K26 | SI4 | 5 | ST9 | KON03 | |
| 2003 10 28.98 | d | C | 10.6 | LB | 6.3M | 8 | a600 | 1.6 | | | | | S 1.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 28.98 | d | C | 10.6 | LB | 6.3M | 8 | a600 | 1.6 | | | | | S 1.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 28.98 | d | C | 10.7 | LB | 6.3M | 8 | a600 | 1.6 | | | | | S 1.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 10 29.59 | axC | C | 11.3 | HV | 35.0C | 9 | a 90 | 1.6 | | 5 | 2.5m230 | | S 1.73m | KAIa | SI4 | 5 | ST2 | TSU02 | |
| 2003 11 04.52 | a | H | 10.2 | LA | 30.0L | 6 | a480 | 1.8 | | | | | C 1.8 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 11 04.64 | a | V | 11.1 | LA | 30.0L | 6 | a480 | 1.8 | | | | | C 1.8 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 11 05.89 | d | C | 10.4 | LB | 6.3M | 8 | a600 | 1.6 | | | 2 | m145 | S 1.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 05.89 | d | C | 10.4 | LB | 6.3M | 8 | a600 | 1.6 | | | 2 | m145 | S 1.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 05.89 | d | C | 10.5 | LB | 6.3M | 8 | a600 | 1.6 | | | 2 | m145 | S 1.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 12.89 | d | C | 10.1 | LB | 6.3M | 8 | a600 | 1.8 | | | 2 | m125 | S 2.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 12.89 | d | C | 10.2 | LB | 6.3M | 8 | a600 | 1.8 | | | 2 | m125 | S 1.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 12.89 | d | C | 10.2 | LB | 6.3M | 8 | a600 | 1.8 | | | 2 | m125 | S 1.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 13.54 | a | V | 10.7 | LA | 30.0L | 6 | a600 | 1.8 | | | | | C 1.8 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 11 13.55 | a | H | 9.9 | LA | 30.0L | 6 | a480 | 1.8 | | | | | C 1.8 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 11 16.58 | axC | C | 10.4 | HV | 35.0C | 9 | a 60 | | | | | | S 3.13m | KAIa | SI4 | 5 | ST2 | TSU02 | |
| 2003 11 16.63 | | C | 10.3 | GA | 60.0Y | 6 | a120 | 3.5 | | | 115 | | S 3.5 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 11 17.61 | a | V | 10.5 | LA | 30.0L | 6 | A200 | 1.8 | | | | | C 1.8 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 11 17.61 | a | V | 12.7 | LA | 30.0L | 6 | A200 | 1.8 | | | | | C 0.2 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 11 17.62 | a | H | 9.7 | LA | 30.0L | 6 | A200 | 1.8 | | | | | C 1.8 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 11 17.62 | a | H | 12.0 | LA | 30.0L | 6 | A200 | 1.8 | | | | | C 0.2 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 11 22.60 | | C | 10.0 | GA | 60.0Y | 6 | a120 | 4.1 | | | 3.9m107 | | S 4.1 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 11 23.54 | a | V | 10.4 | LA | 30.0L | 6 | A200 | 1.8 | | | | | C 1.8 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 11 23.54 | a | V | 12.6 | LA | 30.0L | 6 | A200 | 1.8 | | | | | C 0.2 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 11 23.57 | a | H | 9.6 | LA | 30.0L | 6 | A200 | 1.8 | | | | | C 1.8 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 11 23.57 | a | H | 11.7 | LA | 30.0L | 6 | A200 | 1.8 | | | | | C 0.2 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 12 01.63 | | C | 9.8 | GA | 60.0Y | 6 | a120 | 4.4 | | | > | 7.1m101 | S 4.4 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 02.50 | axC | C | 10.0 | HV | 35.0C | 9 | a 60 | 2.5 | | 5 | 5 | m 99 | S 3.12m | KAIa | SI4 | 5 | ST2 | TSU02 | |
| 2003 12 02.89 | d | C | 9.8 | LB | 6.3M | 8 | a600 | 1.6 | | | 4 | m 97 | C 2.00m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 02.89 | d | C | 9.9 | LB | 6.3M | 8 | a600 | 1.6 | | | 4 | m 97 | C 1.75m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 02.89 | d | C | 10.0 | LB | 6.3M | 8 | a600 | 1.6 | | | 4 | m 97 | C 1.50m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 04.56 | a | V | 10.3 | LA | 30.0L | 6 | A200 | 1.8 | | | 3.0m100 | | C 1.8 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 12 04.56 | a | V | 12.5 | LA | 30.0L | 6 | A200 | 1.8 | | | 3.0m100 | | C 0.2 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 12 04.57 | a | H | 9.8 | LA | 30.0L | 6 | A200 | 1.8 | | | 3.0m100 | | C 1.8 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 12 04.57 | a | H | 11.8 | LA | 30.0L | 6 | A200 | 1.8 | | | 3.0m100 | | C 0.2 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 12 07.84 | d | C | 9.8 | LB | 6.3M | 8 | a600 | 1.7 | | | 4 | m 90 | C 2.00m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 07.84 | d | C | 9.9 | LB | 6.3M | 8 | a600 | 1.7 | | | 4 | m 90 | C 1.75m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 07.84 | d | C | 10.0 | LB | 6.3M | 8 | a600 | 1.7 | | | 4 | m 90 | C 1.50m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 08.65 | | C | 12.7 | UO | 11.0L | 7 | a210 | 1 | | 7 | 1 | m 82 | C 1.0 m | T25 | A32 | 4 | PIX | SHU | |
| 2003 12 09.76 | | C | 12.9 | UO | 11.0L | 7 | a120 | 1.2 | | 7 | 1.5m | 95 | C 1.2 m | T25 | A32 | 4 | PIX | SHU | |
| 2003 12 09.87 | d | C | 9.8 | LB | 6.3M | 8 | a600 | 1.7 | | | 3 | m 95 | C 2.00m | K40 | GAI | 5* | ST7 | SRB | |

Comet C/2002 T7 (LINEAR) [cont.]

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|-----|---|--------|----|-------|---|------|------|------|----|-------|------|---------|---------|-----|-----|-------|-------|------|
| 2003 12 09.87 | d | C | 9.9 | LB | 6.3M | 8 | a600 | 1.7 | | | 3 | m 95 | C 1.75m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 09.87 | d | C | 10.0 | LB | 6.3M | 8 | a600 | 1.7 | | | 3 | m 95 | C 1.50m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 15.42 | axC | | 9.9 | HV | 35.0C | 9 | a 30 | 2.7 | 5 | | 7.0m | 85 | S 3.09m | KAIaSI4 | 5 | ST2 | TSU02 | | |
| 2003 12 21.45 | a | V | 10.5 | LA | 30.0L | 6 | A200 | 1.5 | | | 2.5m | 80 | C 1.5 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 12 21.45 | a | V | 12.5 | LA | 30.0L | 6 | A200 | 1.5 | | | 2.5m | 80 | C 0.2 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 12 21.47 | a | H | 9.7 | LA | 30.0L | 6 | A200 | 1.5 | | | 4.0m | 80 | C 1.5 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 12 21.47 | a | H | 11.6 | LA | 30.0L | 6 | A200 | 1.5 | | | 4.0m | 80 | C 0.2 m | SIA | MIm | 5*U | Ap7 | EZA | |
| 2003 12 23.55 | axC | | 9.8 | HV | 35.0C | 9 | a 60 | 3.0 | 5 | | 9 | m 79 | S 3.23m | KAIaSI4 | 5 | ST2 | TSU02 | | |
| 2003 12 23.66 | | C | 12.8 | UO | 11.0L | 7 | a180 | 0.58 | 9 | | 4.0m | 77 | C 0.58m | T25 | A32 | 4 | PIX | SHU | |
| 2003 12 23.83 | d | C | 9.7 | LB | 6.3M | 8 | a600 | 2.2 | | | 4 | m 75 | C 2.50m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 23.83 | d | C | 9.8 | LB | 6.3M | 8 | a600 | 2.2 | | | 4 | m 75 | C 2.25m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 23.83 | d | C | 9.9 | LB | 6.3M | 8 | a600 | 2.2 | | | 4 | m 75 | C 2.00m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 24.89 | d | C | 9.7 | LB | 6.3M | 8 | a600 | 2.5 | | | 4 | m 72 | C 2.50m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 24.89 | d | C | 9.7 | LB | 6.3M | 8 | a600 | 2.5 | | | 4 | m 72 | C 3.00m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 24.89 | d | C | 9.8 | LB | 6.3M | 8 | a600 | 2.5 | | | 4 | m 72 | C 2.25m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 26.78 | d | C | 9.6 | LB | 6.3M | 8 | a600 | 2.3 | | | 6.4m | 73 | C 3.00m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 26.78 | d | C | 9.7 | LB | 6.3M | 8 | a600 | 2.3 | | | 6.4m | 73 | C 2.25m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 26.78 | d | C | 9.7 | LB | 6.3M | 8 | a600 | 2.3 | | | 6.4m | 73 | C 2.50m | K40 | GAI | 5* | ST7 | SRB | |
| 2003 12 28.46 | | C | 9.4 | GA | 60.0Y | 6 | a 60 | 5.4 | | > | 9.1m | 77 | S 5.4 m | SIA | IPL | 5 U | Ap7 | NAK01 | |
| 2003 12 28.55 | x | C | 9.8 | TJ | 25.0L | 5 | a120 | 3.0 | | | 9.8m | 72 | S 3.0 m | K42 | SI4 | 5 U | SE7 | OHS | |
| 2003 12 30.48 | axC | | 9.7 | HV | 35.0C | 9 | a 60 | 3.0 | 5 | | 9.8m | 76 | S 3.73m | KAIaSI4 | 5 | ST2 | TSU02 | | |
| 2004 01 07.67 | | C | 11.9 | UO | 11.0L | 7 | a180 | 0.92 | 7 | | 2.0m | 63 | C 0.92m | T25 | A32 | 4 | PIX | SHU | |
| 2004 01 09.40 | axC | | 9.3 | HV | 35.0C | 9 | a 60 | 4.5 | 5 | | 12 | m 69 | S 5.76m | KAIaSI4 | 5 | ST2 | TSU02 | | |
| 2004 01 15.46 | | C | 8.9:GA | | 60.0Y | 6 | a120 | 6.6 | | > | 19.0m | 69 | S 6.6 m | SIA | IPL | 5 U | Ap7 | NAK01 | |
| 2004 01 19.42 | axC | | 9.0 | HV | 35.0C | 9 | a 60 | | | | | | S 6.19m | KAIaSI4 | 5 | ST2 | TSU02 | | |

Comet C/2002 V2 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|------|------|------|----|------|----|---------|-----|-----|-----|-----|-------|------|
| 2003 11 17.57 | | C | 18.2 | GA | 60.0Y | 6 | a240 | 0.25 | | | | | S 0.25m | SIA | IPL | 5 U | Ap7 | NAK01 | |

Comet C/2002 VQ_94 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|------|------|------|----|------|----|---------|-----|-----|-----|-----|-------|------|
| 2003 11 16.60 | | C | 18.7 | GA | 60.0Y | 6 | a240 | 0.25 | | | | | S 0.25m | SIA | IPL | 5 U | Ap7 | NAK01 | |

Comet C/2002 X1 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|-----|---|------|----|-------|---|------|------|------|----|------|----|---------|---------|-----|-----|-------|-------|------|
| 2003 09 21.98 | d | C | 13.6 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 1.10m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 21.98 | d | C | 13.7 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 21.98 | d | C | 14.0 | LB | 6.3M | 8 | a600 | 0.8 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 25.95 | d | C | 13.6 | LB | 6.3M | 8 | a480 | 0.5 | | | | | S 0.90m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 25.95 | d | C | 13.9 | LB | 6.3M | 8 | a480 | 0.5 | | | | | S 0.60m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 09 25.95 | d | C | 14.8 | LB | 6.3M | 8 | a480 | 0.5 | | | | | S 0.40m | K40 | OPS | 5* | ST7 | SRB | |
| 2003 11 23.51 | a | C | 15.8 | GA | 60.0Y | 6 | a120 | 0.55 | | | 3.9m | 59 | S 0.55m | SIA | IPL | 5 U | Ap7 | NAK01 | |
| 2003 11 23.55 | axC | | 15.9 | HV | 35.0C | 9 | a 90 | 0.4 | 4 | | 2.1m | 54 | S 0.61m | KAIaSI3 | 5 | ST2 | TSU02 | | |
| 2003 12 23.47 | axC | | 17.1 | HV | 35.0C | 9 | a960 | 0.3 | 3 | | | | S 0.42m | KAIaSI3 | 5 | ST2 | TSU02 | | |

Comet C/2003 A2 (Gleason)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|------|------|------|----|------|----|---------|-----|-----|-----|-----|-------|------|
| 2004 01 17.65 | | C | 19.1 | GA | 60.0Y | 6 | a240 | 0.25 | | | | | S 0.25m | SIA | IPL | 5 U | Ap7 | NAK01 | |

Comet C/2003 F1 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-----|---|----|------|------|----|------|-----|---------|-----|-----|-----|-----|-------|------|
| 2003 06 17.93 | d | k | 16.7 | LA | 35 | L | 5 | a720 | 0.38 | | | | C 0.38m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 20.99 | d | k | 16.5 | LA | 35 | L | 5 | a720 | 0.37 | | 0.8m | 329 | C 0.50m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 20.99 | d | k | 16.6 | LA | 35 | L | 5 | a720 | 0.37 | | 0.8m | 329 | C 0.37m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 21.98 | d | k | 16.6 | LA | 35 | L | 5 | a900 | 0.33 | | 0.8m | 333 | C 0.50m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 21.98 | d | k | 16.7 | LA | 35 | L | 5 | a900 | 0.33 | | 0.8m | 333 | C 0.33m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 24.96 | d | k | 16.9 | LA | 35 | L | 5 | a900 | 0.32 | | 0.4m | 332 | C 0.50m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 24.96 | d | k | 16.9 | LA | 35 | L | 5 | a900 | 0.32 | | 0.4m | 332 | C 0.32m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 25.95 | d | k | 16.6 | LA | 35 | L | 5 | a810 | 0.33 | | 1.1m | 336 | C 0.50m | T24 | GAI | 5*P | ST6 | HOR02 | |

Comet C/2003 F1 (LINEAR) [cont.]

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-----|---|----|------|------|----|---------|----|---------|-----|-----|----|---|-----|-------|
| 2003 06 25.95 | d | k | 16.7 | LA | 35 | L | 5 | a810 | 0.33 | | 1.1m336 | C | 0.33m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 29.92 | d | k | 16.7 | LA | 35 | L | 5 | a810 | 0.33 | | 0.5m333 | C | 0.50m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 29.92 | d | k | 16.8 | LA | 35 | L | 5 | a810 | 0.33 | | 0.5m333 | C | 0.33m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 02.93 | d | k | 16.6 | LA | 35 | L | 5 | a630 | 0.33 | | 0.5m333 | C | 0.33m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 07.92 | d | k | 16.5 | LA | 35 | L | 5 | a900 | 0.37 | | 1.1m343 | C | 0.50m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 07.92 | d | k | 16.7 | LA | 35 | L | 5 | a900 | 0.37 | | 1.1m343 | C | 0.37m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 08.99 | d | k | 16.6 | LA | 35 | L | 5 | a540 | 0.38 | | 0.8m345 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 08.99 | d | k | 16.7 | LA | 35 | L | 5 | a540 | 0.38 | | 0.8m345 | C | 0.38m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 10.93 | d | k | 16.8 | LA | 35 | L | 5 | a900 | 0.40 | | 0.7m346 | C | 0.40m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 10.93 | d | k | 16.8 | LA | 35 | L | 5 | a900 | 0.40 | | 0.7m346 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 14.89 | d | k | 16.6 | LA | 35 | L | 5 | a900 | 0.40 | | | C | 0.40m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 15.88 | d | k | 16.5 | LA | 35 | L | 5 | a810 | 0.35 | | 1.2m341 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 15.88 | d | k | 16.7 | LA | 35 | L | 5 | a810 | 0.35 | | 1.2m341 | C | 0.35m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 18.90 | d | k | 16.6 | LA | 35 | L | 5 | a720 | 0.38 | | 1.1m345 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 18.90 | d | k | 16.7 | LA | 35 | L | 5 | a720 | 0.38 | | 1.1m345 | C | 0.38m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 19.88 | d | k | 16.3 | LA | 35 | L | 5 | a720 | 0.38 | | 0.7m341 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 19.88 | d | k | 16.6 | LA | 35 | L | 5 | a720 | 0.38 | | 0.7m341 | C | 0.38m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 20.90 | d | k | 16.4 | LA | 35 | L | 5 | a540 | 0.35 | | 1.4m347 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 20.90 | d | k | 16.5 | LA | 35 | L | 5 | a540 | 0.35 | | 1.4m347 | C | 0.50m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 20.90 | d | k | 16.6 | LA | 35 | L | 5 | a540 | 0.35 | | 1.4m347 | C | 0.35m | T24 | GAI | 5* | P | ST6 | HOR02 |

Comet C/2003 G1 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-----|---|----|------|------|----|---------|----|---------|-----|-----|----|---|-----|-------|
| 2003 06 18.02 | d | k | 15.1 | LA | 35 | L | 5 | a600 | 0.53 | | 2.9m200 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 18.02 | d | k | 15.2 | LA | 35 | L | 5 | a600 | 0.53 | | 2.9m200 | C | 0.53m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 22.02 | d | k | 15.1 | LA | 35 | L | 5 | a600 | 0.57 | | 6.3m204 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 22.02 | d | k | 15.2 | LA | 35 | L | 5 | a600 | 0.57 | | 6.3m204 | C | 0.57m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 25.04 | d | k | 15.2 | LA | 35 | L | 5 | a600 | 0.58 | | 3.4m204 | C | 0.58m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 25.04 | d | k | 15.2 | LA | 35 | L | 5 | a600 | 0.58 | | 3.4m204 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 26.04 | d | k | 15.2 | LA | 35 | L | 5 | a780 | 0.52 | | 3.4m209 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 26.04 | d | k | 15.3 | LA | 35 | L | 5 | a780 | 0.52 | | 3.4m209 | C | 0.52m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 29.98 | d | k | 15.2 | LA | 35 | L | 5 | a600 | 0.48 | | 3.7m207 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 29.98 | d | k | 15.2 | LA | 35 | L | 5 | a600 | 0.48 | | 3.7m207 | C | 0.48m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 07.97 | d | k | 15.1 | LA | 35 | L | 5 | a600 | 0.53 | | 3.6m199 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 07.97 | d | k | 15.4 | LA | 35 | L | 5 | a600 | 0.53 | | 3.6m199 | C | 0.53m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 08.96 | d | k | 15.0 | LA | 35 | L | 5 | a840 | 0.52 | | 5.8m204 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 08.96 | d | k | 15.3 | LA | 35 | L | 5 | a840 | 0.52 | | 5.8m204 | C | 0.52m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 10.97 | d | k | 14.6 | LA | 35 | L | 5 | a540 | 0.52 | | 7.1m205 | C | 1.50m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 10.97 | d | k | 14.9 | LA | 35 | L | 5 | a540 | 0.52 | | 7.1m205 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 10.97 | d | k | 15.3 | LA | 35 | L | 5 | a540 | 0.52 | | 7.1m205 | C | 0.52m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 14.95 | d | k | 15.3 | LA | 35 | L | 5 | a660 | 0.50 | | 4.3m201 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 14.95 | d | k | 15.5 | LA | 35 | L | 5 | a660 | 0.50 | | 4.3m201 | C | 0.50m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 15.94 | d | k | 15.3 | LA | 35 | L | 5 | a540 | 0.48 | | 3.1m200 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 15.94 | d | k | 15.5 | LA | 35 | L | 5 | a540 | 0.48 | | 3.1m200 | C | 0.48m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 18.96 | d | k | 15.2 | LA | 35 | L | 5 | a360 | 0.63 | | 3.4m200 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 18.96 | d | k | 15.4 | LA | 35 | L | 5 | a360 | 0.63 | | 3.4m200 | C | 0.63m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 18.96 | d | k | 15.5 | LA | 35 | L | 5 | a360 | 0.63 | | 3.4m200 | C | 0.50m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 19.93 | d | k | 15.1 | LA | 35 | L | 5 | a540 | 0.48 | | 6.7m196 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 19.93 | d | k | 15.4 | LA | 35 | L | 5 | a540 | 0.48 | | 6.7m196 | C | 0.48m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 20.93 | d | k | 15.2 | LA | 35 | L | 5 | a480 | 0.55 | | 3.2m201 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 20.93 | d | k | 15.4 | LA | 35 | L | 5 | a480 | 0.55 | | 3.2m201 | C | 0.55m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 25.95 | d | k | 15.2 | LA | 35 | L | 5 | a540 | 0.50 | | 5.0m195 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 25.95 | d | k | 15.5 | LA | 35 | L | 5 | a540 | 0.50 | | 5.0m195 | C | 0.50m | T24 | GAI | 5* | P | ST6 | HOR02 |

Comet C/2003 H1 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|------|---|----|------|------|----|---------|----|---------|-----|-----|----|---|-----|-------|
| 2003 05 24.97 | d | C | 14.8 | LB | 6.3M | 8 | | a480 | 0.7 | | | | S 0.90m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 05 24.97 | d | C | 15.0 | LB | 6.3M | 8 | | a480 | 0.7 | | | | S 0.60m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 05 24.97 | d | C | 15.1 | LB | 6.3M | 8 | | a480 | 0.7 | | | | S 0.40m | K40 | OPS | 5* | | ST7 | SRB |
| 2003 06 16.91 | d | k | 14.8 | LA | 35 | L | 5 | a960 | 0.48 | | 1.2m103 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 16.91 | d | k | 15.1 | LA | 35 | L | 5 | a960 | 0.48 | | 1.2m103 | C | 0.48m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 17.89 | d | k | 14.6 | LA | 35 | L | 5 | a780 | 0.48 | | 1.6m107 | C | 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 06 17.89 | d | k | 15.0 | LA | 35 | L | 5 | a780 | 0.48 | | 1.6m107 | C | 0.48m | T24 | GAI | 5* | P | ST6 | HOR02 |

Comet C/2003 H1 (LINEAR) [cont.]

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|----|---|------|----|-------|---|------|------|------|----|---------|-------|---------|-----|-----|-----|-----|-------|------|
| 2003 06 20.96 | d | k | 14.8 | LA | 35 | L | 5 | a720 | 0.45 | | 1.6m102 | C | 1.00m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 20.96 | d | k | 15.1 | LA | 35 | L | 5 | a720 | 0.45 | | 1.6m102 | C | 0.45m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 21.93 | d | k | 14.8 | LA | 35 | L | 5 | a720 | 0.43 | | 1.3m102 | C | 1.00m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 21.93 | d | k | 15.1 | LA | 35 | L | 5 | a720 | 0.43 | | 1.3m102 | C | 0.43m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 24.90 | d | k | 14.9 | LA | 35 | L | 5 | a660 | 0.47 | | 1.1m102 | C | 1.00m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 24.90 | d | k | 15.1 | LA | 35 | L | 5 | a660 | 0.47 | | 1.1m102 | C | 0.47m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 25.93 | d | k | 14.8 | LA | 35 | L | 5 | a660 | 0.42 | | 1.6m 99 | C | 1.00m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 25.93 | d | k | 15.2 | LA | 35 | L | 5 | a660 | 0.42 | | 1.6m 99 | C | 0.42m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 29.90 | d | k | 14.8 | LA | 35 | L | 5 | a600 | 0.48 | | 1.9m103 | C | 1.00m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 29.90 | d | k | 15.1 | LA | 35 | L | 5 | a600 | 0.48 | | 1.9m103 | C | 0.48m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 02.90 | d | k | 14.8 | LA | 35 | L | 5 | a480 | 0.52 | | 2.1m 96 | C | 1.00m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 02.90 | d | k | 15.0 | LA | 35 | L | 5 | a480 | 0.52 | | 2.1m 96 | C | 0.52m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 07.90 | d | k | 14.8 | LA | 35 | L | 5 | a600 | 0.48 | | 1.4m 98 | C | 1.50m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 07.90 | d | k | 15.0 | LA | 35 | L | 5 | a600 | 0.48 | | 1.4m 98 | C | 1.00m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 07.90 | d | k | 15.1 | LA | 35 | L | 5 | a600 | 0.48 | | 1.4m 98 | C | 0.48m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 08.90 | d | k | 15.0 | LA | 35 | L | 5 | a600 | 0.45 | | 1.4m100 | C | 1.00m | T24 | GAI | 5* | ST6 | HOR02 | |
| 2003 07 08.90 | d | k | 15.2 | LA | 35 | L | 5 | a600 | 0.45 | | 1.4m100 | C | 0.45m | T24 | GAI | 5* | ST6 | HOR02 | |
| 2003 07 10.92 | d | k | 14.9 | LA | 35 | L | 5 | a480 | 0.47 | | 1.5m100 | C | 1.00m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 10.92 | d | k | 15.1 | LA | 35 | L | 5 | a480 | 0.47 | | 1.5m100 | C | 0.47m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 14.88 | d | k | 14.8 | LA | 35 | L | 5 | a600 | 0.45 | | 1.8m 89 | C | 1.50m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 14.88 | d | k | 14.9 | LA | 35 | L | 5 | a600 | 0.45 | | 1.8m 89 | C | 1.00m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 14.88 | d | k | 15.2 | LA | 35 | L | 5 | a600 | 0.45 | | 1.8m 89 | C | 0.45m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 15.90 | d | k | 15.0 | LA | 35 | L | 5 | a660 | 0.43 | | 2.6m 88 | C | 1.00m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 15.90 | d | k | 15.2 | LA | 35 | L | 5 | a660 | 0.43 | | 2.6m 88 | C | 0.43m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 18.88 | d | k | 15.0 | LA | 35 | L | 5 | a540 | 0.45 | | 2.1m 89 | C | 1.00m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 18.88 | d | k | 15.2 | LA | 35 | L | 5 | a540 | 0.45 | | 2.1m 89 | C | 0.45m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 19.90 | d | k | 15.1 | LA | 35 | L | 5 | a480 | 0.47 | | 1.6m 87 | C | 1.00m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 19.90 | d | k | 15.3 | LA | 35 | L | 5 | a480 | 0.47 | | 1.6m 87 | C | 0.47m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 20.89 | d | k | 15.1 | LA | 35 | L | 5 | a420 | 0.45 | | 2.3m 88 | C | 0.45m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 25.92 | d | k | 14.9 | LA | 35 | L | 5 | a540 | 0.40 | | 2.1m 89 | C | 1.00m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 25.92 | d | k | 15.2 | LA | 35 | L | 5 | a540 | 0.40 | | 2.1m 89 | C | 0.40m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 27.90 | d | C | 14.6 | LB | 6.3M | 8 | a660 | 0.8 | | | S | 1.60m | K40 | OPS | 5* | ST7 | SRB | | |
| 2003 07 27.90 | d | C | 14.8 | LB | 6.3M | 8 | a660 | 0.8 | | | S | 1.10m | K40 | OPS | 5* | ST7 | SRB | | |
| 2003 07 27.90 | d | C | 15.2 | LB | 6.3M | 8 | a660 | 0.8 | | | S | 0.60m | K40 | OPS | 5* | ST7 | SRB | | |
| 2003 12 03.84 | | C | 14.0 | TJ | 25.0L | 5 | a120 | 0.9 | | | 2.0m 52 | S | 0.9 m | K26 | SI4 | 5 U | ST9 | KAD02 | |
| 2003 12 28.80 | wx | C | 13.2 | TJ | 25.0L | 5 | a120 | 0.9 | | | 5.0m 42 | S | 0.9 m | K42 | SI4 | 5 U | SE7 | OHS | |
| 2003 12 31.81 | x | C | 13.4 | TJ | 20.0C | 9 | a 60 | 0.5 | | | 2.5m 38 | C | 0.75m | K26 | SI4 | 5 | ST9 | KON03 | |

Comet C/2003 H3 (NEAT)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-----|---|----|------|------|----|------|----|---------|-----|-----|-----|-----|-------|------|
| 2003 07 15.05 | d | k | 15.0 | LA | 35 | L | 5 | a600 | 0.63 | | | | C 0.63m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 16.04 | d | k | 14.9 | LA | 35 | L | 5 | a420 | 0.60 | | | | C 0.60m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 19.05 | d | k | 14.5 | LA | 35 | L | 5 | a540 | 0.53 | | | | C 1.00m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 19.05 | d | k | 14.8 | LA | 35 | L | 5 | a540 | 0.53 | | | | C 0.53m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 20.04 | d | k | 14.4 | LA | 35 | L | 5 | a600 | 0.90 | | | | C 0.90m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 20.04 | d | k | 14.8 | LA | 35 | L | 5 | a600 | 0.90 | | | | C 0.50m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 21.03 | d | k | 14.5 | LA | 35 | L | 5 | a540 | 0.67 | | | | C 1.00m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 21.03 | d | k | 14.7 | LA | 35 | L | 5 | a540 | 0.67 | | | | C 0.67m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 21.03 | d | k | 14.8 | LA | 35 | L | 5 | a540 | 0.67 | | | | C 0.50m | T24 | GAI | 5*P | ST6 | HOR02 | |

Comet C/2003 K4 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-----|---|----|------|------|----|------|----|---------|-----|-----|-----|-----|-------|------|
| 2003 06 17.95 | d | k | 16.2 | LA | 35 | L | 5 | a720 | 0.37 | | | | C 0.50m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 17.95 | d | k | 16.3 | LA | 35 | L | 5 | a720 | 0.37 | | | | C 0.37m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 20.94 | d | k | 16.4 | LA | 35 | L | 5 | a660 | 0.28 | | | | C 0.50m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 20.94 | d | k | 16.5 | LA | 35 | L | 5 | a660 | 0.28 | | | | C 0.28m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 21.95 | d | k | 16.3 | LA | 35 | L | 5 | a660 | 0.28 | | | | C 0.50m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 21.95 | d | k | 16.4 | LA | 35 | L | 5 | a660 | 0.28 | | | | C 0.28m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 24.92 | d | k | 16.4 | LA | 35 | L | 5 | a660 | 0.30 | | | | C 0.30m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 29.93 | d | k | 16.3 | LA | 35 | L | 5 | a780 | 0.30 | | | | C 0.50m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 06 29.93 | d | k | 16.4 | LA | 35 | L | 5 | a780 | 0.30 | | | | C 0.30m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 02.98 | d | k | 16.3 | LA | 35 | L | 5 | a480 | 0.32 | | | | C 0.32m | T24 | GAI | 5*P | ST6 | HOR02 | |
| 2003 07 07.94 | d | k | 16.0 | LA | 35 | L | 5 | a540 | 0.35 | | | | C 0.35m | T24 | GAI | 5*P | ST6 | HOR02 | |

Comet C/2003 K4 (LINEAR) [cont.]

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|----|---|------|----|-------|---|----|------|------|----|------|----|---------|------|-----|----|---|-----|-------|
| 2003 07 08.94 | d | k | 15.9 | LA | 35 | L | 5 | a600 | 0.37 | | | | C 0.37m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 10.96 | d | k | 15.8 | LA | 35 | L | 5 | a600 | 0.38 | | | | C 0.38m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 14.91 | d | k | 15.6 | LA | 35 | L | 5 | a660 | 0.52 | | | | C 0.52m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 15.92 | d | k | 15.7 | LA | 35 | L | 5 | a540 | 0.35 | | | | C 0.35m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 15.92 | d | k | 15.7 | LA | 35 | L | 5 | a540 | 0.35 | | | | C 0.50m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 18.97 | d | k | 15.7 | LA | 35 | L | 5 | a480 | 0.33 | | | | C 0.33m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 19.95 | d | k | 15.7 | LA | 35 | L | 5 | a540 | 0.38 | | | | C 0.50m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 19.95 | d | k | 15.7 | LA | 35 | L | 5 | a540 | 0.38 | | | | C 0.38m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 20.95 | d | k | 15.9 | LA | 35 | L | 5 | a540 | 0.35 | | | | C 0.35m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 20.95 | d | k | 16.0 | LA | 35 | L | 5 | a540 | 0.35 | | | | C 0.50m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 25.94 | d | k | 15.7 | LA | 35 | L | 5 | a480 | 0.37 | | | | C 1.00m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 07 25.94 | d | k | 15.7 | LA | 35 | L | 5 | a480 | 0.37 | | | | C 0.37m | T24 | GAI | 5* | P | ST6 | HOR02 |
| 2003 11 17.43 | a | C | 15.1 | GA | 60.0Y | 6 | a | a120 | 0.45 | | | 90 | S 0.45m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 21.37 | ax | C | 14.6 | HV | 35.0C | 9 | a | a 90 | 0.3 | 5 | 0.3m | 78 | S 0.52m | KAIa | SI3 | 5 | | ST2 | TSU02 |

Comet C/2003 L2 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|----|---|------|----|-------|---|----|------|------|----|------|----|---------|-----|-----|---|---|-----|------|
| 2003 12 28.52 | wx | C | 16.6 | TJ | 25.0L | 5 | a | a120 | 0.2 | | | | S 0.2 m | K42 | SI4 | 5 | U | SE7 | OHS |

Comet P/2003 02 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 11 17.62 | | C | 17.2 | GA | 60.0Y | 6 | a | a240 | 0.35 | | | | S 0.35m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet P/2003 03 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 11 16.62 | | C | 19.2 | GA | 60.0Y | 6 | a | a240 | 0.25 | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet C/2003 R1 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 11 17.51 | a | C | 20.0 | GA | 60.0Y | 6 | a | a240 | 0.25 | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 11 23.47 | a | C | 20.2 | GA | 60.0Y | 6 | a | a240 | | 9 | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet P/2003 S1 (NEAT)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 11 16.53 | | C | 17.7 | GA | 60.0Y | 6 | a | a240 | 0.4 | | | | S 0.4 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 14.48 | | C | 18.0 | GA | 60.0Y | 6 | a | a240 | 0.35 | | | 40 | S 0.35m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2004 01 17.47 | | C | 18.3 | GA | 60.0Y | 6 | a | a240 | 0.3 | | | | S 0.3 m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet P/2003 S2 (NEAT)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 11 16.56 | | C | 17.1 | GA | 60.0Y | 6 | a | a240 | 0.45 | | | | S 0.45m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 28.45 | | C | 18.3 | GA | 60.0Y | 6 | a | a240 | 0.35 | | | | S 0.35m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet C/2003 S3 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 11 17.60 | | C | 19.0 | GA | 60.0Y | 6 | a | a240 | 0.25 | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 11 22.59 | | C | 19.3 | GA | 60.0Y | 6 | a | a240 | 0.25 | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 11 23.59 | | C | 19.3 | GA | 60.0Y | 6 | a | a240 | 0.25 | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet C/2003 S4 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|----|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 11 17.47 | | C | 18.5 | GA | 60.0Y | 6 | a | a240 | 0.3 | | | | S 0.3 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 14.44 | | C | 18.5 | GA | 60.0Y | 6 | a | a240 | 0.3 | | | | S 0.3 m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet C/2003 T2 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|----|---|------|----|-------|---|------|------|------|----|------|----|---------|---------|-----|---|---|-----|-------|
| 2003 11 16.59 | | C | 14.3 | GA | 60.0Y | 6 | a120 | 1.1 | | | | | S 1.1 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 11 23.59 | ax | C | 14.5 | HV | 35.0C | 9 | a120 | 0.8 | | 4 | | | S 0.95m | KAIaSI3 | 5 | | | ST2 | TSU02 |
| 2003 12 14.51 | | C | 14.6 | GA | 60.0Y | 6 | a120 | 1.5 | | | 3.4m | 14 | S 1.5 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 23.52 | ax | C | 15.0 | HV | 35.0C | 9 | A200 | 0.9 | | 3 | | | S 1.59m | KAIaSI3 | 5 | | | ST2 | TSU02 |
| 2003 12 28.59 | x | C | 17.3 | TJ | 25.0L | 5 | a120 | 0.3 | | | | | S 0.3 m | K42 | SI4 | 5 | U | SE7 | OHS |

Comet C/2003 T4 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|----|---|------|----|-------|---|------|------|------|----|------|----|---------|---------|-----|---|---|-----|-------|
| 2003 11 17.68 | a | C | 17.1 | GA | 60.0Y | 6 | a240 | 0.45 | | | | | S 0.45m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 11 23.64 | ax | C | 17.6 | HV | 35.0C | 9 | a360 | 0.5 | | 4 | | | S 0.90m | KAIaSI3 | 5 | | | ST2 | TSU02 |
| 2003 12 01.72 | a | C | 16.9 | GA | 60.0Y | 6 | a240 | 0.65 | | | | | S 0.65m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 28.62 | a | C | 16.7 | GA | 60.0Y | 6 | a240 | 0.55 | | | | | S 0.55m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 30.61 | ax | C | 16.5 | HV | 35.0C | 9 | A 80 | 0.25 | | 4 | | | S 0.75m | KAIaSI3 | 5 | | | ST2 | TSU02 |
| 2004 01 17.61 | | C | 16.6 | GA | 60.0Y | 6 | a240 | 0.65 | | | | | S 0.65m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet C/2003 U1 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|------|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 11 16.55 | a | C | 16.6 | GA | 60.0Y | 6 | a120 | 0.45 | | | | | S 0.45m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 11 23.50 | x | C | 16.9 | HV | 60.0Y | 6 | a120 | 0.6 | | | | | S 0.6 m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet P/2003 U2 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|----|---|------|----|-------|---|------|------|------|----|------|----|---------|---------|-----|---|---|-----|-------|
| 2003 10 30.46 | ax | C | 17.1 | HV | 35.0C | 9 | a720 | 0.3 | | | | | S 0.52m | KAIaSI3 | 5 | | | ST2 | TSU02 |
| 2003 11 16.49 | x | C | 17.8 | TJ | 60.0Y | 6 | a240 | 0.3 | | | | | S 0.3 m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet P/2003 U3 (NEAT)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|------|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 11 17.53 | | C | 18.8 | GA | 60.0Y | 6 | a240 | 0.25 | | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 14.50 | | C | 18.9 | GA | 60.0Y | 6 | a240 | 0.3 | | | | | S 0.3 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2004 01 17.52 | | C | 19.9 | GA | 60.0Y | 6 | a240 | 0.25 | | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet P/2003 UY_275 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|------|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 12 28.57 | | C | 19.8 | GA | 60.0Y | 6 | a240 | 0.25 | | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet C/2003 V1 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|----|---|------|----|-------|---|------|------|------|----|------|-----|---------|---------|-----|---|---|-----|-------|
| 2003 12 01.77 | a | C | 16.0 | GA | 60.0Y | 6 | a120 | 0.65 | | | 2.7m | 302 | S 0.65m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 28.67 | a | C | 16.4 | GA | 60.0Y | 6 | a240 | 0.6 | | | 3.1m | 296 | S 0.6 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 28.69 | wx | C | 16.2 | TJ | 25.0L | 5 | a120 | 0.3 | | | 0.5m | 278 | S 0.3 m | K42 | SI4 | 5 | U | SE7 | OHS |
| 2003 12 30.63 | ax | C | 16.0 | HV | 35.0C | 9 | a360 | 0.3 | | 3 | | | S 0.75m | KAIaSI3 | 5 | | | ST2 | TSU02 |

Comet C/2003 W1 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|----|---|------|----|-------|---|------|------|------|----|------|----|---------|---------|-----|---|---|-----|-------|
| 2003 11 23.41 | a | C | 16.5 | GA | 60.0Y | 6 | a240 | 0.5 | | | | | S 0.5 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 14.45 | | C | 16.5 | GA | 60.0Y | 6 | a120 | 0.5 | | | | | S 0.5 m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 22.37 | ax | C | 18.4 | HV | 35.0C | 9 | a240 | 0.3 | | 4 | | | S 0.52m | KAIaSI3 | 5 | | | ST2 | TSU02 |
| 2004 01 17.50 | | C | 17.2 | GA | 60.0Y | 6 | a240 | 0.6 | | | | | S 0.6 m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet C/2003 WT_42 (LINEAR)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|------|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 12 01.66 | | C | 18.0 | GA | 60.0Y | 6 | a240 | | | 9 | | | S 0.35m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2003 12 28.55 | | C | 18.0 | GA | 60.0Y | 6 | a240 | | | 9 | | | S 0.35m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2004 01 15.53 | | C | 17.8 | GA | 60.0Y | 6 | a240 | | | 9 | | | S 0.4 m | SIA | IPL | 5 | U | Ap7 | NAK01 |

Comet P/2003 XD₁₀ (LINEAR-NEAT)

| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|------|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2003 12 28.70 | | C | 19.0 | GA | 60.0Y | 6 | a240 | 0.25 | | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2004 01 17.60 | | C | 19.9 | GA | 60.0Y | 6 | a240 | 0.25 | | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |

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| DATE (UT) | n | M | MAG. | RF | AP. | T | f/ | EXP. | COMA | DC | TAIL | PA | APERTUR | Chp | Sfw | C | P | Cam | OBS. |
|---------------|---|---|------|----|-------|---|------|------|------|----|------|----|---------|-----|-----|---|---|-----|-------|
| 2004 01 15.61 | | C | 18.8 | GA | 60.0Y | 6 | a240 | 0.25 | | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |
| 2004 01 17.63 | | C | 18.5 | GA | 60.0Y | 6 | a240 | 0.25 | | | | | S 0.25m | SIA | IPL | 5 | U | Ap7 | NAK01 |

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—D.W.E.G.

Items in Volumes 23-25, by title:

Corrigenda and Errata (continues the last such index listing in the October 2000 issue, where there was a mistake at the end of the line of "Corrigenda" given near the top of page 149 — *for* 49, 69, 121, 150 *read* 49; 22:69, 122, 150) —

[23:3, 27, 40, 41, 84, 98, 152; 24:2, 41, 44, 130, 222, 270; 25:2, 56, 114, 156, 192]

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"Important Notice to contributors of CCD magnitudes" [23:41]

New additions to the *ICQ* Keys to Abbreviations used in the tabulated observational data, not including the Observer Key (which has new additions in nearly all issues) [23:98; 24:5, 130, 240; 25:57, 160]

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 "IWCA III in Paris (2004 June 4-5)" [24:270; 25:57, 160, 193]
 "New Assistant Editor" [24:94]
 "New [2003] Catalogue of Cometary Orbits" [25:3]
 "Non-Visual Data (new format)" [24:208]
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- Biver, Nicolas: "Correlation Between Visual Magnitudes and the Outgassing Rate of CO in Comets Beyond 3 AU" [23:85]
 Biver, Nicolas: "Estimating the Rotation Period of Comet C/1995 O1 (Hale-Bopp) From Drawings" [23:16]
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IWCA III RAFFLE

The organizers of the third International Workshop on Cometary Astronomy (to be held in Paris, France, during 2004 June 4-5) will hold a raffle this is open also to those not attending the Workshop, to raise money for invited speakers who might not otherwise be able to afford to attend. We encourage all subscribers to consider entering. Please see the SAF website for additional details: <http://wwwusr.obspm.fr/biver/IWCAIII/>.

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DESIGNATIONS OF RECENT COMETS

Listed below, for handy reference, are the last 10 comets to have been given designations in the new system. [This list updates that in the October 2003 issue, p. 194, where explanation of the headings is given.]

| | <i>New-Style Designation</i> | <i>P</i> | <i>T</i> | <i>q</i> | <i>IAUC</i> |
|---|--|----------|----------|----------|-------------|
| # | 158P/2001 RG ₁₀₀ (Kowal-LINEAR) | 10.3 | 7/25/02 | 4.59 | 8244 |
| * | P/2003 UY ₂₇₅ (LINEAR) | 7.2 | 7/2/03 | 1.83 | 8247 |
| * | 159P/2003 UD ₁₆ (LONEOS) | 14.3 | 3/3/04 | 3.65 | 8248 |
| * | P/2003 XD ₁₀ (LINEAR-NEAT) | 6.1 | 9/16/03 | 1.88 | 8257 |
| * | P/2004 A1 | 22.2 | 8/25/04 | 5.46 | 8267 |
| * | C/2003 WT ₄₂ (LINEAR) | | 4/11/06 | 5.19 | 8270 |
| * | P/2003 SQ ₂₁₅ (NEAT-LONEOS) | 12.9 | 3/24/04 | 2.30 | 8274 |
| * | C/2004 B1 (LINEAR) | | 2/7/06 | 1.60 | 8279 |
| * | P/2003 WC ₇ (LINEAR-Catalina) | 11.8 | 2/5/04 | 1.65 | 8280 |
| * | C/2004 C1 (Larsen) | | 11/23/04 | 8.0 | 8286 |