INTERNATIONAL COMET QUARTERLY

Whole Number 112 | OCTOBER 1999 | Vol. 21, No. 4

SMITHSONIAN ASTROPHYSICAL OBSERVATORY
60 Garden Street · Cambridge, MA 02138 · U.S.A.

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

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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 via the computer networks *SPAN* (6700::DAN) or Internet (ICQ@CFA.HARVARD.EDU), or via floppy disks that can be read on an IBM PC], 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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This issue is No. 112 of the publication originally called *The Comet* (founded March 1973) and is Vol. 21, No. 4, of the *ICQ*. *[ISSN 0736-6922]*

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EDITORIAL NOTICE.

As this October issue was delayed in printing, the *2000 Comet Handbook*, which was printed in early December, was mailed ahead of this issue. Also, an index is planned for the January 2000 issue. The special issue containing papers presented at the IWCA II in Cambridge, England, last August is planned for the April 2000 issue. Note that the mailing status of each issue of the *ICQ* is now given at the top of the main *ICQ* World Wide Web page.

COMETS FOR THE VISUAL OBSERVER IN 2000

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There is a dearth of bright periodic comets during the year 2000, with only a small handful of such objects expected to come within the range of even the larger visual instruments. As if to compensate for this situation, several long-period comets, most of these being discoveries via the LIncoln Near-Earth Asteroid Research (LINEAR) telescope in New Mexico, should become bright enough to be visually detectable. At least one, and possibly two, of these long-period comets may reach naked-eye visibility during the year.

Comet C/1999 S4 (LINEAR)

This comet was discovered on 1999 September 27 by LINEAR. It was located a relatively distant 4.3 AU from the sun at that time, but the most recent orbital calculations as of this writing (*MPC* 37026) indicate that it does not pass perihelion until T = 2000 July 26, at q = 0.764 AU. Closest approach to the earth, at Δ = 0.37 AU, occurs three days earlier. These numbers alone suggest that the comet could become relatively prominent around that time, although — as is the case with any long-period comet — accurate brightness forecasts are extremely problematical.

CCD brightness measurements shortly after discovery indicate that the comet was then at $m_1 \approx 16$; however, it was visually observed by this writer at $m_1 \approx 14$ in early November 1999. This suggests that the comet should be near $m_1 \approx 13$ near the beginning of 2000, perhaps brightening to $m_1 \approx 12$ by the time it disappears into evening twilight in March. Northern-hemisphere observers should pick it up after conjunction in the morning sky at $m_1 \approx$ 8-9 by the end of May. After this, the comet should brighten fairly rapidly as it travels north, and by mid-July will be circumpolar for mid-northern latitudes. It is in conjunction with the sun at an elongation of 44° and at $\delta = +65°$ on July 19, and after that, is primarily an evening-sky object. The taking of the recent brightness measurements at face value suggests that the peak brightness around perihelion and closest approach to Earth may be around $m_1 \approx$ 2-3, although the comet could easily be one or more magnitudes brighter or fainter than this. After perihelion the comet rapidly heads southward, becoming accessible to observers in the southern hemisphere (and still perhaps at $m_1 \approx$ 3-4) by the end of July. Fading continues during the subsequent weeks, with the comet again being in conjunction with the sun in October. It may still be visually detectable late in the year at $m_1 \approx 12$ in the southern morning sky.

An especially attractive feature of the impending apparition of comet C/1999 S4 is the excellent tail geometry. Even a relatively modest-length physical tail (say, 0.25 AU) translates into an apparent length of 40°, with this approaching 70° for a 0.5-AU-long tail. If there is substantial dust-tail development, there is a reasonable chance of observing enhancement of the tail's brightness due to forward scattering of sunlight around the time of perihelion (T).

Comet C/1999 T1 (McNaught-Hartley)

This object was discovered on 1999 October 7 during the course of the resurrected near-Earth-asteroid search program at Siding Spring. As was the case for the preceding object, this comet was also located far from the sun at discovery (5.4 AU) and was far from perihelion. According to the latest orbit available at this writing (*MPC* 36213), perihelion does not occur until T = 2000 December 13, at q = 1.172 AU. CCD brightness estimates suggest that the comet is presently at $m_1 \simeq$ 15-16, and it has not yet been detected visually.

Comet C/1999 T1 is currently located near $\delta \simeq -40°$, and will remain near this declination for the next several months. It is unlikely to brighten beyond $m_1 \simeq 13$ by the time it is in conjunction with the sun in early May. Following conjunction, it emerges into the morning sky and remains primarily a southern-hemisphere object until perhaps November, by which time it may possibly have brightened to $m_1 \simeq 7$. It should be near a peak brightness of $m_1 \simeq 6.5$ — highly uncertain, of course — in late 2000 and early 2001, and easily accessible from both hemispheres. Closest approach to the earth ($\Delta \sim 1.29$ AU) occurs in early February 2001.

Fainter Long-Period Comets

Many of the fainter long-period comets that should be detectable with visual intruments during 2000 are objects that have been discovered by LINEAR within the past several months. Comet C/1999 L3, which is at perihelion on 2000 January 4 at q = 1.991 AU, emerges into the morning sky in late 1999 and may reach $m_1 \simeq 13$ around the time of opposition in early February 2000. The distant comet C/1999 K8, which passes perihelion on 2000 April 24 at q = 4.200 AU, has been visually detected at $m_1 \simeq 14$ with larger instruments during the latter months of 1999, and may be approximately a half-magnitude brighter around the time of its next opposition in October 2000. C/1999 K5 passes perihelion on 2000 July 4 at q = 3.254 AU and around that time may be near $m_1 \simeq 13$; it will be located in southern circumpolar skies ($\delta \simeq -75°$). C/1999 T2 was discovered shortly before this article was written, and according to the

most recent orbital calculations, it passes perihelion on 2000 November 24 at $q = 3.037$ AU; it is at opposition (in northern circumpolar skies at $\delta \simeq +64°$) in late July and should be accessible at perhaps $m_1 \simeq 13$ for the following several months. One additional object that is of interest is comet C/1999 J2 (Skiff), discovered in May 1999 as part of the LONEOS program based in Arizona and which has the largest perihelion distance (7.110 AU) of any known long-period comet; it is at perihelion on 2000 April 5 and at opposition a month and a half later, and may be visually detectable around that time with larger instruments at $m_1 \simeq 14$.

Comet C/1995 O1 (Hale-Bopp), despite being over 2.5 years past perihelion and being located almost 10 AU from the sun, was still a relatively bright $m_1 \simeq 12.5$-13 during the latter months of 1999, and has even continued to exhibit outburst activity (cf. *IAUC* 7288). It spends all of 2000 in southern circumpolar skies south of $\delta \simeq -69°$, being south of $\delta \simeq -80°$ at the end of the year, by which time its heliocentric distance will have increased to $r = 12.6$ AU and it will have (presumably) faded to $m_1 \simeq 14$-15. During May and June 2000, it traverses the densest regions of the Large Magellanic Cloud, and on June 9 it passes almost directly over the location of Supernova 1987A. Comet C/1997 BA_6 (Spacewatch), at perihelion on 1999 November 27 ($q = 3.436$ AU), has also been observable at $m_1 \simeq 12.5$-13 during the past few months and is likewise in southern circumpolar skies. It begins 2000 at $\delta \simeq -71°$ but travels northward during the year; when at opposition in early August, it should be observable from lower northern latitudes at $\delta \simeq -48°$ and at $m_1 \simeq 13$-13.5.

Short-Period Comets: The Brighter Ones

Comet 141P/Machholz 2

Much uncertainty still surrounds the predictions for this comet, which was observed to have multiple cometary companions at its discovery apparition in 1994. Component A (the primary component) was recovered on 1999 August 3 by Robert McNaught as a very faint stellar object of $m_2 \approx 20$-21 and (although it has brightened some since then), as of this writing, it is still at least 1–2 magnitudes fainter than the 1994 post-discovery brightness would predict for this time. It is at perihelion on 1999 December 9 ($q = 0.749$ AU) and passes 0.32 from the earth in mid-January 2000. A rough extrapolation of the 1994 brightness behavior suggests a peak magnitude of $m_1 \approx 7$-8 occurring in December 1999 and January 2000; however, this must be viewed with considerable caution, and the comet may well be much fainter than this.

Component D (the brightest companion to A seen in 1994) has recently been recovered (*IAUC* 7299) and is currently located some 7′ southwest of component A. The separation between the two objects will increase to slightly over two degrees by late January. Sekanina (1999), who provides a detailed discussion of the evolution of the various companions, predicts that component B (the other relatively bright companion seen in 1994) will — if it still exists — have a maximum projected separation from component A of $\approx 40'$, also to occur in late January.

Comet 2P/Encke

The 2000 return of this famous object (perihelion September 9, $q = 0.340$ AU) is relatively unfavorable for both the northern and southern hemispheres, with the comet remaining far from the earth and at fairly small elongations throughout the apparition. The best viewing opportunities from the northern hemisphere occur in August; at mid-month, it will be in the morning sky at an elongation of $\simeq 30°$ and probably $m_1 \simeq 9$-10. It may brighten by ≈ 1 magnitude by the time it is lost in twilight around August 26. Viewing opportunities from the southern hemisphere are even less favorable, with the only possibilities for observation coming in early October, when it will be a faint object near an elongation of 25°.

Short-Period Comets: The Fainter Ones

Comet 114P/Wiseman-Skiff

The current return of this comet is relatively similar to that of the discovery apparition in 1986-1987, when a handful of visual observations (all post-perihelion) at $m_1 \simeq 13$-14 were obtained. It is at perihelion on 2000 January 11 ($q = 1.569$ AU) and at opposition in late October 1999; if its brightness behavior is similar to what it exhibited in 1986-1987, it should reach a peak brightness of $m_1 \simeq 13$-13.5 in December 1999 and January 2000.

Comet 47P/Ashbrook-Jackson

This comet is at perihelion on 2001 January 6, at $q = 2.305$ AU. The geometry of this return is relatively unfavorable, and the best opportunities for observation will come around the time of opposition in late July 2000, when it should be near a peak brightness of $m_1 \simeq 12.5$. The rather large southerly declination ($\delta \simeq -38°$) at that time will favor observers in the southern hemisphere. The comet should remain accessible throughout most of the rest of the year, but it should fade by close to a full magnitude by year's end.

Despite the relatively poor geometrical conditions exhibited at this return, this is the brightest that 47P/Ashbrook-Jackson will get for the foreseeable future. An approach to Jupiter (0.6 AU) in 2004 will increase its orbital period from the current 7.5 years to 8.4 years and will increase the perihelion distance to 2.8 AU. After that, the comet will probably never become brighter than $m_1 \simeq 13.5$ even at the most favorable returns.

Comet 41P/Tuttle-Giacobini-Kresák

Like the preceding comet, this object is also at perihelion on 2001 January 6 ($q = 1.052$ AU). This comet's return is also unfavorable, with the elongation in the morning sky remaining near 45° throughout the period of time when it is brightest (December 2000 and January 2001). Under ordinary circumstances, the comet would not be expected

to become any brighter than $m_1 \simeq 13.5$; however, in the past it has shown a tendency to exhibit strong outbursts on occasion, two of 9–10 magnitudes (to $m_1 \simeq$ 4-5) in 1973 and one of $\sim$ 6 magnitudes (to $m_1 \simeq 8$) at the most recent return in 1995 (when the geometrical circumstances were also relatively poor). Monitoring of the comet, despite the poor geometry, for additional outbursts in 2000-2001 is encouraged.

Comet 29P/Schwassmann-Wachmann 1

This comet has remained quite active during the recent past, exhibiting 1–2 outbursts per year, including in March and June 1999; additional outbursts during 2000 would accordingly be expected. The comet emerges into the morning sky in January, is at opposition in early June, and remains accessible in the evening sky until about the beginning of November. Since it remains slightly south of $\delta \simeq -30°$ throughout most of this viewing season, observers in the southern hemisphere are favored.

Three other short-period comets that might be worth attempts for visual observations with large instruments are: 63P/Wild 1, recently recovered (after being missed at its previous return in 1986), at perihelion on 1999 December 27 and at opposition in mid-April 2000; 74P/Smirnova-Chernykh, a low-eccentricy ($e = 0.15$) object at perihelion on 2001 January 15 ($q = 3.546$ AU) and at opposition in March 2001, but accessible in the morning sky in late 2000; and 110P/Hartley 3, which is at perihelion on 2001 March 21 ($q = 2.478$ AU) and at opposition in late November 2000. None of these objects is likely to be brighter than $m_1 \approx 14$.

An additional object that might possibly be worth visual-observation attempts is 1999 LD_{31}, discovered on 1999 June 8 by LINEAR. Despite its having a clearly 1P/Halley-type orbit ($P = 120$ years, $e = 0.902$) that, moreover, is retrograde ($i = 160°$), detailed physical observations did not reveal any sign of cometary activity. It is at perihelion on 1999 November 16 ($q = 2.377$ AU) and is well placed for observation in early 2000, being at opposition at the beginning of March. Application of an asteroidal-brightness formula suggests it will reach a peak brightness of $m_v \sim 17$ around opposition; however, if any cometary activity does indeed occur, it could be somewhat brighter.

REFERENCES

Sekanina, Z. (1999). *Astron. Astrophys.* **342**, 285.

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Tabulation of Comet Observations

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

◇ *Comet 4P/Faye* ⟹ 1998 Dec. 18.08: "the bright star ν Aqr was in the same high-power field, although it was far enough away that it didn't affect the obs. much; however, there was also a 14th-mag star very close to the comet's expected position that probably did interfere w/ the attempt; the comet was successfully observed, at $m_1 = 14.0$, under excellent sky conditions the following night" [HAL]. Dec. 19.08: "excellent sky conditions; despite the comet's faintness, low alt., and location near the zodiacal light, it could be plainly seen; motion detected over the course of $\approx$ 30 min" [HAL].

◇ *Comet 10P/Tempel 2* ⟹ 1999 June 26 onwards: comparison-star magnitudes for this and other comets are taken from catalogue on CD-ROM `Guide 6.0` [LIG]. Aug. 2.32, 3.36, 29.27, 30.28, and Sept. 15.36: w/ 25.6-cm L (169×), main jets still in p.a. 300°-310° and 340° [BIV]. Aug. 4.08: "a faint, large, slightly condensed object — really quite faint and overall very diffuse; however, the central region appears more dense and noticeably brighter than last night (Aug. 3.11)" [BOR]. Aug. 6.98-10.98, Nov. 1.99: `Guide V.07` software was used for comparison-star ref. [DES01]. Aug. 10.08: "w/ 41-cm L (70×), comet has undergone a dramatic change!; coma consists of a small but very bright, dense, well-condensed central mass w/ reasonably well-defined boundaries, subtending $\sim$ 1.′2; it is surrounded by an extensive but exceedingly faint outer halo $\approx$ 3′ in size; the change in the comet's appearance from 6 days ago is one of the most extraordinary short-term transformations that I can recall" [BOR]. Aug. 10.94: comet obs. in reasonably dark sky; large faint outer coma visible [PEA]. Aug. 13.34: central coma quite intense [RAE]. Aug. 14.90: comet obs. in bright sky [PEA]. Aug. 16.52, Sept. 4.49, 28.45, and Oct. 4.47: `GUIDE 7.0` software was used for comparison-star photometry [YOS02]. Aug. 22.56: obs. in a bright moonlit sky; comet a difficult object of low surface brightness in binoculars [PEA]. Aug. 30.05: comet has obviously returned to its former diffuse state following the outburst of Aug. 10; comet is now a faint, vague, and weak object, showing only the slightest tendency of condensing toward the center" [BOR].

Sept. 3.13: central cond. of dia. > 2″ and mag 14.6; coma was strongly asymmetrical in p.a. 288° w/ some jet activity located within this region [ROQ]. Sept. 4.83: comet only 8° over southern horizon; nevertheless, well visible in rather crowded Milky Way field [BOU]. Sept. 6.17: central cond. of dia. < 3″ and mag 14.8; coma appeared strongly asymmetrical in p.a. 280° w/ an irregularly-delineated boundary [ROQ]. Sept. 6.60: "comet located quite close to star of mag 10.1, which may have affected coma dia. estimate; however, the comet seems to be fading very rapidly; it could

be that I was only observing the central regions of the coma, and the outer coma was of such a low surface brightness that it was not visible above the Milky Way background; this comet does not seem to be displaying the same levels of brightness and activity at this return (even though it is very favorably placed for us southern observers) than at the previous favourable return in 1983" [PEA]. Sept. 8.58: comet is located very close to a star of mag 10.5, which may have affected coma dia. estimate [PEA]. Sept. 13.05: w/ 40.6-cm L (70×), coma dia. 2'.8, DC = 0 [BOR]. Sept. 17.55: "the sky was fairly bright due to moonlight, so much of the outer coma probably was not visible" [PEA]. Oct. 11.09: central cond. of dia. > 3″ and mag 14.6; inner coma was symmetrical while the outer coma appeared asymmetrical in p.a. 270° [ROQ]. Nov. 1.99: comet very diffuse [DES01].

◇ *Comet 21P/Giacobini-Zinner* ⟹ 1998 July 13.20: poor sky conditions and clouds [HAL]. Oct. 9.11: "there appears to be a broad, weak antitail 10′ long in p.a. ≈ 315°; this feature was not seen again, incl. the following night, and it is possible this was an illusion created by some faint stars in the comet's vicinity, possibly 'smeared out' by some thin cirrus clouds in the sky; on the other hand, this was the night of the Draconid meteor shower, and the earth was in the plane of the comet's orbit; no Draconid meteors were seen" [HAL]. Oct. 17.12: "in 41-cm L, the tail detected earlier in the month was not seen, although the fan-shaped coma (w/ the central cond. near its apex) extended outward in the same general direction as the previously-seen tail" [HAL]. Nov. 7.08: w/ 41-cm *f*/4 L (72×), 20′ tail in p.a. 60° [HAL]. Nov. 16.09: w/ 41-cm *f*/4 L (72×), 15′ tail in p.a. 50° [HAL]. Dec. 6.07: poor sky conditions [HAL]. Dec. 9.08: the tail is broader and weaker than previously [HAL]. Dec. 17.10: "the comet is definitely fainter and more diffuse than earlier in the month; the near-cond. is at the apex of an ill-defined coma structure that sweeps back into the apparent beginning of a weak tail" [HAL].

◇ *Comet 29P/Schwassmann-Wachmann 1* ⟹ 1998 July 17.16: fairly low alt. [HAL]. Dec. 27.53: low alt. [HAL].

◇ *Comet 37P/Forbes* ⟹ 1999 Aug. 13.35: central cond. of dia. < 2″ and mag 16.3; coma appeared symmetrical; a broad, low-brightness tail was visible showing a diffuse central core w/in the initial 50″ of its length [ROQ]. Sept. 2.21: central cond. of slightly < 3″ and mag 15.9; coma was generally symmetrical but irregularly bounded; tail appeared diffuse, very faint, and devoid of any obvious sub-structure [ROQ]. Sept. 8.89: very faint, round; very fuzzy, no brightening towards center [WAR01]. Sept. 11.02: very faint, at detection limit; small, round [WAR01]. Sept. 30.16: central cond. of dia. < 3″ and mag 15.7; inner coma was symmetrical, w/ the associated tail appearing broad, diffuse, and featureless [ROQ]. Oct. 28.08: central cond. of dia. < 3″ and mag 18.7; coma appeared very faint and symmetrical w/o embedded structure [ROQ].

◇ *Comet 50P/Arend* ⟹ 1999 Sept. 11.12: central cond. of dia. < 4″ and mag 17.0; coma was generally symmetrical, blending into a short, faint, diffuse tail w/o apparent substructure [ROQ].

◇ *Comet 52P/Harrington-Abell* ⟹ 1998 July 29.43: poor sky conditions [HAL]. Aug. 6.47: obs. hurried due to encroaching twilight [HAL]. Nov. 14.31: "the coma is starting to appear a bit fan-shaped, w/ the near-cond. near its apex; overall, the comet looks like a smaller and slightly less condensed version of comet P/1998 U3; the comet maintained this general appearance throughout the rest of 1998" [HAL]. Dec. 23.22: obs. hampered by two nearby moderately-bright stars [HAL].

◇ *Comet 59P/Kearns-Kwee* ⟹ 1999 Oct. 17.10: comet seen fairly easily; comparison stars appear to have zero-point error, maybe as large as 0.5 mag; nearby IC 2213 easily seen, looking slightly brighter and more condensed than 59P [BOU].

◇ *Comet 84P/Giclas* ⟹ 1999 Oct. 16.44: coma was symmetrical with a central cond. of dia. < 3″ and mag 16.3; a very faint and diffuse fan tail w/o internal structure was noted in *R* and *V* [ROQ].

◇ *Comet 88P/Howell* ⟹ 1998 July 15.48: "although still faint and vague, the comet is definitely easier to see than it was during June" [HAL]. Aug. 15.15: "distinctly brighter and easier to see than in July" [HAL]. Dec. 18.07: interference from low alt. and zodiacal light [HAL].

◇ *Comet 93P/Lovas 1* ⟹ 1998 Sept. 22.40: "rich star field; the Digital Sky Survey was unavailable, and it was difficult to locate the comet's exact position" [HAL].

◇ *Comet 106P/Schuster* ⟹ 1999 Oct. 6.18: central cond. of dia. > 2″ and mag 15.6; coma was asymmetrical in p.a. 351°; tail appeared very diffuse w/o substructure [ROQ]. Oct. 14.56: "a vague diffuse spot glimpsed at ephemeris position, mainly w/ averted vision [SEA]. Oct. 30.14: central cond. of dia. 3″ and mag 14.7; coma was asymmetrical in p.a. 42°; a distinct central axial core embedded within the tail was visible in *R* along the initial third of an otherwise diffuse-appearing tail [ROQ].

◇ *Comet P/1998 G1 (LINEAR)* ⟹ 1998 Oct. 17.50: low alt., poor seeing, twilight [HAL]. Oct. 28.50: a very faint, definite suspect was seen, but obs. on the following morning revealed that this was a close pair of very faint stars [HAL]. Nov. 26.48: low alt. [HAL].

◇ *Comet P/1998 QP_{54} (LONEOS-Tucker)* ⟹ 1998 Sept. 19.32: "on all occasions the comet was an extremely faint, diffuse object near the visual threshhold; it took me four obs. before I was completely convinced that I was seeing it!" [HAL].

◇ *Comet P/1998 S1 (LINEAR-Mueller)* ⟹ 1998 Oct. 24.28: mediocre sky conditions [HAL].

◇ *Comet P/1998 U3 (Jäger)* ⟹ 1998 Nov. 1.49: obs. hampered by relatively poor sky conditons and nearby 9th-mag

star [HAL]. Nov. 24.27: "fan-shaped coma, w/ bright region — almost a cond. — at the apex; the comet maintained this same basic appearance throughout the rest of 1998" [HAL].

◇ *Comet C/1995 O1 (Hale-Bopp)* ⟹ 1999 Aug. 21.83: "this comet appears more condensed than when last observed in late July; at 380×, a 14th-mag starlike cond. is visible in moments of good seeing; further observations will be required to determine whether this indicates any increase in nuclear activity; alternatively, the comet could have been located over a faint non-GSC star; the comet lies only ≈ 0°.5 away from the variable star T Vol, for which the RASNZ VSS has a good sequence" [PEA]. Aug. 22.85: comet moderately condensed w/ a starlike cond. suspected under high power on a number of occasions [PEA]. Sept. 10.70 and Oct. 1.60: "comet was not much brighter than the sky background on both occasions, and could have easily been missed during a casual search; coma is circular and shows no hint of structure, apart from a slight central cond. (comet was also seen on several occasions earlier this year as it crossed the Large Magellanic Cloud; recognition, however, was more difficult because of the comet's low rate of motion, and the presence of numerous LMC clusters and nebulosities in the vicinity)" [FAR01]. Sept. 16.85: at 200×, a starlike central cond. of mag 14.3-14.5 was clearly visible, which resulted in the coma appearing slightly more condensed when viewed under lower power when compared to previous obs. [PEA].

Oct. 9.85: comet located quite close to 8th-mag star, which made obs. difficult [PEA]. Oct. 20.84: "the comet seems to undergone some form of nuclear outburst again; very prominent central cond. visible, which is in stark contrast to the fairly diffuse appearance 2 nights ago; the DSS image of this field was checked to ensure that the comet wasn't sitting over the top of a field star, giving it the appearnce of a bright central cond.; however, the DSS image does not show any star brighter than mag ≈ 16-17; outer coma very difficult to detect, due to the brightness of the central cond.; there is no real increase in the overall total brightness of the coma — just a very evident change in its morphology" [PEA]. Oct. 21.84: "a definite stellar central cond. of mag ≈ 14 is clearly visible at both low and high power; this is in stark contrast to the generally diffuse appearance of a few mornings ago; this morning the visual m_1 seems to have increased slightly due to the presence of the bright cond.; checks again against the DSS field show no star in the immediate vicinity of the comet which could give the appearance of a bright cond." [PEA]. Oct. 22.35-22.39: w/ 0.5-m Zeiss telescope, three CCD images taken in response to a report from Andrew Pearce that the comet had undergone a nuclear outburst; m_2 = 12.9-13.2 (USNO A2.0 catalogue used for astrometry); previous images taken on Oct. 15 with same telescope showed comet w/ a diffuse coma (FWHM = 8″.9), while tonight (with interference from moonlight), the coma is significantly more condensed and circular (FWHM = 6″.3); m_1 does not appear to have changed between Oct. 15 and 22, however [Ian P. Griffin and M. Bos, Auckland, New Zealand]. Oct. 22.84: "central cond. still prominent; however, it appears to have decreased somewhat in intensity; moon still visible low in W sky, making the sky background somewhat brighter than on previous mornings, which has affected the amount of outer coma that can be seen; in periods of good seeing, a stellar cond. can be made out clearly in the central coma" [PEA].

◇ *Comet C/1997 BA$_6$ (Spacewatch)* ⟹ 1998 Oct. 17.49: low alt., poor seeing [HAL]. 1999 Sept. 15.86: comet located very close to a star of mag 12.2, which may have affected coma dia. estimate [PEA]. Sept. 16.86: this comet definitely seems to have faded slightly over the last week [PEA]. Oct. 20.85: comet located quite close to star of mag 13.5, which may have affected coma dia. estimate [PEA].

◇ *Comet C/1997 J2 (Meunier-Dupouy)* ⟹ 1998 Aug. 23.23: obs. hurried due to incoming clouds [HAL].

◇ *Comet C/1998 K5 (LINEAR)* ⟹ 1998 July 4.41: relatively poor sky conditions, although the seeing was good; at high magnif. (386×), there seemed to be a tiny bit of coma trailing the cond., which itself seemed to be slightly nonstellar [HAL]. July 14.42: bright moonlight; despite this, the comet appears to be slightly nonstellar [HAL]. July 19.36: definitely nonstellar, although the coma is very small [HAL]. Aug. 16.40: some interference from moonlight; nevertheless, the comet is still clearly nonstellar [HAL]. Sept. 5.48: moonlight; nevertheless, distinctly nonstellar [HAL]. Sept. 19.36: comet is in the SE portion of the Pleiades star cluster [HAL]. Sept. 26.37: "the cond. is at the apex of a small fan-shaped coma; there is a slightly brighter 'spine' emanating from the cond., essentially bisecting this coma; the comet maintained this same basic appearance during the remainder of my obs." [HAL].

◇ *Comet C/1998 M5 (LINEAR)* ⟹ 1998 Aug. 23.37: interference from fast-moving clouds [HAL]. Sept. 21.19: "rich star field; brightness measurement is approximate, due to interference from nearby stars" [HAL]. Dec. 17.06: "low alt.; 10th-mag star w/in coma significantly affected obs." [HAL].

◇ *Comet C/1998 P1 (Williams)* ⟹ 1998 Nov. 15.51: "low alt.; the brightness measurement is almost certainly an underestimate" [HAL]. Nov. 30.49: faint hint of short tail-like structure to the SE seen in 41-cm L [HAL]. Dec. 16.48: weak hint of faint tail-like material to the S seen in 41-cm L [HAL]. Dec. 26.48: beginning of short, broad tail to the S seen in 41-cm L [HAL].

◇ *Comet C/1998 T1 (LINEAR)* ⟹ 1998 Oct. 25.38: some interference from two nearby 10th-mag stars [HAL]. Dec. 7.13: "some interference from a nearby 10th-mag star; the comet was successfully observed, at m_1 = 14.1 on the following night" [HAL]. Dec. 9.14: "on all occasions, the comet was a very faint and diffuse object near the visual threshhold; the comet's motion was nevertheless apparent w/in a brief period of time" [HAL]. 1999 Aug. 6.92-10.94: `Guide V.07` software was used for comparison-star ref. [DES01].

◇ *Comet C/1998 U5 (LINEAR)* ⟹ 1998 Nov. 1.51: poor sky conditions [HAL]. Nov. 11.25: oblong coma, 5′ × 4′ (long direction N-S), w/ cond. off-center toward leading side [HAL]. Dec. 6.10: poor sky conditions [HAL].

◇ *Comet C/1998 Y1 (LINEAR)* ⟹ 1998 Dec. 25.28: "rich star field; a very faint suspect was seen, but determined

to be a very faint star that was shown on the Digital Sky Survey" [HAL].

◇ *Comet C/1999 H1 (Lee)* ⟹ 1999 June 2.80: twilight [BAR06]. June 2.83: twilight [FOG]. Aug. 1.01: "comet barely visible due to low alt. and twilight, but seen at correct location" [GRA04]. Aug. 7.78, 18.71, 24.78: HOC2.exe software was used for comparison-star photometry [NAG08]. Aug. 15.79, 21.77, Sept. 8.74, 28.47, Oct. 4.56, 5.76, and 9.52: GUIDE 7.0 software was used for comparison-star photometry [YOS02]. Aug. 18.98: w/ 30-cm L, 0°.38 anti-tail in p.a. 108° [NEV]. Aug. 19.01: w/ 30-cm *f*/5 L, 15-min exp. on Fuji Suprea 400 film shows faint gas tail 5′ long in p.a. 298° [NEV]. Aug. 19.10: highly condensed object in 20-cm T (50×), but no false nucleus brighter than mag 13.5; anti-tail glimpsed, but not the gas-tail [KAM01]. Aug. 19.62: tab. 'tail' is a thin anti-tail [BIV]. Aug. 21.08: comet close to star of mag 6.2 [SCH04]. Aug. 21.08: faint 0°.08 tail in p.a. 330°; bright 0°.23 anti-tail in p.a. 110° [HOR02]. Aug. 21.99: w/ 30-cm L, 0°.37 anti-tail in p.a. 109° [NEV]. Aug. 22.05, 23.04, Sept. 11.06, and 11.85: anti-tail visible [HOR02]. Aug. 25.11: coma less condensed than six days before in 20.3-cm *f*/10 T (50×); coma of dia. 3′.2 is diffuse towards NW (DC = s5), sharply defined towards SE; no tail visible; at 161×, starlike false nucleus of mag 13.0 visible [KAM01].

Sept. 3.83: disk-like inner coma surrounded by a diffuse outer coma; star-like nucleus suspected in the center of inner coma [BAR06]. Sept. 4.94: w/ 30-cm L (60×), slightly elliptical coma in p.a. 235° [SCH04]. Sept. 5.85: drop-shaped coma more elongated in p.a. 95°-100° (possible tail) [BAR06]. Sept. 8.65, Oct. 4.59, and 8.53: GUIDE 6.0 software was used for comparison-star photometry [HAS08]. Sept. 8.75: w/ 32-cm L (58×), 30′ anti-tail was visible in p.a. 95° [NAG08]. Sept. 8.75, 20.78, Oct. 2.42, 4.45, and 9.51: GUIDE 6.0 software was used for comparison-star photometry [NAG08]. Sept. 8.92: "coma well condensed, diffuse and round (outer parts very diffuse); small disklike central cond. of mag 14 seen at 218×; coma elongated by 2′ towards p.a. ≈ 280° (presumably the base of the sunward tail); tab. tail data are for the very thin anti-tail" [WAR01]. Sept. 9.10: hazy sky [GRA04]. Sept. 10.13: surprisingly large dia. in binoculars; w/ 20-cm T (50×), gradually brightening coma towards center; at 161×, no false nucleus, but instead a tiny knot of material at center [KAM01]. Sept. 10.97: w/ 38-cm L, very diffuse coma w/ much brighter center, small disklike central cond. [WAR01]. Sept. 11.06: surface brightness similar to M33 [GRA04]. Sept. 11.06: 0°.17 tail in p.a. 280° [HOR02]. Sept. 11.84: coma was asymmetric — at one side slightly elongated [BAR06]. Sept. 12.00: comet elongated towards p.a. 220° [KAR02]. Sept. 12.04: "w/ 20-cm L (42×), weak 10′ anti-tail visible (?) in p.a. 90°" [SCH04]. Sept. 12.84: coma diffuse; central cond. of dia. 1′.5; tab. tail data is for anti-tail, whose width was 1′ [AND01]. Sept. 13.11: w/ 20-cm T (161×), no false nucleus, but instead a tiny knot of material at center [KAM01]. Sept. 13.15: w/ 40.6-cm L (70×), coma dia. 5′.6, DC = 5 [BOR]. Sept. 13.52, 15.52, 16.55: in 25.6-cm f/5 L (42×), 0°.6 anti-tail in p.a. 90°; broad (p.a. 185°-260°) fan-shaped 0°.2 tail centered in p.a. 225° [BIV]. Sept. 15.05: "faint narrow fan veil spanning p.a. ~ 255°-280°; as on the previous night, I suspect another tail perhaps 0°.6 long near p.a. 240°" [PER01]. Sept. 16.54: w/ 25.6-cm L (169×), central cond. of mag 13.8 [BIV]. Sept. 19.94: fan-shaped coma [BAR06]. Sept. 21.09: possible fan-like tail ~ 5′ long in p.a. 230° [RES]. Sept. 29.81: star of mag 9.9 in coma [BOU].

Oct. 1.99: faint and ill-defined; surface brightness inferior to M33 [GRA04]. Oct. 3.86: similar in size to, but somewhat paler than NGC 205 [GRA04]. Oct. 4.20: comet close to star of mag 11.0 [PER01]. Oct. 7.17: coma edge skimming two stars (mag 9.6 and 11.0) [PER01]. Oct. 9.94: seen as a faint glow in a moderately light-polluted sky [GRA04]. Oct. 11.80: comet only seen with difficulty [GRA04]. Oct. 12.02: coma round, very diffuse; straight, long, faint tail; very good transparency [WAR01]. Oct. 12.62: "difficult object in a bright sky at low alt. (≈ 10°); however, it was faintly visible above the background sky" [PEA]. Oct. 12.85: "w/ 12×80 B, coma unexpectedly has increased twice in size — from 7′ to 14′ — in comparison with other days of obs. w/ similar sky conditions" [BAR06]. Oct. 15.92: very diffuse outer coma; central cond. displaced towards W; coma possibly elliptical; at 161×, no false nucleus but instead a knot of material w/ dia. ≈ 15″ [KAM01]. Oct. 18.96: very diffuse outer coma; central cond. displaced towards W; at 161×, no false nucleus but instead a knot of material ≈ 15″ in dia. [KAM01]. Nov. 1.97: comet very diffuse and dificult; Guide V.07 software was used for comparison-star ref. [DES01].

◇ *Comet C/1999 J2 (Skiff)* ⟹ 1999 Sept. 7.14: central cond. of dia. slightly > 2″ and mag 17.0; small, faint coma, irregularly defined, but generally symmetrical [ROQ].

◇ *Comet C/1999 J3 (LINEAR)* ⟹ 1999 Sept. 5.04: moonlight [BOU]. Sept. 8.77, Oct. 5.78, 8.80, 11.76, 12.80, and 20.79: GUIDE 6.0 software used for comparison-star photometry [NAG08]. Sept. 10.15: surprisingly easy and well-defined object; beginning of twilight [KAM01]. Sept. 11.07: also visible in 10×50 B [GRA04]. Sept. 12.14: well-defined coma w/ significant cond. towards center; at 161×, no false nucleus [KAM01]. Sept. 13.13: "coma dia. significantly larger than yesterday, still well-defined w/ significant cond. towards center; at 161×, no false nucleus" [KAM01]. Sept. 19.94: slightly elongated coma [BAR06]. Oct. 4.21: comet ~ 9o from Moon (27% illuminated); obs. made sheltered from moonlight [PER01]. Oct. 5.79 and 18.82: GUIDE 7.0 software used for comparison-star photometry [YOS02]. Oct. 6.17: morning twilight [GRA04]. Oct. 6.32-Nov. 2.06: Guide V.07 software was used for comparison-star ref. [DES01]. Oct. 7.06: appeared similar to M78 [GRA04]. Oct. 8.18: sky not the best, slight haze; possible 1° tail spanning p.a. 265°-295° [PER01]. Oct. 8.73: visibility of comet was enhanced when using Swan Band filter [SEA]. Oct. 8.75: GUIDE 6.0 software used for comparison-star photometry [HAS08]. Oct. 10.32, 11.33, 12.33, and 13.33: faint fan tail [DES01]. Oct. 15.18: w/ 20-cm T (50×), slightly condensed, diffuse object; at 161×, no false nucleus brighter than mag 13.5 [KAM01]. Oct. 17.16, comet only 14° above horizon, but easily seen as large, rather condensed object [BOU]. Oct. 18.17: despite very transparent sky, coma significantly smaller than three nights before; w/ 20-cm T (161×), no false nucleus brighter than mag 13.0 [KAM01]. Oct. 27.44 and 28.42: w/ 25.4-cm L (71×), comet appeared brighter toward center, but w/out discrete central cond. [SEA]. Nov. 2.06: comet very faint and large; comet elongated at 92×; no central cond. was noted (incl. at 92×) [DES01].

◇ *Comet C/1999 K8 (LINEAR)* ⟹ 1999 Oct. 16.97: comet close to stars of mag 14.0 and ≈ 14.5 [BOU].

◇ *Comet C/1999 N2 (Lynn)* ⟹ 1999 July 30.89-Aug. 3.90: small, strong central cond. [DES01]. July 30.89-Aug. 17.88: Guide V.07 software was used for comparison-star ref. [DES01]. Aug. 2.35: well condensed and bluish in color; visibility enhanced using Swan Band filter [SEA]. Aug. 2.86: highly condensed object in brighter twilight [KAM01]. Aug. 3.86: obs. in twilight [KAM01]. Aug. 6.47, 7.48, 11.46, and 18.46: HOC2.exe software was used for comparison-star photometry [NAG08]. Aug. 7.86: obs. in deeper twilight; faint gas tail visible [KAM01]. Aug. 9.50, 15.48, and 16.49: GUIDE 7.0 software was used for comparison-star photometry [YOS02]. Aug. 12.90: comet located quite close to an 8th-mag star, which made the mag estimate difficult [PEA]. Sept. 8.86: round coma, well condensed; alt. 7° [WAR01].

◇ *Comet C/1999 S3 (LINEAR)* ⟹ 1999 Sept. 28.14: central cond. of dia. > 2″.3 and mag 14.4; coma was generally symmetrical, merging into a 75° fan tail w/ a centerline at p.a. 192° [ROQ]. Sept. 29.82: comet close to star of mag 10.6; star of mag 12.5 at edge of coma [BOU]. Oct. 4.51: GUIDE 7.0 software was used for comparison-star photometry [YOS02]. Oct. 15.03: comet closing in on star of mag 13.8 [PER01]. Oct. 16.99: nearly stellar cond. of mag 14 in faint coma; short, rather broad tail; stated p.a. is uncertain (maybe ± 10°) [BOU].

◇ *Comet C/1999 T2 (LINEAR)* ⟹ 1999 Oct. 16.99: very small, well condensed object; rather close to star of mag 15.0 (GSC); a check of the POSS plates revealed nothing stellar (or nebular) down to mag ≈ 18 near the observed position [BOU]. Oct. 18.03: central cond. of dia. < 3″ and mag 17.4; the coma was irregularly defined and asymmetrical in p.a. 88°.6 w/ that general sector appearing significantly brighter [ROQ].

◇ *Comet C/1999 T3 (LINEAR)* ⟹ 1999 Nov. 1.14: diffuse central cond. of dia. < 5″ and mag 17.3; coma appeared symmetrical w/o embedded structure [ROQ].

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Key to observers with observations published in this issue, *with 2-digit numbers between Observer Code and Observer's Name indicating source [16 = Japanese observers (c/o Akimasa Nakamura); 32 = Hungarian observers (c/o Krisztian Sarneczky); etc.]. New additions to the Observer Key have asterisks (*) preceding the 5-character code:*

AMO01	35	Alexandre Amorim, Brazil
AND01		Karl-Gustav Andersson, Sweden
*BAL03	32	János Balogh, Hungary
BAR06	37	Alexandr R. Baransky, Ukraine
BIV		Nicolas Biver, France
BOR		John E. Bortle, NY, U.S.A.
BOU	11	Reinder J. Bouma, Netherlands
BRO		Nicholas J. Brown, Australia
CHE03	33	Kazimieras T. Cernis, Lithuania
COM	11	Georg Comello, The Netherlands
COO02		Tim P. Cooper, South Africa
CRE01		Phillip J. Creed, OH, U.S.A.
CSU	32	Mátyás Csukás, Salonta, Romania
DES01		Jose G. de Souza Aguiar, Brazil
DIE02		Alfons Diepvens, Belgium
ENT	07	Len Entwisle, England
ERO	42	Alexei V. Erohin, Russia
FAR01		Fraser Farrell, S. Australia
FOG		Sergio Foglia, Italy
FOL	32	Ferenc Földesi, Hungary
GIL01	11	G. Gilein, The Netherlands
GON05		Juan J Gonzalez, Asturias, Spain
GRA04	24	Bjoern Haakon Granslo, Norway
GRE03	15	Trevor Green, South Africa
HAL		Alan Hale, U.S.A.
HAS02		Werner Hasubick, Germany
HAS08	16	Yuji Hashimoto, Hiroshima, Japan
HOR	12	Tibor Horváth, Hungary
HOR02	23	Kamil Hornoch, Czech Republic
JON07	15	Tony Jones, Cape Town, S. Africa
KAM01		Andreas Kammerer, Germany
KAR02	21	Timo Karhula, Virsbo, Sweden
KOS		Attila Kósa-Kiss, Romania
KUJ	23	Josef Kujal, Czech Republic
KYS	23	J. Kysely, Czech Republic
LIG		Rolando Ligustri, Italy
LUE		Hartwig Luethen, Germany
MAR02	13	Jose Carvajal Martinez, Spain
MAT08		Michael Mattiazzo, S. Australia
MIT	06	Shigeo Mitsuma, Honjo, Japan
MOE		Michael Moeller, Germany
*MOR09		Philippe Morel, France
NAG02	16	Takashi Nagata, Akashi, Japan
NAG08	16	Yoshimi Nagai, Koufu, Japan
NAK01	16	Akimasa Nakamura, Kuma, Japan
NEV	42	Vitali S. Nevski, Belarus
*NEV01	07	Bob Neville, Northants, U.K.
OHM	16	Fumihiko Ohmori, Miyazaki, Japan
PEA	14	Andrew R. Pearce, Australia
PER01		Alfredo J. S. Pereira, Portugal
*PLO	15	Jan Plomp, Pretoria, S. Africa
RAE		Stuart T. Rae, New Zealand
RES	18	Maciej Reszelski, Poland
ROM	42	Aleksandr M. Romancev, Belarus
ROQ		Paul Roques, AZ, U.S.A.
SAL01	42	Michail V. Saltanov, Belarus
SAN04	38	Juan Manuel San Juan, Spain
SAN07	32	Gábor Sánta, Hungary
SAR02	32	Krisztián Sárneczky, Hungary
SCH04	11	Alex H. Scholten, Netherlands
SCO01		James V. Scotti, AZ, U.S.A.
SEA	14	David A. J. Seargent, Australia
*SEG	38	Carlos Segarra, Valencia, Spain
SHA02	07	Jonathan D. Shanklin, England
SHU	42	Sergey E. Shurpakov, Belarus
*SIP	32	Brigitta Sipőcz, Hungary
SKI	24	Oddleiv Skilbrei, Norway
SOU01	35	Willian Carlos de Souza, Brazil
SPR		Christopher E. Spratt, Canada
STO03	07	David Storey, United Kingdom

(Key to Observers, cont.)

SVE	23	Milan Švehla, Czech Republic	TUR	15	Cliff Turk, Cape Town, S. Africa
SZA		Sándor Szabó, Sopron, Hungary	VET		J. C. Vetterlein, United Kingdom
*SZA08	32	Gábor Szabó, Monor, Hungary	WAR01		Johan Warell, Sweden
TOT03	32	Zoltán Tóth, Hungary	YOS02	16	Katsumi Yoshimoto, Hirao, Japan
TSU02	16	Mitsunori Tsumura, Japan	YOS04	16	Seiichi Yoshida, Ibaraki, Japan
TUB	12	Vince Tuboly, Hungary	ZNO	23	Vladimír Znojil, Czech Republic

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Comet C/1995 O1 (Hale-Bopp)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1997 02 17.02	G	S	1.8	AA	0.0	E		1	15	6	2.5		SHU
1997 02 18.67	G	S	1.0	AA	0.0	E		1	16	6			SHU
1997 02 19.64		S	1.5	AA	3	R	5	6	18	6	3		SHU
1997 03 03.04	G	S	1.0	AA	0.0	E		1	12	8	8		SHU
1997 03 04.04	G	S	0.8	AA	0.0	E		1	14	6	14		SHU
1997 03 05.04	G	S	0.5	AA	0.0	E		1	12	6	15		SHU
1997 03 07.04	G	S	0.0	AA	0.0	E		1	12	9	15		SHU
1997 03 08.08	G	S	0.5	AA	0.0	E		1	10	7	15		SHU
1997 03 09.08	G	S	0.5	AA	0.0	E		1	10	9	14		SHU
1997 03 10.08	G	S	0.5	AA	0.0	E		1	10	9	14		SHU
1997 03 11.08	G	S	0.0	AA	0.0	E		1	9	6	15		SHU
1997 03 14.08	G	S	0.3	AA	0.0	E		1	8	9	19		SHU
1997 03 16.08	G	S	-0.2	AA	0.0	E		1	10	7	16		SHU
1997 03 23.73	G	S	-0.5	AA	3.5	R	5	10	10	7			SHU
1997 03 26.73	G	S	-0.8	AA	0.0	E		1	14	6			SHU
1997 04 02.82	G	S	-1.6	AA	0.0	E		1	16	6			SHU
1997 04 03.82	G	S	-1.7	AA	0.0	E		1	14	6	7		SHU
1999 08 07.53		S	12.4	HS	25	L	5	75	1.8	2/			RAE
1999 08 08.40		S	12.4	HS	25	L	5	75	1.5	2/			RAE
1999 08 21.83		S	12.5	VN	41	L	4	90	1.1	6			PEA
1999 08 22.85		S	12.5	VN	41	L	4	90	1.1	5			PEA
1999 09 04.87		S	12.4	VN	41	L	4	90	1.4	3			PEA
1999 09 05.87		S	12.5	VN	41	L	4	90	1.3	3			PEA
1999 09 07.87		S	12.4	VN	41	L	4	90	1.5	3			PEA
1999 09 08.86		S	12.4	VN	41	L	4	90	1.6	2/			PEA
1999 09 09.86		S	12.3	VN	41	L	4	90	1.6	3			PEA
1999 09 10.70		B	12.6	TJ	40.0	L	6	60	0.5	8			FAR01
1999 09 15.85		S	12.5	VN	41	L	4	90	1.5	2			PEA
1999 09 16.85		S	12.4	VN	41	L	4	90	1.4	4			PEA
1999 09 17.85		S	12.4	VN	41	L	4	90	1.4	3			PEA
1999 09 18.84		S	12.5	VN	41	L	4	90	1.1	2/			PEA
1999 09 19.87		S	12.5	VN	41	L	4	90	1.3	2/			PEA
1999 09 22.37		S	12.7	HS	28.0	T	10	175	1.3	5			BIV
1999 09 23.19		S	12.4:	HS	28.0	T	10	175	1	4			BIV
1999 10 01.60		B	12.7	TJ	43.7	L	4	150	0.5	7			FAR01
1999 10 01.84		S	12.5	VN	41	L	4	90	1.4	3			PEA
1999 10 02.77		S	12.4	VN	20	L	4	100	1.3	2			PEA
1999 10 03.84		S	12.6	VN	41	L	4	90	0.9	2			PEA
1999 10 09.85		S	12.7	VN	41	L	4	90	0.7	2			PEA
1999 10 10.84		S	12.6	VN	41	L	4	90	0.9	3			PEA
1999 10 13.67		S	12.7	HS	20	L	7	158	1	3			MAT08
1999 10 14.54		S	12.3	GA	25.4	L	4	71					SEA
1999 10 16.85		S	12.8	VN	41	L	4	90	0.9	3			PEA
1999 10 17.84		S	12.8	VN	41	L	4	90	1.1	3			PEA
1999 10 18.84		S	12.8	VN	41	L	4	90	1.0	3			PEA
1999 10 20.84		S	12.8	VN	41	L	4	90	0.8	7/			PEA
1999 10 21.84		S	12.6	VN	41	L	4	90	0.8	7/			PEA
1999 10 22.84		S	12.8	VN	41	L	4	90	0.7	6/			PEA
1999 10 28.54		S	13.0:	HS	20	L	7	158	1	3			MAT08

Comet C/1997 BA6 (Spacewatch)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 10 17.49		I	[13.5:		41	L	4	183					HAL
1998 10 28.48		I	[14.0:		41	L	4	183					HAL
1998 11 17.49		S	14.1	NP	41	L	4	183	0.5	4/			HAL
1998 11 22.49		S	14.0	NP	41	L	4	183	0.5				HAL
1998 12 17.45		S	13.7	NP	41	L	4	183	0.5				HAL
1998 12 26.42	!	S	13.5	NP	41	L	4	183	& 0.5				HAL
1999 08 21.89		S	13.0	VN	41	L	4	90	0.9	2			PEA
1999 08 22.89		S	13.0	VN	41	L	4	90	1.0	2			PEA
1999 09 04.88	a	S	12.8	VN	41	L	4	90	0.8	2			PEA
1999 09 05.87		S	13.0	VN	41	L	4	200	0.8	2/			PEA
1999 09 07.88	a	S	12.9	VN	41	L	4	90	0.9	2			PEA
1999 09 08.87	a	S	12.9	VN	41	L	4	90	0.8	2			PEA
1999 09 09.86	a	S	12.8	VN	41	L	4	200	0.7	2			PEA
1999 09 15.86	a	S	13.0	VN	41	L	4	200	0.5	2			PEA
1999 09 16.86	a	S	13.1	VN	41	L	4	200	0.6	2			PEA
1999 09 17.86	a	S	13.0	VN	41	L	4	200	0.8	2			PEA
1999 09 18.85	a	S	12.8	VN	41	L	4	200	0.8	2			PEA
1999 09 19.87	a	S	12.8	VN	41	L	4	200	0.8	2			PEA
1999 10 01.86	a	S	12.9	VN	41	L	4	90	0.6	2			PEA
1999 10 02.83	a	S	12.6	VN	20	L	4	100	1.4	2			PEA
1999 10 03.84	a	S	12.5	VN	41	L	4	90	0.9	2			PEA
1999 10 09.85	a	S	12.6	VN	41	L	4	90	0.7	3			PEA
1999 10 10.85	a	S	12.7	VN	41	L	4	90	0.7	3			PEA
1999 10 16.85	a	S	12.8	VN	41	L	4	90	0.7	2			PEA
1999 10 17.85	a	S	12.7	VN	41	L	4	90	0.9	2			PEA
1999 10 18.85	a	S	12.6	VN	41	L	4	90	0.9	2			PEA
1999 10 20.85	a	S	12.9	VN	41	L	4	90	0.6	2			PEA
1999 10 21.85	a	S	12.7	VN	41	L	4	90	0.7	2/			PEA

Comet C/1997 J2 (Meunier-Dupouy)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 07 02.40		M	12.1	AC	41	L	4	72	2				HAL
1998 07 19.32		M	12.2	AC	41	L	4	72	2				HAL
1998 08 14.25		M	11.8	AC	41	L	4	72	2				HAL
1998 08 19.27		M	11.9	AC	41	L	4	72	2				HAL
1998 08 23.23		M	12.1	AC	41	L	4	72	2				HAL
1998 09 12.18		M	12.2	AC	41	L	4	72	2				HAL
1998 09 16.23		M	12.1	AC	41	L	4	72	2				HAL
1998 09 25.27		S	12.1	NP	41	L	4	72	2				HAL
1998 10 10.12		S	12.4	AC	41	L	4	183	2				HAL
1998 10 25.20		S	12.8	NP	41	L	4	72	2				HAL
1998 11 14.16		S	13.0	NP	41	L	4	72	2	3/			HAL

Comet C/1998 K5 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 07 04.41		B	13.2:	AC	41	L	4	183	0.1	9			HAL
1998 07 14.42		B	12.8	NP	41	L	4	183	< 0.1	9			HAL
1998 07 19.36		M	12.4	AC	41	L	4	183	0.1	8			HAL
1998 08 06.45		B	12.3	NP	41	L	4	183	0.1	8			HAL
1998 08 16.40		M	12.7	NP	41	L	4	183	0.1	8			HAL
1998 08 25.42		M	12.7	NP	41	L	4	183	0.2	8			HAL
1998 09 05.48		B	12.6:	NP	41	L	4	183	0.1	8			HAL
1998 09 19.36		M	12.8	PC	41	L	4	183	0.1	8			HAL
1998 09 26.37		M	12.7	PC	41	L	4	72	0.5	8			HAL
1998 10 02.42		M	12.9	PC	41	L	4	183	0.6	8			HAL
1998 10 13.24		M	13.2	NP	41	L	4	183	0.6	8			HAL
1998 10 25.25		M	13.5	NP	41	L	4	183	0.3	8			HAL

Comet C/1998 M2 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 07 17.23		S	13.4	NP	41	L	4	183	1				HAL

Comet C/1998 M5 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 07 02.38		M	12.8	AC	41	L	4	72	0.5	7			HAL
1998 07 19.32		S	12.6	AC	41	L	4	72	1				HAL
1998 08 14.26		M	12.0	AC	41	L	4	72	1				HAL
1998 08 16.26		M	12.0	AC	41	L	4	72	1				HAL
1998 08 23.37		M	12.0:	AC	41	L	4	72	1.5				HAL
1998 09 12.16		M	11.7	NP	41	L	4	72	2				HAL
1998 09 21.19		M	12.0:	NP	41	L	4	72	2				HAL
1998 09 25.22		M	12.0	NP	41	L	4	72	2				HAL
1998 10 10.15		M	11.7	NP	41	L	4	72	2				HAL
1998 10 25.15		M	11.6	NP	41	L	4	72	2				HAL
1998 11 08.10		M	11.0	NP	41	L	4	72	3				HAL
1998 11 17.09		M	11.1	NP	41	L	4	72	3				HAL
1998 12 07.07		M	10.6	NP	41	L	4	72	3				HAL
1998 12 17.06		S	11 :	NP	41	L	4	183	& 2				HAL
1999 03 04.80		S	9.2	HS	5	R	7	83	5	1			SAN07
1999 03 05.77		S	8.7	HS	5.0	B		10	7	3			SAN07
1999 03 09.02		S	9.6	TI	40.6	L		70	2.5	4			BOR
1999 03 10.82		S	9.5:	HS	10	L	10	60	3	2/			SAN07
1999 03 11.79		S	10.0:	HS	10	L	10	60	2.5	2/			SAN07
1999 03 11.85		S	9.2	TI	6	R	12	32	5.5	6			SVE
1999 03 11.96		S	10.0	HS	27	L	6	167	2	4			TOT03
1999 03 16.07		S	9.8	TI	40.6	L		70	2.9	4			BOR
1999 03 17.03		S	9.1	TI	8.0	B		20	6	2			BOR
1999 03 17.03		S	9.6	TI	40.6	L		70	2.8	4			BOR
1999 04 04.78		S	10.0	HS	27	L	6	83	3	3			TOT03
1999 04 04.84		S	10.7	HS	10	L	10	60	2.5	1			SAN07
1999 04 06.06		S	10.1	TI	40.6	L		70	2.7	5/			BOR
1999 04 06.83		S	10.5	HS	26	L	12	100	5	4	0.08	80	TUB
1999 04 08.08		S	10.0	TI	40.6	L		70	3.0	5/			BOR
1999 04 11.00		V	11.6	HS	21	L	4		2.0	8	0.3	45	NEV01
1999 04 13.08		S	10.1	TI	40.6	L		70	3.0	5			BOR
1999 04 14.08		S	10.2	TI	40.6	L		70	3.5	4/			BOR
1999 04 14.84		S	10.5	HS	26	L	12	100	6	5	0.08	80	TUB
1999 04 15.06		S	10.3	TI	40.6	L		70	2.8	4			BOR
1999 05 03.84		S	10.7	HS	20	L	5	70	3	2			BAR06
1999 05 04.83		S	11.1	HS	20	L	5	70	2.8	3/			BAR06
1999 05 05.83		S	11.2	HS	20	L	5	70	2.2	d4			BAR06
1999 05 06.07		S	10.8	TI	40.6	L		70	2.8	2			BOR
1999 05 09.82		C	12.7	HS	20.3	T	6	a360	1.5			95	LIG
1999 05 09.88		S	11.5	HS	26	L	12	128	3	3			TUB
1999 05 10.84		S	11.3:	HS	20	L	5	70	2	2			BAR06
1999 05 11.10		S	11.0	TI	40.6	L		70	2.5	2			BOR
1999 05 16.87		S	11.3	HS	20	L	5	70	2	2			BAR06
1999 05 18.88		S	11.4	HS	20	L	5	70	2.1	3			BAR06
1999 05 19.90		S	11.5	HS	20	L	5	70	1.9	2			BAR06
1999 10 17.82		C	15.4	TJ	18.0	L	6	a 60	0.5				YOS04
1999 10 20.82		C	15.6	TJ	18.0	L	6	a 60	0.45				YOS04
1999 10 22.82		C	14.8	TJ	18.0	L	6	a 60	0.45				YOS04

Comet C/1998 P1 (Williams)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 09 18.40		S	8.7	AA	63	L	5	240	5	5	0.05	110	BRO
1998 11 15.51	!	S	10.1:	NP	20	L	6	49	3				HAL
1998 11 22.52		S	9.4	NP	7.0	B		10	3				HAL
1998 11 30.49		S	9.3	NP	7.0	B		10	3				HAL
1998 12 16.48		S	9.3	NP	7.0	B		10	2.5				HAL
1998 12 26.48		S	9.3	NP	7.0	B		10	3				HAL
1999 01 14.03		S	8.5	HS	27	L	6	83	5	5			TOT03
1999 02 12.88		C	10.9	HS	20.3	T	6	a360	6.2			148	LIG
1999 02 17.90		S	10.5	HS	27	L	6	83	3	3	0.06	135	TOT03
1999 02 18.83		C	11.4	HS	20.3	T	6	a360	5.2			137	LIG
1999 03 13.94		C	13.3	HS	20.3	T	6	a360	3.1			119	LIG
1999 03 19.81		C	13.2	HS	20.3	T	6	a480	1.9			94	LIG
1999 04 06.80		C	14.4	HS	20.3	T	6	a360	1.0				LIG

Comet C/1998 Q1 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 08 26.22		I	[14.0:		41	L	4	183					HAL

Comet C/1998 T1 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 10 12.17		I	[14.0:		41	L	4	183					HAL
1998 10 25.38		I	[13.5:		41	L	4	183					HAL
1998 10 29.39		S	[14.2		41	L	4	183	! 1				HAL
1998 11 09.18		I	[13.5:		41	L	4	183					HAL
1998 11 21.28		I	[14.0:		41	L	4	183					HAL
1998 12 07.13		I	[13.5:		41	L	4	183					HAL
1998 12 09.14		S	14.1	NP	41	L	4	183	1	1			HAL
1998 12 14.18		S	14.1	NP	41	L	4	183	1	1			HAL
1998 12 19.14		S	14.1	NP	41	L	4	183	1.0	1			HAL
1999 07 21.90		S	10.3	HS	63	L	5	240	3	2			BRO
1999 08 01.95	x	S	10.2	TJ	23.0	L	5	67	3	4			DES01
1999 08 02.29		S	10.7	TJ	25.6	L	5	42	5	2			BIV
1999 08 02.80		S	11.5	HS	63	L	5	240	2.5	1			BRO
1999 08 02.96	x	S	10.4	TJ	23.0	L	5	67	3	4			DES01
1999 08 03.30		S	10.6	TJ	25.6	L	5	42	4.5	2			BIV
1999 08 06.92	x	S	10.4	TJ	23.0	L	5	67	3	6			DES01
1999 08 07.45		S	10.6	TT	25	L	5	40	2.9	3			RAE
1999 08 08.38		S	10.7	TT	25	L	5	40	4	3			RAE
1999 08 08.93	x	S	10.5	TJ	23.0	L	5	67	3	6			DES01
1999 08 09.94	x	S	10.5	TJ	23.0	L	5	67	3	5/			DES01
1999 08 10.94	x	S	10.7	TJ	23.0	L	5	67	3	6			DES01
1999 08 13.80		S	12.0	HS	63	L	5	240	2	1			BRO
1999 08 29.27		S	10.9:	TJ	25.6	L	5	42	3	1			BIV
1999 08 30.26		S	11.6	TJ	25.6	L	5	42	2	1			BIV
1999 09 06.44		S	[13.0	HS	20	L	7	158					MAT08

Comet C/1998 U5 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 11 01.51		M	12.2	NP	41	L	4	72	2	4/			HAL
1998 11 11.25		M	10.4	NP	41	L	4	72	5	6			HAL
1998 11 12.80		S	9.5	AC	7.2	R	7	20	5	4			TUB
1998 11 12.81		S	9.5	AC	10.0	R	13	40	3		0.03	220	HOR
1998 11 13.77		S	9.0	AC	7.2	R	7	20	6	4			TUB
1998 11 13.85		S	9.5	AC	10.0	R	13	40	3		0.02	210	HOR
1998 11 15.22		S	9.2	NP	7.0	B		10	7				HAL
1998 11 16.82		S	9.5	AC	10.0	R	13	40	3	2	0.02	210	HOR
1998 11 19.75		S	9.5	AC	15.0	R	15	75	5	5			TUB
1998 11 19.77		S	9.8	AC	15.0	R	15	90	3				HOR
1998 11 21.27		M	10.0	NP	41	L	4	72	5				HAL
1998 11 25.24		M	10.0	NP	41	L	4	72	4				HAL
1998 12 06.10		S	9.8:	NP	41	L	4	72	4				HAL
1998 12 09.09		M	9.8	NP	41	L	4	72	4				HAL
1998 12 17.09		S	9.7	NP	7.0	B		10	3				HAL

Comet C/1999 F2 (Dalcanton)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 06 30.58		C	15.1:	TJ	18.0	L	6	a 90	0.3				YOS04

Comet C/1999 H1 (Lee)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 05 16.80		S	7.2	AA	63	L	5	100	8.5	4			BRO
1999 05 17.08		S	6.5	TI	5.0	B		10	11	4			BOR
1999 05 18.81		S	7.5	AA	6	R	6	51	6	3			ERO
1999 05 18.87		S	7.8:	HS	5.0	B		10	3				SAN07
1999 05 19.81		S	7.2	HS	11	L	7	50	6	3			BAR06
1999 05 21.08		S	6.6	TI	5.0	B		10	11	4			BOR
1999 05 21.08		S	6.6	TI	8.0	B		20	7	5			BOR

Comet C/1999 H1 (Lee) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 05 22.80		S	6.8	AA	5.0	B		7	4	2			ERO
1999 05 28.81		S	7.4	AA	6	R	6	51	8	3			ERO
1999 05 30.80		S	7.0	AA	6	R	6	51	9	4			ERO
1999 06 01.80		S	6.6:	HS	11	L	7	50	5	3			BAR06
1999 06 01.81		S	7.6	AA	6	R	6	51	9	3/			ERO
1999 06 02.80		S	6.7:	HS	11	L	7	50	4	2			BAR06
1999 06 02.83		S	7.3	HI	11.4	L	8		4	5			FOG
1999 06 03.80		S	7.1	AA	6	R	6	51	9	3	7 m		ERO
1999 06 03.85		S	6.8	HS	27	L	6	83	1.5				TOT03
1999 06 03.85	a	S	6.3	TT	8.0	B		10	7	3			HOR02
1999 06 03.86		S	6.5:	HS	15.2	L	4	31	6	S6			SZA08
1999 06 04.80		S	7.6	AA	6	R	6	51	6	3			ERO
1999 06 05.09		S	6.5	TI	8.0	B		20	3.5	5			BOR
1999 06 05.70		S	6.8	AA	63	L	5	100	10.5	5			BRO
1999 06 05.86	a	S	6.2	TT	8.0	B		10	6	3/			HOR02
1999 06 09.08		S	6.4	TI	8.0	B		20	3.5	6			BOR
1999 06 15.49		B	7.8	HS	20.0	L	4	40	3	5			OHM
1999 07 29.09		S	6.6	TT	5.0	B		10	7	3			HOR02
1999 08 01.01		S	6.6	TJ	7.0	R	7	24	3				GRA04
1999 08 02.07	x	S	6.8	TJ	15.6	L	5	29	3.5	5			BOU
1999 08 02.35		S	7.2	TI	8.0	B		20	4	6			BOR
1999 08 02.61		S	7.1	TJ	5.0	B		7	5	6			BIV
1999 08 02.62		S	7.2	TJ	25.6	L	5	42	3.5	7			BIV
1999 08 03.08		S	6.8	TT	8.0	B		10	8	3			HOR02
1999 08 06.07		S	7.5	TJ	8.0	B		20	3.8	5			SHA02
1999 08 06.08		S	6.6	TT	8.0	B		10	8	3			HOR02
1999 08 06.12		S	7.0	AA	8.0	B		20	5	4/			PEA
1999 08 06.96		S	7.0	TJ	7.0	R	7	24	4	5			GRA04
1999 08 06.98		B	6.9	S	11.0	B		20	& 3	4			CHE03
1999 08 07.96		M	6.9	TJ	7.0	R	7	24	4	4			GRA04
1999 08 08.06		S	7.4	AA	8.0	B		15	4.5	7/			SCH04
1999 08 08.78	xs	S	7.2	TJ	32.0	L	5	58	3	6			NAG08
1999 08 08.79		S	6.7	S	15.0	R	5	25	3	7			NAG02
1999 08 09.07		M	7.1	TT	8.0	B		10	4	6			HOR02
1999 08 09.07		S	7.5	AA	8.0	B		15	4	8			SCH04
1999 08 09.77	&	S	7.7	HS	15.0	B		25	3	4/			HAS08
1999 08 09.98		S	6.6	AC	6.0	B		20	5	6			RES
1999 08 10.00		S	7.3	AA	6	R	6	7	11	1			ERO
1999 08 10.06		M	7.2	HS	5.0	B		10	7	D7	0.12	310	SAN07
1999 08 10.07		S	7.8	HS	6.0	B		20	8	5	0.33	310	SAR02
1999 08 10.11		S	7.2	AA	8.0	B		20	4.7	5			PEA
1999 08 11.00		S	6.9	AA	5.0	B		7	12	1			ERO
1999 08 11.05	!	S	7.1	TJ	10	B		14	3.3	5			SHA02
1999 08 11.08		M	7.5	HS	15.2	L	4	44	5	s7	0.10	315	SAN07
1999 08 11.09		M	7.6	HS	6.3	R	13	50	5	s6	0.14	310	SAN07
1999 08 11.09		S	7.6	HS	15.2	L	4	31	3	7	0.05	320	SZA08
1999 08 11.09		S	7.7	HS	15.2	L	4	31	4	5	0.05	295	SIP
1999 08 11.13		S	7.2	AA	8.0	B		20	7	5			PEA
1999 08 11.96		S	7.2	AA	5.0	B		7	8	2			ERO
1999 08 11.96		S	8.2	AG	8.0	B		20	6	4			VET
1999 08 12.01	s	M	6.9	PA	25	L	4	64	6	4/			SHU
1999 08 12.02		S	8.4	AG	10	R		30	8	4			VET
1999 08 12.08		S	7.6	HS	20.0	L	9	90	3	4/	0.08	250	SIP
1999 08 12.12		S	7.2	AA	8.0	B		20	6	5			PEA
1999 08 12.98		M	7.4	TJ	7.0	R	7	24	4	5			GRA04
1999 08 13.01		S	6.6	AC	6.0	B		20	6	5			RES
1999 08 13.76		S	7.0	S	15.0	R	5	25	4	6			NAG02
1999 08 13.95		M	7.4	TJ	7.0	R	7	24	5	5			GRA04
1999 08 13.98	s	M	6.9	SE	25	L	4	64	4	4			SHU
1999 08 14.01		S	6.7	AC	6.0	B		20	5	4			RES
1999 08 14.07		S	7.6	AA	8.0	B		15	6	8			SCH04
1999 08 14.08		M	7.5	TT	8.0	B		10	6.5	4			HOR02
1999 08 15.08		S	7.6:	TJ	10	B		14	3.8	5			SHA02
1999 08 15.13		M	7.5	S	7.0	B		10	6	7			MAR02
1999 08 15.79	x	M	7.8	TT	10.0	B		20	5	5			YOS02

Comet C/1999 H1 (Lee) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 08 15.90		E	7.2	AA	20	L	5	33	6	2			ROM
1999 08 15.92		M	7.3	PA	25	L	4	38	4	5			SHU
1999 08 15.96		S	7.2:	TJ	8.0	B		20	3.8	4			SHA02
1999 08 15.99		S	7.4	AA	5.0	B		7	7	1			ERO
1999 08 16.11		S	7.4	AA	8.0	B		20	6.6	5			PEA
1999 08 16.91		M	7.3	PA	25	L	4	64	4	4			SHU
1999 08 16.95		E	7.7	AA	20	L	5	33	5	2			ROM
1999 08 16.95		S	8.0	AG	5.0	B		7	6	3			VET
1999 08 16.96		S	8.2	AG	8.0	B		20	8	3			VET
1999 08 16.96		S	8.2	AG	10	L		30	8	3			VET
1999 08 17.08	x	S	7.1	TJ	8.0	B		15	5.4	4/			BOU
1999 08 17.78		C	8.6	TJ	16.0	H	3 a	40	6.0		14.9m	298	YOS04
1999 08 18.71	xs	S	7.4	TJ	3.5	B		7	9	7			NAG08
1999 08 18.75		C	8.7	TJ	18.0	L	6 a	60	3.9		16.7m	106	YOS04
1999 08 18.92		M	7.3	PA	25	L	4	64	5	6			SHU
1999 08 18.95		M	7.7	TJ	20.3	T	10	80	3.3	5			GRA04
1999 08 18.97		E	7.7	AA	20	L	5	33	5	2			ROM
1999 08 18.97		S	6.9	TJ	5.0	B		7		6			SKI
1999 08 18.98		M	7.4	AA	30	L	5	60	5	d5	0.38	108	NEV
1999 08 18.98		S	7.0	AC	6.0	B		20	4	4			RES
1999 08 18.98		S	7.8	AA	5.0	B		7	6	3			ERO
1999 08 19.09		S	7.6	HS	6.0	B		20	7	5	0.5	300	SAR02
1999 08 19.10					20.3	T	10	50	3.5	6	0.15	70	KAM01
1999 08 19.10		B	8.0	TJ	6.3	B		9					KAM01
1999 08 19.62		S	7.4	TJ	5.0	B		7	5	5			BIV
1999 08 19.62		S	7.6	TJ	25.6	L	5	42	4	6	0.3	100	BIV
1999 08 19.90		S	6.9	AC	6.0	B		20	5	5/			RES
1999 08 19.98		S	7.8	AA	5.0	B		7	6	1			ERO
1999 08 19.99		E	7.7	AA	20	L	5	33	5	3			ROM
1999 08 20.07		S	7.8	AA	8.0	B		15	6	8			SCH04
1999 08 20.91		M	7.1	PA	10	R	4	18	8.5	1			SAL01
1999 08 20.95		M	7.3	PA	25	L	4	64	5	5/			SHU
1999 08 21.08		S	7.2	AA	5.0	B		7	5	7	0.3	300	KOS
1999 08 21.08		S	7.5	TT	8.0	B		10	4.5	6			HOR02
1999 08 21.08		S	8.0:	TT	8.0	B		15	6	8			SCH04
1999 08 21.59		S	7.5	TJ	5.0	B		7	8	5			BIV
1999 08 21.77	x	S	7.3	TT	3.5	B		7	& 7	5			YOS02
1999 08 21.78		S	7.2	S	15.0	R	5	25	5	5			NAG02
1999 08 21.79		C	8.6	TJ	16.0	H	3 a	20	6.0		22.8m	103	YOS04
1999 08 21.91		M	7.0	PA	25	L	4	64	5	5			SHU
1999 08 21.92		M	7.3	PA	10	R	4	18	8.5	3			SAL01
1999 08 21.97		S	7.9	AA	5.0	B		7	6	3			ERO
1999 08 21.98		M	7.5	AA	5.0	B		10	5	4/	0.06	305	SAN07
1999 08 21.98		S	7.2	S	8.0	B		20	10	5			STO03
1999 08 21.98		S	7.5	AA	11	B		20	4	3			NEV
1999 08 21.99		M	7.3	AA	30	L	5	60	5	5	0.37	109	NEV
1999 08 22.03	&	B	8.1	HS	8.0	B		20	6	2			MOR09
1999 08 22.05		M	7.5	TT	8.0	B		10	5	5	0.33	110	HOR02
1999 08 22.08		M	7.2	TI	5.0	B		7	7	4			KYS
1999 08 22.08		S	7.1	AC	6.0	B		20	6	5			RES
1999 08 22.60		S	7.7	TJ	5.0	B		7	7	5			BIV
1999 08 22.76		C	8.8	TJ	16.0	H	3 a	30	5.0		18.4m	103	YOS04
1999 08 22.80		C	7.3	TT	12.5	L	5	23					TSU02
1999 08 22.88		M	7.0	PA	25	L	4	38	3	4/			SHU
1999 08 22.94		M	7.5	TJ	7.0	R	7	24	5	4			GRA04
1999 08 22.95		S	7.7	AA	5.0	B		7	5	d3			ERO
1999 08 22.98		S	7.0	TJ	5.0	B		7		6			SKI
1999 08 23.02		M	7.0	PA	25	L	4	64	4.5	4			SHU
1999 08 23.04		M	7.3	TI	5.0	B		7	7	3/			KYS
1999 08 23.04		M	7.6	TT	8.0	B		10	5	5	0.25	110	HOR02
1999 08 23.08		S	7.2	AA	5.0	B		7	5	7	0.8	300	KOS
1999 08 23.12	&	B	8.0	HS	8.0	B		20	3.5	2	12 m	308	MOR09
1999 08 23.61		S	7.7	TJ	5.0	B		7	6	5			BIV
1999 08 23.91		S	7.5	TJ	7.0	R	7	24	4.5	4			GRA04
1999 08 24.04		E	7.6	AA	20	L	5	33	7	5			ROM

Comet C/1999 H1 (Lee) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 08 24.06		S	8.2	AG	5.0	B		7	8	4			VET
1999 08 24.06		S	8.3	AG	8.0	B		20	8	3			VET
1999 08 24.08		S	7.1	AA	5.0	B		7	5	7	1.0	300	KOS
1999 08 24.09		M	7.0	AA	5.0	B		10	8	s7	0.10	270	SAN07
1999 08 24.09	x	M	7.5	TJ	8.0	B		15	4.1	5			BOU
1999 08 24.34		S	7.2	TI	5.0	B		10	6	5			BOR
1999 08 24.60		S	7.8	TJ	5.0	B		7	8	5			BIV
1999 08 24.78	x	S	7.4	TJ	8.0	B		11	6	6			NAG08
1999 08 24.96		S	7.5	AC	6.0	B		20	4	3/			RES
1999 08 25.08		M	7.6	TT	8.0	B		10	5.5	5	0.33	110	HOR02
1999 08 25.11		B	7.2	HV	6.3	B		9					KAM01
1999 08 25.11	&	B	7.9	HS	8.0	B		20	4.0	2			MOR09
1999 08 25.63		S	7.8	TJ	5.0	B		7	8	5			BIV
1999 08 25.97		S	7.4	AC	6.0	B		20	3	3/			RES
1999 08 27.10		S	7.0	AA	5.0	B		10	6	6	0.03	270	SAN07
1999 08 27.89		I[	8.4	TJ	10	B		14					SHA02
1999 08 28.02	&	B	8.0	HS	8.0	B		20	4.0	2			MOR09
1999 08 28.95		S	7.5	AC	6.0	B		20	3	4			RES
1999 08 29.10	&	S	7.8	HS	40.6	L	6	139	3.9	5	3.4m	310	MOR09
1999 08 29.91		E	8.0	AA	20	L	5	33	5	4			ROM
1999 08 29.99		S	7.4	AC	6.0	B		20	5	4			RES
1999 08 30.78		M	8.0	TI	11	L	7	50	4.5	3/			BAR06
1999 08 30.78		S	7.7	TI	8.0	B		12	5	4			BAR06
1999 08 30.91		S	7.7	TJ	8.0	B		20	4.7	3			SHA02
1999 08 31.69		C	8.5	TJ	16.0	H	3 a	20	5.6		27.8m	101	YOS04
1999 08 31.83		S	8.3:	TI	11	L	7	50	4	3/			BAR06
1999 08 31.87	x	S	7.7	TJ	8.0	B		15	6	4			BOU
1999 08 31.91		S	7.6	AC	6.0	B		20	6	4			RES
1999 08 31.99		S	7.5	TJ	7.0	R	7	24	5.5	3/			GRA04
1999 09 01.12	&	S	7.9	HS	8.0	B		20	3	1			MOR09
1999 09 01.92		S	7.6	AC	6.0	B		20	4.5	4			RES
1999 09 02.12	&	S	8.0	HS	20.3	L	4	61	4.4	5			MOR09
1999 09 02.88		S	8.2	TT	20.0	L	4	42	& 6	6			SCH04
1999 09 02.89	x	S	7.8	TJ	8.0	B		15	5.5	4			BOU
1999 09 02.90		S	7.7	AC	6.0	B		20	5	4			RES
1999 09 02.90		S	8.1	TT	8.0	B		15	& 5	7			SCH04
1999 09 02.91		M	7.6	TT	8.0	B		10	6	3/			HOR02
1999 09 02.92		S	7.7	TJ	7.0	R	7	24	5.5	3/			GRA04
1999 09 02.94		S	6.9	AA	5.0	B		7	5	3			ERO
1999 09 03.02	&	S	8.0	HS	8.0	B		20	4	5			MOR09
1999 09 03.58		S	7.9	TJ	5.0	B		7	7	4			BIV
1999 09 03.82		E	8.2	AA	20	L	5	33	6	4			ROM
1999 09 03.83		M	7.6	PA	25	L	4	64	5	4			SHU
1999 09 03.83		S	7.8	TT	8.0	B		12	8	d4			BAR06
1999 09 03.87		M	7.7	TT	8.0	B		10	7.5	3			HOR02
1999 09 03.90		S	7.0	AA	5.0	B		7	6	1			ERO
1999 09 03.90	x	S	7.7	TJ	8.0	B		15	6	4/			BOU
1999 09 03.91		S	8.1	TT	8.0	B		15	10	7			SCH04
1999 09 03.95		S	7.7	AC	6.0	B		20	4.5	4/			RES
1999 09 04.03	&	S	8.1	HS	8.0	B		20	6	5	8 m	262	MOR09
1999 09 04.06		S	8.3	TJ	10	B		14	4.6	4			SHA02
1999 09 04.08		S	8.2	AA	15.0	R	8	30	4	8			DIE02
1999 09 04.56		S	7.8	TJ	5.0	B		7	7	5			BIV
1999 09 04.76		C	8.9	TJ	18.0	L	6 a	30	4.4		26.3m	98	YOS04
1999 09 04.77		S	7.8	S	15.0	R	5	25	5	4/			NAG02
1999 09 04.80		M	7.7	PA	25	L	4	38	5	3			SHU
1999 09 04.85		M	7.7	TT	8.0	B		10	8	3			HOR02
1999 09 04.87		E	8.2	AA	20	L	5	33	6	3			ROM
1999 09 04.88		S	8.2	TJ	8.0	B		20	5.9	7			STO03
1999 09 04.90		M	8.6	AA	30	L	5	60	5	5	0.17	91	NEV
1999 09 04.90		S	7.3	AA	5.0	B		10	10	5	0.10	285	SAN07
1999 09 04.92		S	7.1	AA	5.0	B		7	6	3			ERO
1999 09 04.92		S	8.2	TT	20.3	T	10	50	3	2			LUE
1999 09 04.94		S	8.1	TT	8.0	B		15	9	7			SCH04
1999 09 04.96	x	M	7.7	TJ	8.0	B		15	5.5	4/			BOU

Comet C/1999 H1 (Lee) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 09 04.97		M	7.2	S	7.0	B		10	7	3			MAR02
1999 09 04.99		S	7.8	AC	6.0	B		20	4	5			RES
1999 09 05.11		S	8.5	TJ	10	B		14	4.3	4			SHA02
1999 09 05.15		S	8.6	TJ	33	L	5	45	3.0	4			SHA02
1999 09 05.80		C	9.1	TJ	18.0	L	6 a	60	5.7		28.3m	97	YOS04
1999 09 05.85		M	8.0	TT	8.0	B		10	8	3			HOR02
1999 09 05.85		S	7.9	TT	8.0	B		12	8	4			BAR06
1999 09 05.85		S	8.1	TT	11	L	7	50	6	3/			BAR06
1999 09 05.89		E	8.3	AA	20	L	5	33	7	S3			ROM
1999 09 05.89		S	7.6	TT	10.0	B		25	5.2	4			HAS02
1999 09 05.89	x	M	7.8	TJ	8.0	B		15	6.5	4/			BOU
1999 09 05.90		M	8.5	AA	30	L	5	60	5	5	0.26	91	NEV
1999 09 05.91		S	7.5	AA	5.0	B		7	5	2			ERO
1999 09 05.91		S	7.5	AA	5.0	B		10	7	4	0.08	300	SAN07
1999 09 05.92		M	8.1	TT	10	B		25	8	3			KUJ
1999 09 05.92		S	7.9	TJ	7.0	R	7	24	4.5	3			GRA04
1999 09 05.93		S	7.5	TJ	5.0	B		7		6			SKI
1999 09 05.96		S	7.8	AC	6.0	B		20	4	4			RES
1999 09 06.05		M	7.6	TI	5.0	B		7	7	4			KYS
1999 09 06.08		S	7.7	HS	6.0	B		20	7	5			SAR02
1999 09 06.09		S	8.2	TJ	10	B		14	4.3	4			SHA02
1999 09 06.54		S	7.9	TJ	5.0	B		7	7	5			BIV
1999 09 06.91		S	7.5	AA	5.0	B		7	6	2			ERO
1999 09 06.92		S	8.0	AC	20	L	4	114	2.5	4			FOL
1999 09 06.95		S	8.2	AA	15.0	R	8	30	4	8			DIE02
1999 09 06.97		S	7.7	AC	6.0	B		20	6	4			RES
1999 09 06.98		S	7.7	AA	6.0	B		20	6.5	3			CSU
1999 09 07.06		S	7.8	TJ	7.0	R	7	24	5.5	4			GRA04
1999 09 07.07		S	7.5	AC	6.3	R	13	52	8	5			KOS
1999 09 07.12	&	S	8.2	HS	20.3	L	4	61	3.2	2			MOR09
1999 09 07.63		S	7.8	TJ	5.0	B		7	8	5			BIV
1999 09 07.86		S	8.8	AG	10	R	6	30	6	2			VET
1999 09 07.88		S	7.6	S	11.0	B		20	4	4			CHE03
1999 09 07.89		S	7.1	AA	5.0	B		7	8	2			ERO
1999 09 07.92		S	8.0:	TJ	8.0	B		10	5.0	4			SHA02
1999 09 07.96		S	8.0	TJ	20	R	14	40	3.3	4			SHA02
1999 09 07.98		S	7.9	AC	6.0	B		20	4	3			RES
1999 09 08.07		M	7.7	TJ	7.0	R	7	24	6.5	4			GRA04
1999 09 08.09		S	7.5	TT	5.0	B		10	5.6	4			HAS02
1999 09 08.61		S	7.8	TJ	5.0	B		7	7	4			BIV
1999 09 08.65	x	S	8.0	TJ	15.0	B		25	6	5			HAS08
1999 09 08.74	x	M	8.0	TT	10.0	B		20	7	5			YOS02
1999 09 08.75	x	S	7.4	TJ	8.0	B		11	9	6			NAG08
1999 09 08.81		S	7.2:	TI	5.0	B		7	8	3			KYS
1999 09 08.87	x	S	7.7	TJ	5.0	B		7	6	3			BOU
1999 09 08.89		B	7.5	S	11.0	B		20	4.5	4			CHE03
1999 09 08.92		S	7.9	SC	44.5	L	5	60	3.5	6/	0.6	95	WAR01
1999 09 08.93	x	R	9.6	HV	20.3	T	6 a	120	4.0		&28.0m	95	LIG
1999 09 08.94		S	8.0	AC	6.0	B		20	6	3			RES
1999 09 08.97		S	8.3	AC	30.5	T	10	78	& 5	5/			COM
1999 09 09.01		S	8.1	TT	8.0	B		15	9	7/			SCH04
1999 09 09.01		S	8.1	TT	20.0	L	4	42	7	6/			SCH04
1999 09 09.01	&	S	8.0	HS	8.0	B		20	5	2			MOR09
1999 09 09.02		M	7.6	AA	30	L	5	60	7	5	0.33	92	NEV
1999 09 09.04		S	7.8	TJ	10.0	B		14	6	3/	0.6	265	PER01
1999 09 09.09		S	7.8	AA	15.0	R	8	30	6	8			DIE02
1999 09 09.10		S	7.8	TJ	7.0	R	7	24	6	4			GRA04
1999 09 09.14		S	8.1	TT	5.0	B		10	5	7			GIL01
1999 09 09.61		S	7.6	TJ	5.0	B		7	9	5			BIV
1999 09 09.86		E	8.8:	AA	20	L	5	33	6	3			ROM
1999 09 09.86		S	7.3	AA	5.0	B		7	8	2			ERO
1999 09 09.86		S	7.8	TT	8.0	B		12	9	3			BAR06
1999 09 09.90		S	7.6	TT	3.5	R		6	11	2/			BAR06
1999 09 09.91		S	8.0	AC	6.0	B		20	5	3			RES
1999 09 09.97		S	8.2	TJ	20	R	14	40	4.2	5			SHA02

Comet C/1999 H1 (Lee) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 09 10.04		S	7.7	TJ	10.0	B		14	7	3	0.7	270	PER01
1999 09 10.08		M	7.8	TT	8.0	B		10	10	3	0.33	100	HOR02
1999 09 10.13		S	7.9	HV	6.3	B		9	9	3			KAM01
1999 09 10.13		S	8.0	TI	6	R	12	32	5.5	7			SVE
1999 09 10.60		S	7.5	TJ	5.0	B		7	10	4			BIV
1999 09 10.85		M	7.9	TT	8.0	B		10	10	3/			HOR02
1999 09 10.87		M	8.2	AA	30	L	5	60	7	4			NEV
1999 09 10.87		S	9.0	AG	10	R	6	30	6	2			VET
1999 09 10.88		S	6.9	AA	5.0	B		7	10	2			ERO
1999 09 10.91		E	8.3	AA	20	L	5	33	7	4			ROM
1999 09 10.92		B	8.0	TT	10.0	B		25	9.3	4			HAS02
1999 09 10.92		S	8.1	AC	6.0	B		20	4	4/			RES
1999 09 10.93		B	7.9	S	11.0	B		20	4	3			CHE03
1999 09 10.97					38	L	4	82	5	7	0.6	95	WAR01
1999 09 10.97		S	7.8	HS	2.5	B		8	5	7			WAR01
1999 09 11.03	&	S	7.9	HS	40.6	L	6	139	7.3	5			MOR09
1999 09 11.04		S	7.6	AA	5.0	B		8	6	7			DIE02
1999 09 11.04		S	7.6	AC	10	B		35	10	3			SZA
1999 09 11.05		M	7.2	AA	6.0	B		20	12	3	0.07	305	SAN07
1999 09 11.06		M	7.8	TJ	7.0	R	7	24	9.5	4			GRA04
1999 09 11.06		M	7.9	TT	8.0	B		10	11	3/	0.33	100	HOR02
1999 09 11.06		S	7.8	TJ	5.0	B		10	9	4/			GRA04
1999 09 11.06	x	R	9.5	HV	20.3	T	6	a120	6.0		&28.0m	90	LIG
1999 09 11.07		S	7.2	AC	6.3	R	13	52	15	5			KOS
1999 09 11.24		M	7.9	AA	8.0	B		16	10	4	0.1	270	CRE01
1999 09 11.60		S	7.7	TJ	5.0	B		7	10	3			BIV
1999 09 11.74		C	9.7	TJ	18.0	L	6	a 30	4.7				YOS04
1999 09 11.82		M	8.0	SE	25	L	4	38	5	3			SHU
1999 09 11.83		M	7.7	TI	20	L	4	34	5.8	3/			KYS
1999 09 11.84		E	8.5	AA	20	L	5	33	7	3			ROM
1999 09 11.84		S	7.6	TT	3.5	R		6	11	3			BAR06
1999 09 11.84		S	7.7	TT	8.0	B		12	9	s4			BAR06
1999 09 11.85		M	7.9	TT	8.0	B		10	11	3/	0.3	95	HOR02
1999 09 11.89	x	M	7.8	TJ	8.0	B		15	5.5	4/			BOU
1999 09 11.92		S	7.2	AA	5.0	B		7	11	1			ERO
1999 09 11.93		S	7.8	AC	6.0	B		20	6	3/			RES
1999 09 11.96		S	7.5	AA	6.0	B		20	6.5	3			CSU
1999 09 11.98		B	7.9	S	11.0	B		20	5.5	3			CHE03
1999 09 12.00		S	7.4	HS	10.0	B		20	7	7			KAR02
1999 09 12.04		M	8.0	SE	25	L	4	38	6	3		12	SHU
1999 09 12.04		S	8.3	TT	20.0	L	4	42	7	6			SCH04
1999 09 12.05		E	8.4	AA	20	L	5	33	6	4			ROM
1999 09 12.05		S	8.2	TT	8.0	B		15	9	6			SCH04
1999 09 12.07		S	8.0	TT	30.5	T	10	78	& 5	6			COM
1999 09 12.09		S	7.9	TJ	8.0	B		20	5.0	4			SHA02
1999 09 12.12		S	7.7	TT	8.0	B		12	8	d4/			BAR06
1999 09 12.12		S	8.0	HV	6.3	B		9	8	3			KAM01
1999 09 12.12		S	8.1	TT	5.0	B		10	6	4			ENT
1999 09 12.17		S	7.7	TI	5.0	B		10	8	5			BOR
1999 09 12.17		S	7.8	TI	8.0	B		20	8	5			BOR
1999 09 12.60		S	7.7	TJ	5.0	B		7	8	3			BIV
1999 09 12.74	x	C	8.1	HV	8.0	R	6	a120	11.4		46 m	91	NAK01
1999 09 12.77		C	9.2	TJ	16.0	H	3	a 30	4.7				YOS04
1999 09 12.81		E	8.8	AA	20	L	5	33	6	S5			ROM
1999 09 12.83		M	8.0	TT	8.0	B		10	10	3	0.17	95	HOR02
1999 09 12.84		S	7.9	TI	5.0	B		7	6.5	3			KYS
1999 09 12.84		S	8.0	SC	25.4	L	6	80	6	4	0.12		AND01
1999 09 12.86		S	7.9	AC	6.0	B		20	5	3			RES
1999 09 12.87	x	C	9.9	HV	20.3	T	6	a120	5.0		&20.0m	90	LIG
1999 09 12.90		S	7.9	TT	20.3	T	10	50	3	2			LUE
1999 09 12.91		S	7.1	AA	5.0	B		7	9	1			ERO
1999 09 12.93		S	7.7	TT	8.0	B		12	8	3/			BAR06
1999 09 12.96		S	8.0	HS	27	L	6	83	6	4	0.22	90	TOT03
1999 09 13.07		B	8.3	TT	10.0	B		25	5.8	4			HAS02
1999 09 13.08		S	7.4	AC	6.3	R	13	52	12	4			KOS

Comet C/1999 H1 (Lee) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 09 13.11		M	8.4	TT	10	B		25	6	5			KUJ
1999 09 13.11		S	7.9	HV	6.3	B		9	10.5	3			KAM01
1999 09 13.15		S	7.8	TI	8.0	B		20	8	5			BOR
1999 09 13.54		S	7.5	TJ	5.0	B		7	11	4	0.4	100	BIV
1999 09 13.55		S	7.7	TJ	25.6	L	5	42	9	5	0.7	90	BIV
1999 09 13.80		M	7.9	TI	5.0	B		7	8.0	3			KYS
1999 09 13.86		S	7.9	AC	6.0	B		20	5	4			RES
1999 09 13.90		M	7.9	TT	5.0	B		10	12	3/			HOR02
1999 09 13.92		S	7.5	AA	6.0	B		20	6.5	3			CSU
1999 09 14.05		M	7.9	TJ	7.0	R	7	24	11	3/			GRA04
1999 09 14.05		S	7.8	TJ	3.4	B		9	6	3/			PER01
1999 09 14.05		S	7.8	TJ	10.0	B		14	6	3/	1.0	260	PER01
1999 09 14.08		S	7.6	AC	6.3	R	13	52	8	3			KOS
1999 09 14.79		S	8.3	TI	5.0	B		7	7	4			KYS
1999 09 14.81		S	8.1	AC	6.0	B		20	5.5	3			RES
1999 09 14.84		S	7.9	TT	8.0	B		10	11	3			HOR02
1999 09 14.86		S	8.7	TJ	8.0	B		20	5.1	5			STO03
1999 09 15.05		S	8.0	TJ	10.0	B		14	8	3/	0.8	265	PER01
1999 09 15.64		S	7.7	TJ	5.0	B		7	9	4			BIV
1999 09 15.77		M	8.2	AA	25	L	4	64	7	3			SHU
1999 09 15.85		M	8.0	TT	8.0	B		10	11	3/	0.25	90	HOR02
1999 09 15.85		S	8.1	AC	6.0	B		20	4	3			RES
1999 09 15.90		S	8.0	AC	6.0	B		20	6.5	2			BAL03
1999 09 15.91		B	8.2	S	11.0	B		20	3.5	3			CHE03
1999 09 16.00		S	8.2	AA	15.0	R	8	30	6	6			DIE02
1999 09 16.12	&	S	7.9	HS	20.3	L	4	61	6.1	5	5.6m	224	MOR09
1999 09 16.56		S	8.0	TJ	5.0	B		7	8	4			BIV
1999 09 16.99		S	7.8	TT	8.0	B		12	10	2			BAR06
1999 09 17.11		S	7.7	TJ	8.0	B		10	5.0	5			SHA02
1999 09 17.86		S	8.3	AC	6.0	B		20	4	3			RES
1999 09 17.90		S	7.8	TT	5.0	B		10	8	4			ENT
1999 09 17.92		S	7.7	TT	11	L	7	50	10	3			BAR06
1999 09 17.92		S	8.1	TT	12.5	R	5	25	6	7			GIL01
1999 09 17.93		S	7.3	AA	5.0	B		7	13	2			ERO
1999 09 18.00		M	8.2	PA	25	L	4	38	3.5	2/			SHU
1999 09 18.14		S	8.0	TJ	7.0	R	7	24	10	3			GRA04
1999 09 18.15		S	7.9	TJ	10	B		14	7.8	3			SHA02
1999 09 18.84	a	M	7.9	PA	25	L	4	64	5.5	3			SHU
1999 09 18.90		B	8.4	S	11.0	B		20	4	3			CHE03
1999 09 18.91		S	7.0	AA	5.0	B		7	13	3			ERO
1999 09 18.97		S	8.2	AC	6.0	B		20	4	3			RES
1999 09 18.99		M	8.0	TT	11	L	7	50	7	3			BAR06
1999 09 18.99		S	7.7	TT	8.0	B		12	9	3			BAR06
1999 09 19.04	a	M	7.7	PA	25	L	4	64	6	3			SHU
1999 09 19.09		S	7.7	TT	8.0	B		12	9	3/			BAR06
1999 09 19.80		C	9.7	TJ	18.0	L	6 a	30	8.2				YOS04
1999 09 19.87		S	7.7	AA	5.0	B		7	11	1			ERO
1999 09 19.94		S	7.8	TT	8.0	B		12	8	3			BAR06
1999 09 19.94		S	8.0	TT	11	L	7	50	7	3			BAR06
1999 09 19.95		S	8.3	AC	6.0	B		20	5	3/			RES
1999 09 20.05		M	7.8	PA	25	L	4	64	6	3			SHU
1999 09 20.78	x	S	7.9	TJ	8.0	B		11	6	5			NAG08
1999 09 20.82		C	9.8	TJ	18.0	L	6 a	30	4.9				YOS04
1999 09 20.86		S	8.6	TJ	10	B		14	5.2	3			SHA02
1999 09 21.09		S	8.3	AC	6.0	B		20	9	4			RES
1999 09 21.14		S	8.1	TT	5.0	B		10	8	7			GIL01
1999 09 21.83		S	8.2	TT	11	L	7	50	7	2/			BAR06
1999 09 22.07		M	7.8	TT	8.0	B		12	8	3			BAR06
1999 09 22.09		S	8.3	AC	6.0	B		20	9	3			RES
1999 09 22.10		S	8.1	AC	30.5	T	10	78	& 5	5/			COM
1999 09 22.12	x	S	8.0	TJ	8.0	B		15	7	3			BOU
1999 09 23.11		S	8.3	TJ	8.0	B		10	6.0	2			SHA02
1999 09 23.49		C	10.0	TJ	16.0	H	3 a	20	4.1				YOS04
1999 09 24.14		S	8.1	AA	15.0	R	8	30	6	4			DIE02
1999 09 24.14	&	S	8.2	HS	20.3	L	4	61	5.2	1			MOR09

Comet C/1999 H1 (Lee) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 09 24.72		C	9.2	TJ	10.7	A	6	a120	9.3				YOS04
1999 09 25.58		C	10.8	TJ	18.0	L	6	a 30	1.4				YOS04
1999 09 26.65		C	11.2	TJ	18.0	L	6	a 30	2.5				YOS04
1999 09 26.93	&	S	8.3	HS	20.3	L	4	61	4.8	1			MOR09
1999 09 27.73		C	11.0	TJ	16.0	H	3	a 30	3.3				YOS04
1999 09 27.83		S	8.4:	TJ	10	B		14	5.3	4			SHA02
1999 09 28.47	x	S	9.2	TT	25.4	L	4	46	4.1	3			YOS02
1999 09 28.71		C	10.0	TJ	16.0	H	3	a 30	5.3				YOS04
1999 09 28.85		M	8.4	S	10	R		27	6	2			MAR02
1999 09 28.86		S	8.3	TJ	10.0	B		14	8	2/			PER01
1999 09 29.77		S	7.5	AC	5.0	B		10	8	3/	0.05	270	SAN07
1999 09 29.78		S	8.8	HD	6.0	B		20	6	d5	0.3	70	SAR02
1999 09 29.81	x	S	8.3	TJ	8.0	B		15	7				BOU
1999 09 29.85		S	9.5	TJ	20	R	14	40	1.9	4			SHA02
1999 09 29.87		S	8.3	S	10	R		27	7	2			MAR02
1999 09 29.88		S	9.4	TJ	15	L	8	30	2.6	3			SHA02
1999 09 29.89		S	9.2	TJ	33	L	5	45	2.6	4			SHA02
1999 09 30.85		S	8.9	TT	11	L	7	50	6	3			BAR06
1999 09 30.89		S	8.5	S	10	R		27	5	2			MAR02
1999 09 31.91		S	11.2	NP	20	L		30	3	2			SEG
1999 10 01.79		S	8.0	HS	27	L	6	83	6	3/			TOT03
1999 10 01.81		B	8.7	TT	10.0	B		25	4.5	4			HAS02
1999 10 01.82		S	8.6	AC	6.0	B		20	4	2/			RES
1999 10 01.86		M	8.1	TT	8.0	B		10	10	3			HOR02
1999 10 01.87	x	C	10.6	HV	20.3	T	6	a120	5.0		&12.0m		LIG
1999 10 01.87	x	C	10.6	HV	20.3	T	6	a120	5.0		&12.0m		LIG
1999 10 01.99		S	8.3	TJ	7.0	R	7	24	9	2/			GRA04
1999 10 02.42	x	S	9.1	TJ	32.0	L	5	58	5	4			NAG08
1999 10 02.59		C	10.7	TJ	18.0	L	6	a 30	4.4				YOS04
1999 10 02.73		S	8.4	AA	30	L	5	60	7	d3			NEV
1999 10 02.75		M	8.2	TT	8.0	B		10	11	3			HOR02
1999 10 02.79		S	9.4	TJ	33	L	5	60	3.4	3			SHA02
1999 10 02.79	a	M	8.9	SE	25	L	4	64	4	4			SHU
1999 10 02.80	x	S	8.4	TJ	8.0	B		15	8	2/			BOU
1999 10 02.81		S	8.6	TT	8.0	B		12	6.5	3/			BAR06
1999 10 02.81		S	8.8	TT	11	L	7	50	4.5	3			BAR06
1999 10 02.92		S	8.1	TT	30.5	T	10	77	& 5	5/			COM
1999 10 02.92		S	8.8	TJ	8.0	B		10	5.7	2			SHA02
1999 10 02.92		S	9.3	TJ	8.0	B		20	5.7	2			SHA02
1999 10 02.93		S	8.9	TT	12.5	R	5	31	5	5			GIL01
1999 10 03.00		M	9.1	PA	25	L	4	64	3.5	4			SHU
1999 10 03.01		E	9.1	AA	18	L	7	45	4	3			ERO
1999 10 03.18		S	8.4	AA	8.0	R	5	15	4.5	3/			SPR
1999 10 03.72		S	8.6	AA	30	L	5	60	6	3			NEV
1999 10 03.78		S	9.0	SE	25	L	4	64	4	3			SHU
1999 10 03.81		S	8.8	TT	11	L	7	50	4.5	3			BAR06
1999 10 03.84		S	8.9	AA	15.0	R	8	30	5	4			DIE02
1999 10 03.86		S	8.5	TJ	7.0	R	7	24	10	2			GRA04
1999 10 03.89		S	8.6	S	10	R		27	6	2			MAR02
1999 10 03.94		S	8.5	TJ	8.0	B		10	10	2			SHA02
1999 10 04.06		S	8.1	TT	8.0	B		12	10	3			BAR06
1999 10 04.06		S	8.6	TT	11	L	7	50	6	3			BAR06
1999 10 04.20		S	8.7	TJ	10.0	B		14	7	3			PER01
1999 10 04.45	x	S	9.4	TJ	32.0	L	5	58	3.5	4	10 m	60	NAG08
1999 10 04.56	x	S	9.5	TT	10.0	B		20	4	3			YOS02
1999 10 04.59	x	S	9.0	TJ	15.0	B		25	5	4			HAS08
1999 10 04.76	a	M	8.9	SE	25	L	4	64	4.5	2/			SHU
1999 10 04.77		S	8.6	TJ	15.2	L	5	42	6.5	3			MOE
1999 10 04.79		S	8.7	AC	6.0	B		20	3	2			RES
1999 10 04.79		S	9.4	TJ	33	L	5	45	4.8	3			SHA02
1999 10 04.83		S	8.2	TT	8.0	B		12	9	3			BAR06
1999 10 05.19		S	8.5	AA	8.0	R	5	15	4.5	3			SPR
1999 10 05.19		S	9.3	TJ	10	B		14	7.3	2			SHA02
1999 10 05.73		S	9.2	AA	30	L	5	60	4.5	s3			NEV
1999 10 05.76		S	8.8	TJ	15.2	L	5	42	6.5	3			MOE

Comet C/1999 H1 (Lee) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 10 05.76	x	S	8.9	TT	10.0	B		20	5	2			YOS02
1999 10 05.79		S	8.9	AC	6.0	B		20	3	2/			RES
1999 10 05.79	x	S	8.6	TJ	8.0	B		15	7	2			BOU
1999 10 05.81		S	9.1	TJ	33	L	5	45	2.9	3	0.20	55	SHA02
1999 10 05.84		S	9.2	AC	30.5	T	10	56	& 4	4			COM
1999 10 05.87		S	9.0	AC	15.0	R	8	30	5	4			DIE02
1999 10 05.87		S	9.2:	TT	20.0	L	4	42	& 5	6			SCH04
1999 10 06.00		E	9.5	AA	18	L	7	45	3.5	2			ERO
1999 10 06.82		S	8.8	AC	6.0	B		20	3	2			RES
1999 10 06.92		S	8.0	TJ	5.0	B		10	11	2			GRA04
1999 10 07.13		S	8.7	TI	5.0	B		7	7	4			KYS
1999 10 07.17		S	8.4	TJ	3.4	B		9	&15	3/			PER01
1999 10 07.17		S	8.7	TJ	10.0	B		14	12	3			PER01
1999 10 07.77		S	8.2	TJ	7.0	R	7	24	12	2/			GRA04
1999 10 07.80		S	8.3	AC	5.0	B		10	8	1/			SAN07
1999 10 07.80		S	8.9	AC	6.0	B		20	6	2			RES
1999 10 07.81	x	C	10.7	HV	20.3	T	6 a	90	5.0				LIG
1999 10 07.83		S	8.9	TT	10.0	B		25	4.7	3			HAS02
1999 10 07.85		M	8.3	TT	8.0	B		10	10	3			HOR02
1999 10 08.19		S	8.7	TJ	10.0	B		14	9	2			PER01
1999 10 08.53	x	S	9.5	TJ	15.0	B		25	4	3/			HAS08
1999 10 08.55		M	9.2	AA	15.0	B		25	5	4			MIT
1999 10 08.66		C	9.8	TJ	18.0	L	6 a	30	6.1				YOS04
1999 10 08.81		S	8.8	TI	21	L		60	5	2/			MAR02
1999 10 08.86		S	8.1	TJ	7.0	R	7	24	11	2			GRA04
1999 10 08.94		S	9.2	HD	6.0	B		20	8	5			SAR02
1999 10 08.98		B	8.7	S	11.0	B		20	3.5	2			CHE03
1999 10 09.18		S	8.5	AA	8.0	R	5	15	5.0	2/			SPR
1999 10 09.51	x	S	9.7	TJ	32.0	L	5	58	3.1	4			NAG08
1999 10 09.52	x	S	9.5	TT	10.0	B		20	5	3			YOS02
1999 10 09.76		S	9.8	TJ	25.4	T	6	62	3	4			YOS04
1999 10 09.83		S	8.4	TT	8.0	B		12	7	3			BAR06
1999 10 09.83		S	8.8	AC	6.0	B		20	8	2			RES
1999 10 09.92		S	8.7	S	21	L		60	6	2/			MAR02
1999 10 09.94		S	8.3	TJ	7.0	R	7	24	10	2			GRA04
1999 10 10.01		S	8.7	S	8.0	B		11	8	2			GON05
1999 10 10.19		S	8.6	AA	8.0	R	5	15	4.5	3			SPR
1999 10 10.43		C	11.4	TJ	18.0	L	6 a	30	2.4				YOS04
1999 10 10.75		S	9.4	TJ	25.4	T	6	32	6.5	4			YOS04
1999 10 10.80		S	9.2	TT	10.0	B		25	2.9	3			HAS02
1999 10 10.84		S	8.7	TT	11	L	7	50	5	3			BAR06
1999 10 11.50		C	10.8	TJ	18.0	L	6 a	30	3.2				YOS04
1999 10 11.76		S	9.0	TJ	15.2	L	5	42	6.0	2			MOE
1999 10 11.80		S	8.6	TJ	7.0	R	7	24	10	2			GRA04
1999 10 11.82		S	8.9	AC	6.0	B		20	6	2/			RES
1999 10 12.02		S	9.3	HS	22.0	L	5	50	10	3	0.5	30	WAR01
1999 10 12.58		C	9.5	TT	12.5	L	5	31	5.0	2			TSU02
1999 10 12.62	x	S	9.2	TT	20	L	4	45	5	2			PEA
1999 10 12.79		S	9.4	TT	6	R	12	38	5.5	6			SVE
1999 10 12.79	a	M	9.1	SE	25	L	4	64	5	2/			SHU
1999 10 12.80		S	9.6	TT	20.0	L	4	42	5	6			SCH04
1999 10 12.82		M	8.9	TT	8.0	B		10	10	2/			HOR02
1999 10 12.85		S	8.4	TT	8.0	B		12	14	2/			BAR06
1999 10 12.85		S	8.7	TT	11	L	7	50	7	3			BAR06
1999 10 12.93		S	8.9	TJ	10	B		14	5.4	5			SHA02
1999 10 12.98		S	9.4	AC	15.0	R	8	30	3	2			DIE02
1999 10 12.99		S	9.3	TT	31.0	T	10	56	& 4	3			COM
1999 10 13.09		S	8.5	TT	8.0	B		12	11	2			BAR06
1999 10 13.54		S	9.7	HI	20	L	7	45	3	4			MAT08
1999 10 13.72	a	M	9.4	SE	25	L	4	64	4	3			SHU
1999 10 13.77		S	9.1	TI	5.0	B		7	17	4			KYS
1999 10 13.79		S	8.9	TT	8.0	B		10	9	2			HOR02
1999 10 13.80		S	9.7	TJ	33	L	5	45	4.3	2			SHA02
1999 10 13.81		S	9.6	TT	20.0	L	4	42	5	5			SCH04
1999 10 13.84		S	9.5	AC	15.0	R	8	30	2	2			DIE02

Comet C/1999 H1 (Lee) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 10 13.91	x	S	9.2	TJ	25.4	J	6	47	5	1/			BOU
1999 10 13.94		S	9.8	HS	27	L	6	83	3.5	3			TOT03
1999 10 14.81		S	9.1	AC	6.0	B		20	3	2			RES
1999 10 14.85		S	9.2	TJ	15.2	L	5	42	5.5	2			MOE
1999 10 15.07		S	9.3	TJ	10.0	B		14	8	2			PER01
1999 10 15.12		S	8.7	TT	8.0	B		10	9	2			HOR02
1999 10 15.35	&	S	9.3	HS	12.7	D	10	50	2.9	2	8.8m	103	MOR09
1999 10 15.77		S	8.8	TT	8.0	B		10	10	2			HOR02
1999 10 15.77		S	9.3	TJ	15.2	L	5	42	6.0	2			MOE
1999 10 15.81		S	8.9	TI	5.0	B		7	10	4			KYS
1999 10 15.81		S	9.4	TT	6	R	12	38	5	5/			SVE
1999 10 15.81		S	10.1	AC	15.0	R	8	30	2	2			DIE02
1999 10 15.84		S	9.7	TT	30.5	T	10	56	& 5	1/			COM
1999 10 15.85		S	9.2	AC	6.0	B		20	3	2			RES
1999 10 15.87	x	S	9.2	TJ	8.0	B		15	7	1/			BOU
1999 10 15.92		S	9.5	TJ	30.5	T	10	75	4.5	d3/			KAM01
1999 10 16.01		S	9.9	TT	20.0	L	4	42	4	4/			SCH04
1999 10 16.82		S	8.9	TT	8.0	B		10	9	2			HOR02
1999 10 16.83		S	10.0	TT	6	R	12	38	3	5			SVE
1999 10 16.86		S	9.4	TJ	15.2	L	5	42	5.0	2			MOE
1999 10 16.87	x	S	9.3	TJ	8.0	B		15	6.5	1			BOU
1999 10 16.91		S	9.3	AC	5.0	B		10	6	1			SAN07
1999 10 16.95		S	9.9	TT	20.0	L	4	42	& 6	5			SCH04
1999 10 17.02		S	9.5	TT	11	L	7	50	5	2			BAR06
1999 10 17.03		S	10.1	AC	15.0	R	8	30	2	2			DIE02
1999 10 17.04		S	9.4	TJ	10	B		14	6.5	3			SHA02
1999 10 17.62	x	S	9.6	TT	20	L	4	45	3	2			PEA
1999 10 17.69		C	11.4	TJ	18.0	L	6 a	30	3.0				YOS04
1999 10 17.85		S	9.3	AC	6.0	B		20	6	1			RES
1999 10 18.08		S	9.3	TJ	10	B		14	6.9	2			SHA02
1999 10 18.92		S	9.3	AC	6.0	B		20	5	2			RES
1999 10 18.96		S	9.7	TJ	30.5	T	10	75	2.5	d3			KAM01
1999 10 18.96	&	S	9.4	HS	20.3	L	4	61	6	1			MOR09
1999 10 18.96	x	S	9.3	TJ	8.0	B		15	7	1/			BOU
1999 10 19.78		S	9.6	TJ	15.2	L	5	42	4.0	2			MOE
1999 10 20.04		S	9.9	TJ	10	B		14	6.1	1			SHA02
1999 10 20.06		S	9.1	TT	8.0	B		10	8	2			HOR02
1999 10 20.68		C	11.4	TJ	18.0	L	6 a	30	3.2				YOS04
1999 10 23.04		S	9.8:	TT	11	L	7	50	& 5	2			BAR06
1999 10 27.47		S	10.8	TI	20	L	7	45	2	3			MAT08
1999 10 27.74		S	10.8	HS	27	L	6	83	3	1			TOT03
1999 10 28.51		S	11.1	TI	20	L	7	45	2	3			MAT08
1999 10 29.69		M	11.1	NP	30	L	5	60	2.5	2			NEV
1999 10 29.72		M	10.6	SE	25	L	4	64	2	3			SHU
1999 10 29.74		S	10.5	TJ	15.2	L	5	42	2.5	1			MOE
1999 10 30.81		S	10.4	TJ	33	L	5	75	2.1	3			SHA02
1999 10 30.82	x	S	10.7	TJ	25.4	J	6	47	4	0/			BOU
1999 10 31.73		S	10.6	TJ	15.2	L	5	42	2.5	2			MOE
1999 10 31.74		S	10.5	TT	44.0	L	5	156	0.7	3			HAS02
1999 10 31.87		S	10.7	HS	27	L	6	83	2.5	2			TOT03
1999 10 31.91	x	S	10.8	TJ	25.4	J	6	47	3.5	1			BOU
1999 11 01.97	x	S	11.0	TJ	23.0	L	5	67	3	2			DES01

Comet C/1999 H3 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 06 21.64		C	14.6	TJ	18.0	L	6 a	60	0.55				YOS04
1999 06 26.82		S	13.1	HS	40	C	14	180	0.7	0/			SAN07
1999 06 30.60		C	14.4	TJ	18.0	L	6 a	60	0.55				YOS04
1999 07 01.88		S[	12.3	HS	27	L	6	83					TOT03
1999 07 08.62		C	14.4	TJ	18.0	L	6 a	60	0.9				YOS04
1999 07 13.90		S	13.8:	HS	44.5	L	5	168	0.8	d3			SAN07
1999 07 14.93		S	13.7:	HS	44.5	L	5	229	1	2			SAN07
1999 07 18.89		S	13.3	HS	35	L	5	158	1.4	3			HOR02
1999 07 19.89		S	13.2	HS	35	L	5	158	1.3	3			HOR02

Comet C/1999 H3 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 07 31.87		S	13.2	HS	35	L	5	158	1.2	3			HOR02
1999 08 01.88		S	13.1	HS	35	L	5	158	1.3	3			HOR02
1999 08 04.90		S	12.9	HS	35	L	5	158	1.4	3			HOR02
1999 08 06.85		S	12.7	HS	35	L	5	158	1.4	3			HOR02
1999 08 08.87		S	13.0	HS	35	L	5	158	1.5	3/			HOR02
1999 08 08.91		S	12.8	HS	27	L	6	83	0.5				TOT03
1999 08 13.50		C	15.1	GA	60.0	Y	6	a120	0.6				NAK01
1999 08 13.85		S	13.2	HS	35	L	5	158	1.4	3			HOR02
1999 08 14.86		S	12.9	HS	35	L	5	158	1.5	2/			HOR02
1999 08 19.89		S	13.0	AC	25.0	L	6	100	0.9	2/			RES
1999 09 02.81		S	13.4	HS	35	L	5	158	1.0	2/			HOR02
1999 09 03.82		S	13.4	HS	35	L	5	158	1.1	3			HOR02
1999 09 04.81		S	13.5	HS	35	L	5	208	1.0	2/			HOR02
1999 09 04.87		S	13.8	HS	40.0	L	5	133	0.8	3			BOU
1999 09 05.50		C	15.4	TJ	18.0	L	6	a 60	0.35				YOS04
1999 09 05.81		S	13.6	HS	35	L	5	208	1.2	2/			HOR02
1999 09 05.84		O	12.8:	HS	20	L	4	57	& 1.0	2			KYS
1999 09 05.84		S	14.0	HS	44.0	L	5	156	0.5	3			HAS02
1999 09 07.87		S	13.7:	VB	30	R	20	230	0.8	3			SHA02
1999 09 09.80		S	13.6	HS	35	L	5	208	0.9	2/			HOR02
1999 09 09.86		S	13.6	VB	30	R	20	185	0.6	3			SHA02
1999 09 10.81		S	13.6	HS	35	L	5	208	1.1	2/			HOR02
1999 09 10.83		S	14.2	HS	44.0	L	5	156	0.3	4			HAS02
1999 09 11.45		C	14.7:	TJ	18.0	L	6	a 60	0.5				YOS04
1999 09 11.81		S	12.7:	HS	20	L	4	57	1.5	2			KYS
1999 09 11.81		S	13.6	HS	35	L	5	208	1.2	3			HOR02
1999 09 12.79		S	13.6	HS	35	L	5	208	1.2	3			HOR02
1999 09 12.82		S	13.1:	HS	20	L	4	57	1.5	2			KYS
1999 09 14.80		S	13.6	HS	35	L	5	208	1.1	2/			HOR02
1999 09 15.80		S	13.6	HS	35	L	5	208	1.0	3			HOR02
1999 10 01.77		S	13.7	HS	35	L	5	208	1.2	2/			HOR02
1999 10 02.80		S	13.6	HS	35	L	5	166	1.2	2/			HOR02
1999 10 10.77		S	14.0	HS	44.0	L	5	156	0.6	3			HAS02
1999 10 11.40		C	14.2	HS	18.0	L	6	a 60	0.7				YOS04
1999 10 13.74		S	13.6	HS	35	L	5	166	1.1	3			HOR02

Comet C/1999 J2 (Skiff)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 06 30.61		C	15.9	TJ	18.0	L	6	a 60	0.55				YOS04
1999 07 18.90		S	14.4	HS	35	L	5	237	0.8	2			HOR02
1999 08 08.88		S	14.4	HS	35	L	5	237	0.8	2/			HOR02
1999 08 13.51		C	16.1	GA	60.0	Y	6	a120	0.35		0.7m	31	NAK01
1999 08 14.87		S	14.6	HS	35	L	5	237	0.8	2/			HOR02
1999 09 02.83		S	14.4	HS	35	L	5	237	0.9	3			HOR02
1999 09 03.83		S	14.4	HS	35	L	5	208	0.9	3			HOR02
1999 09 04.55		C	15.1	TJ	18.0	L	6	a 60	0.5				YOS04
1999 09 04.82		S	14.4	HS	35	L	5	208	0.9	3			HOR02
1999 09 04.88		S	14.8	HS	40.0	L	5	200	0.4	5			BOU
1999 09 05.51		C	15.1	TJ	18.0	L	6	a 60	0.6				YOS04
1999 09 05.82		S	14.3	HS	35	L	5	208	0.9	2/			HOR02
1999 09 07.14	!	J	15.7	SC	25.4	T	5	a 60	0.24	s3			ROQ
1999 09 09.82		S	14.4	HS	35	L	5	237	0.9	2/			HOR02
1999 09 10.83		S	14.3	HS	44.0	L	5	156	0.2	4			HAS02
1999 09 10.83		S	14.5	HS	35	L	5	208	0.9	3			HOR02
1999 09 11.81		S	14.5	HS	35	L	5	208	1.0	3			HOR02
1999 09 12.80		S	14.5	HS	35	L	5	208	0.9	3			HOR02
1999 09 14.81		S	14.5	HS	35	L	5	208	0.8	2/			HOR02
1999 09 15.80		S	14.4	HS	35	L	5	208	0.9	3			HOR02
1999 10 01.78		S	14.3	HS	35	L	5	208	1.1	3			HOR02
1999 10 02.80		S	14.2	HS	35	L	5	166	1.1	2/			HOR02
1999 10 03.42		C	16.2	GA	60.0	Y	6	a240	0.5		2.0m	20	NAK01
1999 10 10.41		C	15.7	TJ	18.0	L	6	a 60	0.35				YOS04
1999 10 10.77		S	14.5	HS	44.0	L	5	156	0.7	3			HAS02
1999 10 13.75		S	14.2	HS	35	L	5	166	1.0	2/			HOR02

Comet C/1999 J3 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 07 31.85		S	12.3	TI	35	L	5	158	2.2	1/			HOR02
1999 08 01.89		S	12.0	TI	35	L	5	158	2.4	1/			HOR02
1999 08 02.28		S	11.8:	HS	25.6	L	5	42	1.5	3			BIV
1999 08 02.88		S	12.4	HS	20.3	T	10	93	1.0	3			HAS02
1999 08 03.26		S	11.5:	HS	25.6	L	5	42	1.5	2			BIV
1999 08 04.87		S	11.8	TI	35	L	5	158	2	1/			HOR02
1999 08 05.92		S	12.4	NP	32	L	5	125	0.5	1			MAR02
1999 08 05.93		S	11.9	HS	25.4	J	6	88	1.9	1/			BOU
1999 08 05.94		S[	11.0	HS	14	R	14	65					SHA02
1999 08 08.07		S	10.6	HS	39	L	5	138	2.4	3/			SAR02
1999 08 08.84		S	11.8	TI	35	L	5	92	2.3	2			HOR02
1999 08 08.87		S	11.2	HS	27	L	6	83	1.5	2			TOT03
1999 08 09.83		S	11.2	TI	10	B		25	3	1/			HOR02
1999 08 13.84		S	10.8	TT	35	L	5	92	2.9	2			HOR02
1999 08 14.85		S	10.8	TT	35	L	5	92	2.7	2/			HOR02
1999 08 15.09		S	10.5	TJ	10	B		14	2.5	3			SHA02
1999 08 17.09	x	S	11.1	TJ	25.4	J	6	88	2.2	2			BOU
1999 08 18.77		C	12.7	TJ	18.0	L	6	a 60	1.7	1			YOS04
1999 08 19.84		M	10.0	TT	35	L	5	92	4	2/			HOR02
1999 08 19.88		S	10.6	AC	25.0	L	6	100	2.0	2			RES
1999 08 20.84		M	9.9	TT	35	L	5	92	4	2			HOR02
1999 08 22.06		M	9.8	TT	13	L	8	69	3.9	2			HOR02
1999 08 23.07		M	9.8	TT	35	L	5	92	3.9	2/			HOR02
1999 08 23.08		S	10.0	HS	27	L	6	83	2.0	3/			TOT03
1999 08 24.09	x	S	10.5	TJ	25.4	J	6	72	2.3	2/			BOU
1999 08 25.08		S	9.5	AC	6.0	B		20	2	3/			RES
1999 08 25.09		M	9.7	TT	35	L	5	92	4	2/			HOR02
1999 08 31.85	x	S	10.0	TJ	25.4	J	6	58	2.5	2/			BOU
1999 09 01.90		S	9.1	AC	6.0	B		20	3	3			RES
1999 09 02.90		S	9.0	AC	6.0	B		20	2	3/			RES
1999 09 03.83	x	S	9.8	TJ	25.4	J	6	58	3.2	2/			BOU
1999 09 04.77		C	12.1	TJ	18.0	L	6	a 60	1.0				YOS04
1999 09 04.81	a	M	10.6	AS	30	L	5	60	3	4			NEV
1999 09 05.04	x	S	9.6	TJ	15.6	L	5	36	3.4	3			BOU
1999 09 05.14		S	9.8	TJ	33	L	5	45	2.2	4			SHA02
1999 09 05.77		C	12.2	TJ	18.0	L	6	a 60	1.3				YOS04
1999 09 05.94	a	M	10.5	AS	30	L	5	60	3	3			NEV
1999 09 06.06		M	9.3	TT	35	L	5	92	3.1	2/			HOR02
1999 09 06.07		S	8.9	TI	5.0	B		7	3	3			KYS
1999 09 07.99		S	9.0:	TJ	10.5	L	10	50	2.7	2			SHA02
1999 09 08.08		M	9.0	TJ	7.0	R	7	24	4	3			GRA04
1999 09 08.10		S	9.6	TT	10.0	B		25	2.4	4			HAS02
1999 09 08.61		S	9.0	TJ	5.0	B		7	5	4			BIV
1999 09 08.77	xa	S	9.2	TJ	32.0	L	5	58	3.7	6			NAG08
1999 09 09.04		M	10.2	AS	30	L	5	60	3	3			NEV
1999 09 09.61		S	8.9	TJ	5.0	B		7	4	5			BIV
1999 09 09.95		S	8.5	HS	20	L	4	111	2	3			FOL
1999 09 09.99		S	9.7	TJ	10.5	L	10	50	2.6	3			SHA02
1999 09 10.09		M	8.5	TT	8.0	B		10	6	2			HOR02
1999 09 10.15		S	9.6	TJ	20.3	T	10	50	2.4	4/			KAM01
1999 09 10.61		S	9.0	TJ	5.0	B		7	4	5			BIV
1999 09 10.88		M	10.0	AS	30	L	5	60	3	2			NEV
1999 09 11.07		B	8.4	S	11.0	B		20	1.5	5			CHE03
1999 09 11.07		M	8.4	TT	8.0	B		10	6	2/			HOR02
1999 09 11.07		S	8.8	TJ	7.0	R	7	24	4.5	3			GRA04
1999 09 11.08		S	8.7	AC	6.3	R	13	52	6	3			KOS
1999 09 11.10	x	C	10.9	HV	20.3	T	6	a120	2.4				LIG
1999 09 11.61		S	9.1	TJ	5.0	B		7	4	4			BIV
1999 09 11.99		S	8.6	HS	10.0	B		20	4	5			KAR02
1999 09 12.01		B	8.6	S	11.0	B		20	1.5	5			CHE03
1999 09 12.05		S	9.3	TT	20.0	L	4	42	5	7			SCH04
1999 09 12.07		M	8.5	TT	5.0	B		10	6	2/			HOR02
1999 09 12.10		S	9.6	TJ	8.0	B		20	3.1	4			SHA02
1999 09 12.12	x	S	9.3	TJ	8.0	B		15	4	4			BOU
1999 09 12.14		S	9.3	TJ	20.3	T	10	50	2.2	4/			KAM01

Comet C/1999 J3 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 09 12.61		S	8.9	TJ	5.0	B		7	5	5			BIV
1999 09 12.84		S	8.5	AC	6.0	B		20	3	4			RES
1999 09 13.07		S	9.3	TT	10.0	B		25	6.3	4			HAS02
1999 09 13.09		S	8.5	AC	6.3	R	13	52	6	3			KOS
1999 09 13.10		M	9.1	TT	10	B		25	5	5			KUJ
1999 09 13.13		S	8.7	HV	20.3	T	10	50	3.7	5			KAM01
1999 09 13.58		S	8.4	TJ	5.0	B		7	4	6			BIV
1999 09 13.59		S	8.5	TJ	25.6	L	5	42	3	7			BIV
1999 09 13.84		S	8.4	AC	6.0	B		20	3	4			RES
1999 09 14.05		M	8.3	TT	8.0	B		10	6.5	3/			HOR02
1999 09 14.07		S	8.6	TJ	7.0	R	7	24	4.5	2/			GRA04
1999 09 14.09		S	8.3	AC	6.3	R	13	52	5	5			KOS
1999 09 14.18		S	8.5	TJ	10.0	B		14	4	4/			PER01
1999 09 15.03		S	8.2	AC	6.0	B		20	4	4/			RES
1999 09 15.03		S	9.3	HS	27	L	6	83	1.5	4			TOT03
1999 09 15.04		S	8.2	TT	5.0	B		10	6	2/			HOR02
1999 09 15.15		S	8.7	TJ	10.0	B		14	4	6			PER01
1999 09 16.06		S	8.5	AC	6.0	B		20	4	3			RES
1999 09 16.60		S	8.8	TJ	5.0	B		7	4	7			BIV
1999 09 16.60		S	8.9	TJ	25.6	L	5	42	4	6			BIV
1999 09 17.14		S	8.4	TJ	8.0	B		10	4.0	5			SHA02
1999 09 17.99	a	M	9.8	PA	25	L	4	64	2.5	3			SHU
1999 09 18.06		S	8.1	AC	6.0	B		20	4	4			RES
1999 09 18.16		S	8.7	TJ	10	B		14	2.9	5			SHA02
1999 09 18.98	a	M	9.5	PA	25	L	4	64	2.8	3			SHU
1999 09 19.02	a	M	8.9	PA	25	L	4	64	3	3			SHU
1999 09 19.04		S	8.2	HS	8.0	B		12	7	3			BAR06
1999 09 19.04		S	8.5	HS	11	L	7	50	6	3			BAR06
1999 09 19.77		C	10.5	TJ	18.0	L	6 a	30	3.0				YOS04
1999 09 19.96		S	8.2	HS	8.0	B		12	6	3			BAR06
1999 09 20.04	a	M	8.4	PA	25	L	4	64	2.5	3			SHU
1999 09 20.06		S	8.1	AC	6.0	B		20	5	4			RES
1999 09 20.81		C	10.7	TJ	18.0	L	6 a	30	3.2				YOS04
1999 09 21.09		S	7.9	AC	6.0	B		20	5	5			RES
1999 09 21.14		S	8.9	TT	8.0	R	5	13	4	7			GIL01
1999 09 21.15		S	8.8	TJ	10	B		14	3.3	5			SHA02
1999 09 22.09		S	7.9	AC	6.0	B		20	5	5/			RES
1999 09 22.10		B	8.0	HS	11	L	7	50	6	d3/			BAR06
1999 09 22.10		M	7.9	HS	8.0	B		12	7	d4			BAR06
1999 09 22.10		S	8.9	AC	30.5	T	10	78	& 4	5			COM
1999 09 22.11	x	M	8.5	TJ	8.0	B		15	5	4/			BOU
1999 09 22.12		S	8.3	HV	6.3	B		9	3.5	5			KAM01
1999 09 23.10		S	7.8	AC	6.3	R	13	52	4	4			KOS
1999 09 23.16		S	7.9	TJ	8.0	B		10	3.9	4			SHA02
1999 09 24.10		S	7.3	HD	6.0	B		20	8	4/	0.5	290	SAR02
1999 09 24.14		S	8.0	AA	15.0	R	8	30	4	6			DIE02
1999 09 24.16	&	S	8.0	HS	20.3	L	4	61	1.6	6	3 m	326	MOR09
1999 09 24.74		C	10.5	TJ	10.7	A	6 a	60	2.9				YOS04
1999 09 26.73		C	10.7	TJ	18.0	L	6 a	30	1.8				YOS04
1999 09 27.80		C	9.9	TJ	16.0	H	3 a	40	3.3				YOS04
1999 09 28.80		C	9.7	TJ	16.0	H	3 a	40	5.1		7.4m	294	YOS04
1999 09 29.10		M	7.7	TT	8.0	B		10	8	4			HOR02
1999 09 29.16		S	8.0	TJ	10.0	B		14	6	4/	0.3	290	PER01
1999 09 29.86	x	S	8.0:	TT	20	L	4	45	6.5	3			PEA
1999 09 30.04		S	8.5:	HS	5.0	B		10	3	1/			SAN07
1999 09 30.86	x	S	8.4	TT	20	L	4	45	6	4			PEA
1999 10 01.09		S	8.1	HS	11	L	7	50	5	3/			BAR06
1999 10 01.83		M	7.7	TT	12.5	L	6	23					TSU02
1999 10 01.86	x	S	8.4	TT	20	L	4	45	4	4			PEA
1999 10 02.07		M	7.9	TJ	7.0	R	7	24	5.5	3/			GRA04
1999 10 02.09		M	7.6	TT	8.0	B		10	8	3			HOR02
1999 10 02.83	x	S	8.3	TT	20	L	4	45	4.6	4			PEA
1999 10 03.85	x	S	8.4	TT	20	L	4	45	3.5	4			PEA
1999 10 04.05		S	7.8	HS	11	L	7	50	7	3			BAR06
1999 10 04.21		S	7.6	TJ	10.0	B		14	6	5			PER01

Comet C/1999 J3 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 10 04.22		S	7.6	TJ	3.4	B		9	& 6	5			PER01
1999 10 05.01		S	7.4	HS	11	L	7	50	8	3			BAR06
1999 10 05.15		S	7.9	TJ	5.0	B		10	8	5			ENT
1999 10 05.16		B	8.1	TJ	10	B		14	5.0	5			SHA02
1999 10 05.18		B	7.5	TJ	5.0	B		10	7.1	4			SHA02
1999 10 05.78	x	S	7.5	TJ	8.0	B		11	7	6			NAG08
1999 10 05.79	x	S	8.2	TT	10.0	B		20	4	4			YOS02
1999 10 06.02		S	8.0	AA	30	L	5	60	5	3			NEV
1999 10 06.11		S	7.5	AC	6.0	B		20	6	5			RES
1999 10 06.11	x	M	7.8	TJ	8.0	B		15	5.5	4/			BOU
1999 10 06.17		B	8.5	TJ	10	B		14	3.8	4			SHA02
1999 10 06.17		S	7.6	TJ	7.0	R	7	24	6	3/			GRA04
1999 10 06.17		S	8.4	TT	8.0	B		15	& 6	7			SCH04
1999 10 06.18		B	8.2	TJ	5.0	B		10	4.6	3			SHA02
1999 10 06.32		S	7.5	TJ	8.0	B		11	6	3			DES01
1999 10 07.06		S	7.7	TJ	7.0	R	7	24	6	3/			GRA04
1999 10 07.14		S	7.1	TI	5.0	B		7	9	3			KYS
1999 10 07.19		S	7.8	TJ	10.0	B		14	9	4/			PER01
1999 10 07.32		S	7.6	TJ	8.0	B		11	6	3			DES01
1999 10 08.06		B	8.1	TT	10.0	B		25	4.2	4			HAS02
1999 10 08.06		S	7.7	AC	5.0	B		10	5	3/			SAN07
1999 10 08.07		M	7.6	TT	8.0	B		10	7	3/			HOR02
1999 10 08.18		S	7.6	TJ	10.0	B		14	6.5	4/			PER01
1999 10 08.21		S	7.2	TJ	3.4	B		9	&14	3/			PER01
1999 10 08.73		M	7.9	AA	10.0	B		25	8	4			SEA
1999 10 08.77		C	9.4	TJ	18.0	L	6 a	30	3.4				YOS04
1999 10 08.77		M	7.8	AA	15.0	B		25	6	5			MIT
1999 10 08.80	x	S	6.9	TJ	8.0	B		11	6	6			NAG08
1999 10 09.06		S	7.8	HD	6.0	B		20	9	6			SAR02
1999 10 09.23		S	7.6	TJ	3.4	B		9	&11	4			PER01
1999 10 09.33		S	7.6	TJ	8.0	B		11	6	3			DES01
1999 10 09.75		S	7.6	TJ	25.4	T	6	32	10	6			YOS04
1999 10 09.84	x	S	8.1	TT	8.0	B		20	5.4	3			PEA
1999 10 09.84	x	S	8.2	TT	20	L	4	45	4.5	3			PEA
1999 10 10.09		S	7.5	HS	8.0	B		12	6	3			BAR06
1999 10 10.11		S	7.9	S	8.0	B		11	5	3			GON05
1999 10 10.32		S	7.7	TJ	8.0	B		11	7	3	0.25		DES01
1999 10 10.76		C	10.3	TJ	18.0	L	6 a	20	2.3				YOS04
1999 10 10.76		S	7.7	TJ	25.4	T	6	32	7	6			YOS04
1999 10 10.84	x	S	8.0	TT	8.0	B		20	5.6	3			PEA
1999 10 10.84	x	S	8.1	TT	20	L	4	45	4.5	4			PEA
1999 10 11.33		S	7.8	TJ	8.0	B		11	7	3	0.25		DES01
1999 10 11.70		M	7.8	HI	5.0	B		7	6	5			MAT08
1999 10 11.76	x	S	7.8	TJ	32.0	L	5	58	6	5			NAG08
1999 10 12.07		S	7.7	S	20.0	L	8	83	7	3			C0002
1999 10 12.10		S	7.5	AC	6.0	B		20	5	4			RES
1999 10 12.18		S	7.2	VB	5.0	B		10	7.8	5			SHA02
1999 10 12.18		S	8.2:	TT	5.0	B		10	6	5			GIL01
1999 10 12.33		S	7.9	TJ	8.0	B		11	8	3/	0.30		DES01
1999 10 12.80	x	S	7.6	TJ	10.0	B		20	6	5			NAG08
1999 10 13.09		S	7.4	HS	8.0	B		12	7	3			BAR06
1999 10 13.11		M	7.2	TT	8.0	B		10	11	4			HOR02
1999 10 13.11		S	7.6	AC	6.0	B		20	6	4/			RES
1999 10 13.14		S	7.1	TI	5.0	B		7	10	2			KYS
1999 10 13.18		S	7.4	VB	5.0	B		10	7.8	4			SHA02
1999 10 13.33		S	8.0	TJ	8.0	B		11	8	3	0.30		DES01
1999 10 13.69		M	7.8	HI	5.0	B		7	6	4			MAT08
1999 10 14.05		M	7.4	TT	8.0	B		10	8.5	3/			HOR02
1999 10 15.10		S	7.6	AC	6.0	B		20	9	3			RES
1999 10 15.13		M	7.3	TT	8.0	B		10	11	3/			HOR02
1999 10 15.18		S	7.4	HV	6.3	B		9	9	2			KAM01
1999 10 16.14		M	7.4	TT	8.0	B		10	9	4			HOR02
1999 10 16.16		S	8.0	TT	20.0	L	4	42	& 4	4			SCH04
1999 10 16.33		M	8.2	NP	5.0	B		10	10	2			CRE01
1999 10 16.84	x	S	7.9	TT	8.0	B		20	8.7	4			PEA

Comet C/1999 J3 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 10 17.01		S	7.5	AA	20.0	C	10	77	3.0	4			TUR
1999 10 17.02		S	7.5	AA	20.0	C	10	150	3.1	4			JON07
1999 10 17.13		M	7.2	TT	8.0	B		10	10	4			HOR02
1999 10 17.13		S	8.1	HI	6.0	B		20	7	3			SAR02
1999 10 17.16		S	7.7	TJ	8.0	B		15	7.5	4			BOU
1999 10 17.16		S	7.9	AA	15.0	R	8	30	4	6			DIE02
1999 10 17.17		S	7.8	TT	20.0	L	4	42	6	6			SCH04
1999 10 17.18		S	7.0	TJ	5.0	B		10	9.4	3			SHA02
1999 10 17.18		S	8.1	TJ	10	B		14	7.3	4			SHA02
1999 10 17.73		B	8.6	HS	20.0	L	4	40	5	3			OHM
1999 10 17.77		C	9.6	TJ	18.0	L	6 a	20	3.2				YOS04
1999 10 17.84	x	S	7.9	TT	8.0	B		20	6.8	4			PEA
1999 10 18.04		S	7.1	AA	20.0	C	10	150	3.7	5	0.5	250	JON07
1999 10 18.04		S	7.3	AA	20.0	C	10	77	3.8	4			TUR
1999 10 18.14		O[	7.0	TI	5.0	B		7	! 8				KYS
1999 10 18.17		S	8.1	TJ	6.3	B		9	4.5	2			KAM01
1999 10 18.19		S	8.2	TJ	10	B		14	7.2	3			SHA02
1999 10 18.82	x	M	7.9	TT	10.0	B		20	8	4			YOS02
1999 10 18.83	x	S	7.9	TT	8.0	B		20	8.4	4			PEA
1999 10 19.69		M	7.5	HI	5.0	B		7	7	4			MAT08
1999 10 19.83	x	S	7.8	TT	8.0	B		20	8	4			PEA
1999 10 20.11		S	7.2:	TT	8.0	B		10	7.5	4			HOR02
1999 10 20.65		M	7.7	AA	10.0	B		25					SEA
1999 10 20.73		M	7.4	HI	5.0	B		7	7	4			MAT08
1999 10 20.77		C	11.2	TJ	18.0	L	6 a	30	2.3				YOS04
1999 10 20.79	xa	S	8.0	TJ	10.0	B		20	5	4			NAG08
1999 10 20.79	w	S	8.0	AA	15.0	B		25	6	4			MIT
1999 10 20.80		M	8.2	TT	12.5	L	6	31	5.0	3			TSU02
1999 10 20.83	x	S	8.0	TT	8.0	B		20	7.4	3/			PEA
1999 10 21.83	x	S	8.1	TT	8.0	B		20	6.7	4			PEA
1999 10 22.80		C	10.5	TJ	18.0	L	6 a	20	1.7				YOS04
1999 10 22.83	x	S	8.1	TT	8.0	B		20	7	4			PEA
1999 10 27.44		S	7.8	AA	8.0	B		15					SEA
1999 10 27.65		M	8.5	HI	20	L	7	45	6	4			MAT08
1999 10 28.42		S	7.9	AA	8.0	B		15					SEA
1999 10 28.53		M	8.5	HI	20	L	7	45	6	5			MAT08
1999 10 31.56		M	8.8	HI	20	L	7	45	6	5			MAT08
1999 11 02.06	x	S	8.6	TJ	23.0	L	5	36	10	1			DES01

Comet C/1999 K2 (Ferris)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 08 08.01		S	15.0	HS	39	L	5	138	0.7	2			SAR02

Comet C/1999 K3 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 08 13.52		C[	18.5:	GA	60.0	Y	6	a240	! 0.3				NAK01
1999 08 13.99		S	14.3	NP	44.5	L	5	167	0.5	1			MAR02
1999 10 14.44		C[	18.0:	GA	60.0	Y	6	a120	! 0.3				NAK01

Comet C/1999 K5 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 08 13.92		S	14.2	NP	44.5	L	5	167	< 0.5	1			MAR02

Comet C/1999 K6 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 07 08.67		C	15.6:	TJ	18.0	L	6 a	60	0.35				YOS04
1999 07 19.91		S	14.5	HS	35	L	5	237	0.6	2			HOR02
1999 08 08.02		S[	14.0	HS	39	L	5	138	! 1				SAR02
1999 08 09.07		S	14.6:	HS	35	L	5	237	0.6	3			HOR02
1999 09 04.56		C	16.6	TJ	18.0	L	6 a	60	0.3				YOS04
1999 09 04.90		S	14.6	HS	40.0	L	5	200	0.5	2			BOU

Comet C/1999 K6 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 09 05.57		C	16.1	TJ	18.0	L	6	a 60	0.45				YOS04
1999 09 05.85		S[	14.5	HS	44.0	L	5	226					HAS02
1999 09 11.54		C	16.0	TJ	18.0	L	6	a 60	0.3				YOS04
1999 10 11.46		C	16.6	TJ	18.0	L	6	a 60	0.35				YOS04

Comet C/1999 K8 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 07 08.62		C	15.4:	TJ	18.0	L	6	a 60	0.35				YOS04
1999 07 18.90		S	14.2	HS	35	L	5	237	0.7	2/			HOR02
1999 07 19.90		S	14.2	HS	35	L	5	237	0.8	2/			HOR02
1999 08 01.87		S	14.3	HS	35	L	5	237	0.8	2/			HOR02
1999 08 04.89		S	14.0	HS	35	L	5	237	0.9	2/			HOR02
1999 08 08.89		S	14.0	HS	35	L	5	237	0.7	3			HOR02
1999 08 13.87		S	13.9	HS	35	L	5	237	0.8	2/			HOR02
1999 08 14.87		S	13.8	HS	35	L	5	237	0.8	2/			HOR02
1999 08 19.90		S	13.5	AC	25.0	L	6	100	0.5	2/			RES
1999 08 21.07		S	13.9	HS	35	L	5	237	0.7	2/			HOR02
1999 09 02.85		S	13.6	HS	35	L	5	237	1.1	2/			HOR02
1999 09 03.84		S	13.6	HS	35	L	5	208	1.1	2/			HOR02
1999 09 04.61		C	15.0	TJ	18.0	L	6	a 60	0.5				YOS04
1999 09 04.82		S	13.6	HS	35	L	5	208	1.1	3			HOR02
1999 09 04.93		S	14.3	HS	40.0	L	5	200	0.8	1			BOU
1999 09 05.60		C	15.0	TJ	18.0	L	6	a 60	0.35				YOS04
1999 09 05.81		S	13.7	HS	35	L	5	208	1.1	2/			HOR02
1999 09 07.91		I[	15.0	VB	30	R	20	300					SHA02
1999 09 09.85		S	13.7	HS	35	L	5	208	0.8	3			HOR02
1999 09 09.89		S[	13.8	VB	30	R	20	185					SHA02
1999 09 10.83		S	13.8	HS	35	L	5	208	0.9	3			HOR02
1999 09 11.53		C	15.3	TJ	18.0	L	6	a 60	0.6				YOS04
1999 09 11.82		O[	12.7:	HS	20	L	4	57	! 1				KYS
1999 09 11.83		S	13.8	HS	35	L	5	208	0.9	3			HOR02
1999 09 12.83		O	13.4:	HS	20	L	4	57	1.0	2			KYS
1999 09 12.83		S	13.8	HS	35	L	5	208	0.9	2/			HOR02
1999 09 14.02		S	13.8	HS	35	L	5	208	1.0	2/			HOR02
1999 09 14.82		S	13.7	HS	35	L	5	208	0.9	2/			HOR02
1999 09 15.82		S	13.7	HS	35	L	5	208	0.8	3			HOR02
1999 10 01.79		S	13.9	HS	44.0	L	5	226	0.5	3			HAS02
1999 10 01.86		S	13.9	HS	35	L	5	208	1.0	3			HOR02
1999 10 02.82		S	13.9	HS	35	L	5	166	1.0	3			HOR02
1999 10 02.93		S[	14.5	VB	30	R	20	185					SHA02
1999 10 03.51		C	14.6	GA	60.0	Y	6	a120	1.0				NAK01
1999 10 07.81		S[	13.2	HS	27	L	6	167					TOT03
1999 10 08.86		S	14.0	HS	39	L	5	126	0.8	3			SAR02
1999 10 10.47		C	14.7	TJ	18.0	L	6	a 60	0.65				YOS04
1999 10 10.79		S	13.8	HS	44.0	L	5	156	0.2	4			HAS02
1999 10 11.47		C	14.3	TJ	18.0	L	6	a 60	0.7				YOS04
1999 10 12.86		S	13.8	HS	35	L	5	166	1.1	3			HOR02
1999 10 13.77		S	13.7	HS	35	L	5	208	1.1	3			HOR02
1999 10 15.86		S	14.1	HS	35	L	5	208	1.2	2/			HOR02
1999 10 16.85		S	14.0	HS	35	L	5	208	1.1	2/			HOR02
1999 10 16.97		S	14.0	HS	40.0	L	5	133	0.7	3			BOU
1999 10 17.51		C	14.7	GA	60.0	Y	6	a120	0.95				NAK01
1999 10 30.88		I[	14.5	HS	30	R	20	230					SHA02

Comet C/1999 L2 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 06 30.59		C	15.8	TJ	18.0	L	6	a 60	0.35				YOS04

Comet C/1999 N2 (Lynn)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 07 20.71		S	7.5	S	10.6	L	8	50	3	4			GRE03
1999 07 20.71		S	7.9	S	10.6	L	8	50	5	2			PLO

Comet C/1999 N2 (Lynn) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 07 21.70		S	7.5	AA	63	L	5	100	6	5	0.03	135	BRO
1999 07 24.46		C	9.2	TJ	18.0	L	6	a 20	1.9		4.8m	122	YOS04
1999 07 24.70		S	7.5	AA	63	L	5	100	6	5	0.03	135	BRO
1999 07 28.84		M	8.0	TT	35	L	5	92	3	4			HOR02
1999 07 29.84		M	7.6	TT	35	L	5	92	3.5	3/			HOR02
1999 07 29.85		S	7.3	HS	27	L	6	83	2	3/			TOT03
1999 07 30.89	x	S	7.7	TJ	8.0	B		11	6	4/			DES01
1999 07 31.70		S	8.0	S	10.6	L	8	50	3	3			GRE03
1999 07 31.84		M	7.9	TT	35	L	5	92	3.8	4			HOR02
1999 08 01.85		M	7.2	TI	10	B		25	4	5			KUJ
1999 08 01.88	x	S	7.8	TJ	8.0	B		11	6	5			DES01
1999 08 02.07		S	7.6	TI	8.0	B		20	3	6			BOR
1999 08 02.26		B	7.8	TJ	5.0	B		7	8	5			BIV
1999 08 02.26		S	8.1	TJ	25.6	L	5	42	7	4	0.4	105	BIV
1999 08 02.35		S	8.1	AA	10.0	B		25					SEA
1999 08 02.86		S	7.8:	HV	20.3	T	10	50	& 2	4/			KAM01
1999 08 02.87		S	7.6	S	10	R	5	45	6	5			MAR02
1999 08 02.89	x	S	7.9	TJ	8.0	B		11	6	5			DES01
1999 08 03.28		S	7.7	TJ	5.0	B		7	7	5			BIV
1999 08 03.29		S	7.9	TJ	25.6	L	5	42	7	4	0.4	110	BIV
1999 08 03.36		B	8.1	AA	10.0	B		25	3	5			SEA
1999 08 03.36		B	8.1	AA	10.0	B		25	3	5			SEA
1999 08 03.86		S	7.9	HV	20.3	T	10	50	2.0	5			KAM01
1999 08 03.90	x	S	7.9	TJ	8.0	B		11	5	4/			DES01
1999 08 03.91		B	8.5	AA	14.3	L	6	35	1.5	5			AMO01
1999 08 04.07		S	7.9	TI	8.0	B		20	4	6			BOR
1999 08 04.36		S	7.8	AA	5.0	B		10					SEA
1999 08 04.36		S	7.8	AA	5.0	B		10					SEA
1999 08 04.89		S	8.0	AA	13.5	L	5	21	5	5			SOU01
1999 08 04.89	x	S	8.0	TJ	8.0	B		11	6	5			DES01
1999 08 05.71		S	7.5	S	20.0	L	8	83	2.6	5			COO02
1999 08 05.87		M	7.7	S	10	R	5	45	5	6			MAR02
1999 08 05.90		S	7.7	TJ	8.0	B		20	4.7	4			SHA02
1999 08 05.90	x	S	8.0	TJ	8.0	B		11	6	5			DES01
1999 08 06.47	xs	S	7.3:	TJ	10.0	B		20	& 5	6			NAG08
1999 08 06.84		S	7.8	TT	10.0	B		25	3.9	4			HAS02
1999 08 06.89	x	S	8.1	TJ	8.0	B		11	6	5			DES01
1999 08 06.90		S	8.2	AA	8.0	B		11	2	3			SOU01
1999 08 06.90	x	S	7.8	TJ	15.6	L	5	36	& 4	3			BOU
1999 08 06.91		S	8.1	AA	13.5	L	5	34	4	4/			SOU01
1999 08 07.48	xs	S	7.7	TJ	10.0	B		20	5	6			NAG08
1999 08 07.86		S	8.5	HV	20.3	T	10	50	1.5	6	0.10	90	KAM01
1999 08 08.47		S	7.9	TJ	25.4	T	6	32	4.3	7	8 m	120	YOS04
1999 08 08.83		M	8.2	TI	10	B		25	6	2			ZNO
1999 08 08.84		S	8.5	AA	10	L	10	80	4	5			SAN07
1999 08 08.85		S	7.8	TT	8.0	B		10	7.5	3			HOR02
1999 08 08.86		S	8.4	TI	6	R	12	32	5.5	7			SVE
1999 08 08.89	x	S	8.1	TJ	8.0	B		11	4	6			DES01
1999 08 08.92		B	8.5	AA	14.3	L	6	35	1	4			AMO01
1999 08 09.49	&	S	7.8	HS	15.0	B		25	3	5/			HAS08
1999 08 09.50	xs	S	8.2	TT	10.0	B		20	5	5			YOS02
1999 08 09.81		M	8.1	TT	10	B		25	7	4			HOR02
1999 08 09.81		S	8.5	HS	6.0	B		20	6	3	0.25		SAR02
1999 08 09.84		S	8.1	AA	5.0	B		10	6	3			SAN07
1999 08 09.89	x	S	8.2	TJ	8.0	B		11	4	5/			DES01
1999 08 10.07		S	8.2	TI	8.0	B		20	4.5	5/			BOR
1999 08 10.82		M	8.1	TT	10	B		25	7	4			HOR02
1999 08 10.88	x	S	8.5	TJ	8.0	B		11	3	5/			DES01
1999 08 10.91		S	8.5	HS	8.0	B		20	5.1	4			SHA02
1999 08 11.46	xs	S	8.0	TJ	10.0	B		20	5	6			NAG08
1999 08 11.90		S	7.9	TT	8.0	B		20	8.5	3			PEA
1999 08 12.90		S	8.0:	TT	8.0	B		20		2			PEA
1999 08 12.94		S	8.5:	TJ	20.3	T	10	80	2	3			GRA04
1999 08 13.79		S	8.8	AA	18	L	7	45	7	d4			ERO
1999 08 13.83		M	7.8	TT	8.0	B		10	6.5	4			HOR02

Comet C/1999 N2 (Lynn) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 08 13.88		M	7.6	S	7.0	B		10	4.5	4			MAR02
1999 08 13.88		M	8.0	S	7.0	B		10	2.5	4			SAN04
1999 08 13.91		S	8.6	TJ	20.3	T	10	80	1.8	4			GRA04
1999 08 14.81		S	8.1	HS	6.0	B		20	5	4/			SAR02
1999 08 14.83		E	8.7	AA	20	L	5	33	1.5	4	6 m	80	ROM
1999 08 14.83		S	7.9	TT	8.0	B		10	6	3/			HOR02
1999 08 14.89		M	7.7	S	7.0	B		10	5	5			MAR02
1999 08 14.89		M	8.0	S	7.0	B		10	3	3			SAN04
1999 08 14.89		S	7.8	TJ	8.0	B		20	4.7	4			SHA02
1999 08 14.91		S	8.5	TT	8.0	B		20	6	2			PEA
1999 08 15.48	xs	S	8.0	TT	10.0	B		20	4	5/			YOS02
1999 08 15.88		S	7.5	TJ	8.0	B		20	5.0	3			SHA02
1999 08 15.93		S	8.3:	TJ	8.0	B		20	2	2			CHE03
1999 08 16.34	s	M	8.4	SE	25	L	4	64	5	4			SHU
1999 08 16.49	x	S	8.3	TT	10.0	B		20	4	5/			YOS02
1999 08 16.86		M	7.9	S	10	R	5	27	4	4			MAR02
1999 08 16.88	x	S	8.9	TJ	25.4	J	6	58	3.0	3/			BOU
1999 08 16.89		E	8.8	AA	20	L	5	33	1	4	5 m	80	ROM
1999 08 16.89	x	S	8.7	TJ	8.0	B		11	3	3			DES01
1999 08 17.86		S	8.0	S	10	R	5	27	& 4	4			MAR02
1999 08 17.88	x	S	8.7	TJ	8.0	B		11	3	3/			DES01
1999 08 17.88	x	S	8.9	TJ	25.4	J	6	58	3.0	4			BOU
1999 08 18.46	xs	S	8.8	TJ	10.0	B		20	5	5/			NAG08
1999 08 18.78		S	9.2	AA	18	L	7	45	5	4			ERO
1999 08 18.83	x	C	10.8	HV	20.3	T	6 a	60	2.5				LIG
1999 08 18.90		S	8.1	TJ	8.0	B		20	4.7	3			SHA02
1999 08 19.83		E	8.8	AA	20	L	5	33	1	3	5 m	81	ROM
1999 08 19.83		M	8.3	TT	8.0	B		10	6.5	4			HOR02
1999 08 19.83		S	8.5	AC	6.0	B		20	3	4			RES
1999 08 19.83		S	8.7	TI	20	L	4	34	5.2	5			KYS
1999 08 20.29		S	8.7	TJ	25.6	L	5	42	6	4			BIV
1999 08 20.31		S	8.7:	TJ	5.0	B		7	5	5			BIV
1999 08 20.83		M	8.4:	TT	8.0	B		10	6.5	4			HOR02
1999 08 20.86		S	9.9	TT	30.0	L	5	60	& 2	3			SCH04
1999 08 20.87		S	9.1	TJ	33	L	5	45	1.9	3			SHA02
1999 08 21.25		S	8.6	TJ	5.0	B		7	5	5			BIV
1999 08 21.83		M	8.4	TT	8.0	B		10	6	4			HOR02
1999 08 21.87		S	9.9	TT	30.0	L	5	60	& 2	2			SCH04
1999 08 22.83		M	8.3	TT	8.0	B		10	6	3			HOR02
1999 08 23.85		E	9.0	AA	20	L	5	33	2	4			ROM
1999 08 25.83	x	R	11.2	HV	20.3	T	6 a	90	1.5				LIG
1999 08 25.86		S	8.5	AC	6.0	B		20	2.5	3/			RES
1999 08 26.87		I[	8.7	TJ	10	B		14					SHA02
1999 08 27.87		I[	9.2	TJ	10	B		14					SHA02
1999 08 29.25		S	9.4	TJ	25.6	L	5	42	5	4			BIV
1999 08 29.26		S	9.3	TJ	5.0	B		7	5	3			BIV
1999 08 29.45		S	8.6	S	15.0	R	5	25	5	3/			NAG02
1999 08 29.85		E	9.3	AA	20	L	5	33	1.5	3			ROM
1999 08 30.27		S	9.4	TJ	25.6	L	5	42	3	4			BIV
1999 08 30.84		S	9.7	TJ	20.3	T	10	50	2.0	3			KAM01
1999 08 30.86		S	9.6	TJ	20	R	14	40	2.1	3			SHA02
1999 08 30.87		S	9.5	TJ	20	R	14	70	2.6	2			SHA02
1999 08 31.25		S	9.3	TJ	5.0	B		7	4	3			BIV
1999 08 31.46		C	11.1	TJ	16.0	H	3 a	20	2.5				YOS04
1999 08 31.84	x	S	9.6	TJ	25.4	J	6	58	2.7	3			BOU
1999 09 01.06	a	S	9.1	NP	8.0	B		16	5	2			CRE01
1999 09 02.26		S	9.5	TJ	5.0	B		7	5	3			BIV
1999 09 02.82		M	9.4	TT	35	L	5	92	2.9	3			HOR02
1999 09 02.83		S	9.4	TJ	20.3	T	10	50	2.8	3			KAM01
1999 09 02.86	x	S	9.8	TJ	25.4	J	6	72	2.5	2/			BOU
1999 09 03.80		M	9.4	TT	35	L	5	92	3.1	3			HOR02
1999 09 03.80	a	M	10.0	NP	25	L	4	38	3	3			SHU
1999 09 03.84	x	S	9.8	TJ	25.4	J	6	58	3.0	3/			BOU
1999 09 04.79	a	M	10.1	NP	25	L	4	38	2	3			SHU
1999 09 04.80		M	9.6	TT	35	L	5	92	2.6	2/			HOR02

Comet C/1999 N2 (Lynn) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 09 04.80	a	M	11.5	AS	30	L	5	60	2.5	3			NEV
1999 09 04.83	x	S	9.9	TJ	15.6	L	5	36	2.8	3			BOU
1999 09 04.86		M	9.2	TI	10	R	5	27	5	4			MARO2
1999 09 05.78		E	10.0:	AA	20	L	5	33	1	3			ROM
1999 09 05.78	a	M	11.5	AS	30	L	5	60	2.5	2			NEV
1999 09 05.80		M	9.7	TT	35	L	5	92	3	2/			HORO2
1999 09 05.83		S	10.0	HS	44.5	L	5	100	2.1	4			KARO2
1999 09 05.83	x	S	9.9	TJ	25.4	J	6	58	2.6	3			BOU
1999 09 05.84		S	10.3	TT	44.0	L	5	63	1.6	2			HASO2
1999 09 06.79		S	10.0	AC	6.3	R	13	52	4	3			KOS
1999 09 07.85		S	10.4	TJ	33	L	5	45	2.8	3			SHAO2
1999 09 08.26		S	9.7	TJ	5.0	B		7	4	2			BIV
1999 09 08.83	x	S	10.1	TJ	25.4	J	6	58	3.0	2/			BOU
1999 09 08.86		S	11.0	HS	44.5	L	5	89	2.5	6			WARO1
1999 09 09.81		S	10.2	TT	35	L	5	92	2.4	2			HORO2
1999 09 09.84		S	10.1	TJ	33	L	5	45	3.8	3			SHAO2
1999 09 10.78	a	M	11.2	AS	30	L	5	60	2	1			NEV
1999 09 10.80		S	10.3	TT	35	L	5	92	2.5	2/			HORO2
1999 09 10.82		S	10.4	TT	44.0	L	5	100	1.7	3			HASO2
1999 09 11.44		C	13.0	TJ	18.0	L	6	a 30	0.6				YOSO4
1999 09 11.77		S	9.7	AC	6.3	R	13	52	5	3			KOS
1999 09 11.79		M	10.4	TT	35	L	5	92	2.5	2/			HORO2
1999 09 11.79		S	11.3	TI	20	L	4	57	3.0	2			KYS
1999 09 11.83	x	S	10.4	TJ	25.4	J	6	58	2.8	2/			BOU
1999 09 12.04		S	10.8:	TI	40.6	L		70	1.5	3			BOR
1999 09 12.60	x	C	12.6	HV	20.3	T	6	a120	1.5				LIG
1999 09 12.79		S	10.4	TT	35	L	5	92	2.5	2			HORO2
1999 09 12.80		S	10.2	AC	6.3	R	13	52	4	2			KOS
1999 09 12.80		S	11.6	TI	20	L	4	57	2.1	3			KYS
1999 09 13.24		S	10.3	TJ	25.6	L	5	42	3	2			BIV
1999 09 14.79		S	10.6	TT	35	L	5	92	2.5	2			HORO2
1999 09 15.24		S	10.6	TJ	25.6	L	5	42	2.5	3			BIV
1999 09 18.99	a	M	9.5	PA	25	L	4	64	2	2			SHU
1999 09 23.41		C	13.0	TJ	16.0	H	3	a 30	1.2				YOSO4
1999 09 29.81		S	11.5	HS	30	R	20	105	1.1	2			SHAO2
1999 09 29.81	x	S	11.4	TJ	25.4	J	6	88	1.6	2/			BOU
1999 10 01.76		S	11.8	TI	35	L	5	92	2	1/			HORO2
1999 10 02.78		S	11.9	TI	35	L	5	208	1.6	1/			HORO2
1999 10 02.79	x	S	11.6	TJ	25.4	J	6	72	1.8	1/			BOU
1999 10 05.80		S	11.9:	HS	33	L	5	100	1.3	3			SHAO2
1999 10 10.38		C	14.7	HS	18.0	L	6	a 30	0.65				YOSO4
1999 10 10.77		S	12.4	HS	44.0	L	5	100	1.3	3			HASO2
1999 10 11.38	l	C[	14.7	TJ	18.0	L	6	a 60					YOSO4
1999 10 13.75		S	11.5	TI	35	L	5	92	1.6	2			HORO2
1999 10 13.78		S	11.7	TJ	33	L	5	100	1.2	3			SHAO2
1999 10 15.81		S	11.7	HS	27	L	6	83	0.9				TOTO3
1999 10 29.75		S	12.0	HS	27	L	6	83	0.7				TOTO3
1999 10 31.74		S	13.2	HS	44.0	L	5	156	0.4	3			HASO2

Comet C/1999 N4 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 10 03.44		C	17.9	GA	60.0	Y	6	a240	0.3				NAKO1

Comet C/1999 S3 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 09 25.59		C	13.9	TJ	18.0	L	6	a 60	0.65				YOSO4
1999 09 26.68		C	13.5	TJ	18.0	L	6	a 60	0.6				YOSO4
1999 09 27.74		C	13.5	TJ	16.0	H	3	a 30	0.8				YOSO4
1999 09 27.88		M	12.6	HS	35	L	5	208	1.1	4			HORO2
1999 09 28.14	!	J	11.5	SC	25.4	T	5	a120	4.37	s5	1.9m	192	ROQ
1999 09 28.74		C	13.2	TJ	16.0	H	3	a 40	0.6	8	1.2m	190	YOSO4
1999 09 29.82		S	12.5	AC	25.4	J	6	100	1.5	2			BOU
1999 09 29.83		S[	12.5	HS	30	R	20	105					SHAO2

Comet C/1999 S3 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 10 01.79		S	12.7	HS	44.0	L	5	156	0.3	4			HAS02
1999 10 01.84		M	12.5	HS	35	L	5	92	1.2	5			HOR02
1999 10 02.60		C	13.2	TJ	18.0	L	6	a 30	0.65	8			YOS04
1999 10 02.77		M	12.5	HS	35	L	5	92	1.2	4			HOR02
1999 10 02.80		S	12.4:	HS	33	L	5	100	0.6	3			SHA02
1999 10 02.83		S	12.5	AC	25.4	J	6	100	1.3	3/			BOU
1999 10 02.90		S	13.6	VB	30	R	20	185	0.4	4			SHA02
1999 10 02.92		S	12.3	AC	30.5	T	10	150	& 1.5	5			COM
1999 10 03.55		C	13.1	GA	60.0	Y	6	a120	1.1		1.5m	185	NAK01
1999 10 03.93		S	14.0	VB	30	R	20	185	0.5	4			SHA02
1999 10 04.51	x	S	12.5	HS	25.4	L	4	113	0.8	5			YOS02
1999 10 04.81		S	12.8	VB	33	L	5	100	0.6	4			SHA02
1999 10 05.82		S	12.8:	VB	33	L	5	100	0.7	4			SHA02
1999 10 05.83		S	12.4	AC	30.5	T	10	150	& 1	4/			COM
1999 10 05.85		S	13.1:	VB	30	R	20	185	0.4	4			SHA02
1999 10 06.10		S	12.6	AC	25.4	J	6	100	1.2	3			BOU
1999 10 06.86		S	12.5	HS	27	L	6	83	0.5	5			TOT03
1999 10 08.67		C	13.1	TJ	18.0	L	6	a 30	0.7	8			YOS04
1999 10 08.80		M	12.7	HS	39	L	5	126	0.5	S6/			SAR02
1999 10 10.44		C	12.8	TJ	18.0	L	6	a 30	0.65	8			YOS04
1999 10 10.79		S	12.5	HS	44.0	L	5	156	0.2	5			HAS02
1999 10 11.49		C	13.0	TJ	18.0	L	6	a 30	0.5	8	0.8m	155	YOS04
1999 10 12.83		M	12.2	HS	35	L	5	166	1.1	5			HOR02
1999 10 13.78		M	12.0	HS	35	L	5	92	1.2	5			HOR02
1999 10 13.80		S	11.7	HS	33	L	5	100	0.9	3			SHA02
1999 10 13.82		S	13.0	VB	30	R	20	185	0.8	4			SHA02
1999 10 13.90		S	12.4	AC	25.4	J	6	100	1.2	3			BOU
1999 10 15.03		S	12.3	HS	25.3	L	6	58	1.2	4			PER01
1999 10 15.78		M	12.0	HS	35	L	5	92	1.2	4/			HOR02
1999 10 15.87		S	12.4	AC	25.4	J	6	100	1.2	3			BOU
1999 10 15.88		S	12.4	HS	27	L	6	83	0.8	3			TOT03
1999 10 16.83		M	11.6	TI	35	L	5	92	1.2	4/			HOR02
1999 10 16.91		S	12.4:	AC	30.5	L	5	120	1.5	6			GIL01
1999 10 16.99		M	12.4	HS	40.0	L	5	133	1.0	6	0.02	115	BOU
1999 10 17.53		C	12.8	GA	60.0	Y	6	a120	1.2		3.1m	138	NAK01
1999 10 17.68		C	13.0	TJ	18.0	L	6	a 30	0.7	8	1.5m	152	YOS04
1999 10 18.95		M	12.5	AC	25.4	J	6	150	1.1	4			BOU
1999 10 20.07		M	11.8	TI	35	L	5	92	1.2	4			HOR02
1999 10 20.68		C	12.5	TJ	18.0	L	6	a 30	0.5		2.6m	128	YOS04
1999 10 29.77		M	12.1	HS	27	L	6	83	1.2	s5			TOT03
1999 10 30.82		S	12.5	AC	25.4	J	6	100	0.9	4			BOU
1999 10 30.84		S	12.4	HS	33	L	5	75	1.0	5			SHA02
1999 10 30.85		S	12.3	HS	30	R	20	185	0.6	5			SHA02
1999 10 31.75		S	12.4	HS	44.0	L	5	156	0.4	4			HAS02
1999 10 31.92		M	12.5	GA	25.4	J	6	88	1.1	4/			BOU

Comet C/1999 S4 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 10 02.64		C	16.8	TJ	18.0	L	6	a 60	0.35				YOS04
1999 10 03.70		C	16.3	GA	60.0	Y	6	a240	0.5		0.6m	221	NAK01
1999 10 08.72		C	16.4	TJ	18.0	L	6	a 90	0.55				YOS04
1999 10 09.07		S[	14.2	HS	39	L	5	126	! 1				SAR02
1999 10 09.67		C	16.3	GA	60.0	Y	6	a240	0.35		0.5m	218	NAK01
1999 10 10.71		C	16.5	HS	18.0	L	6	a 90	0.35				YOS04
1999 10 17.02		S[	14.8	HS	40.0	L	5	270	! 0.5				BOU
1999 10 17.78		C	16.5	TJ	18.0	L	6	a 60	0.3				YOS04

Comet C/1999 T1 (McNaught-Hartley)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 10 17.63	a	C	15.6:	GA	60.0	Y	6	a120	0.5				NAK01
1999 10 20.62	1	C[	15.2	TJ	18.0	L	6	a 90					YOS04

Comet C/1999 T2 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 10 16.99		S	15.4	HS	40.0	L	5	270	0.2	5			BOU
1999 10 17.49		C	16.7	GA	60.0	Y	6	a120	0.3			100	NAK01
1999 10 17.66		C	15.6	TJ	18.0	L	6	a 60	0.35				YOS04
1999 10 18.03		J	15.1	SC	25.4	T	5	a100	0.73	s5/	?		ROQ
1999 10 18.66		C	16.4	TJ	18.0	L	6	a 60	0.35				YOS04
1999 10 20.66		C	16.0	TJ	18.0	L	6	a 60	0.3				YOS04

Comet C/1999 T3 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 11 01.14	!	J	15.7	SC	25.4	T	5	a100	0.34	d1			ROQ

Comet C/1999 U1 (Ferris)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 10 20.69		C	16.6	GA	60.0	Y	6	a240	0.5			200	NAK01
1999 10 20.73		C	16.7:	TJ	18.0	L	6	a 60	0.45				YOS04

Comet 2P/Encke

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 10 09.58		C	19.7	GA	60.0	Y	6	a240	0.20				NAK01

Comet 4P/Faye

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 12 07.08		I	[13.5:		41	L	4	183					HAL
1998 12 18.08		I	[13.5:		41	L	4	183					HAL
1998 12 19.08	!	S	14.0	NP	41	L	4	183	0.7	2/			HAL
1999 09 19.81		C	14.4	TJ	18.0	L	6	a 60	0.75				YOS04
1999 09 20.80		C	15.0	TJ	18.0	L	6	a 60	0.35				YOS04
1999 10 08.81		C	15.5:	TJ	18.0	L	6	a 60	0.5				YOS04
1999 10 20.81		C	16.2	TJ	18.0	L	6	a 60	0.35				YOS04

Comet 10P/Tempel 2

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 05 07.73		C	16.4	TJ	18.0	L	6	a 60		9			YOS04
1999 06 05.89		C	14.9	HS	20.3	T	6	a360	0.5			350	LIG
1999 06 07.94		S	12.6:	HS	10	L	10	60	1.5	0			SAN07
1999 06 09.87		C	14.6	HS	20.3	T	6	a360	0.5			350	LIG
1999 06 12.98		C	15.3	HS	21	L	4		0	9			NEV01
1999 06 16.01		C	15.4	HS	21	L	4		0	9			NEV01
1999 06 23.86	x	C	13.6	HV	20.3	T	6	a 60	0.5			300	LIG
1999 06 30.63		C	14.4	TJ	18.0	L	6	a 60		8/			YOS04
1999 07 02.87	x	C	13.8	HV	20.3	T	6	a 60	0.5			300	LIG
1999 07 04.84		S	11.8	CH	18	L	7	45	3	2			ERO
1999 07 04.86	x	C	13.5	HV	20.3	T	6	a 60	0.7			297	LIG
1999 07 04.91		S	10.0	AC	6.3	R	13	52	7	1			KOS
1999 07 04.99		C	14.1	HS	21	L	4		0	9			NEV01
1999 07 05.02		V	14.2	HS	21	L	4		0	9			NEV01
1999 07 05.95		S	10.0	AC	6.3	R	13	52	7	1			KOS
1999 07 06.87		S	11.5	CH	18	L	7	45	2.5	2			ERO
1999 07 06.92		S	11.3	HS	20	L	7	70	2	2			BAR06
1999 07 06.95		S	10.0	AC	6.3	R	13	52	7	1			KOS
1999 07 07.88		S	11.6	CH	18	L	7	45	3	2			ERO
1999 07 07.91		S	11.5	HS	20	L	7	70	2	3			BAR06
1999 07 08.10		S	12.0	AC	40.6	L		90	1.6	5			BOR
1999 07 08.87		E	11.9	CH	18	L	7	45	1.5	1			ERO
1999 07 10.86		S	11.7	CH	18	L	7	45	1.5	3			ERO
1999 07 10.92		S	11.5	HS	20	L	7	70	1.8	3			BAR06
1999 07 11.85		S	12.0	CH	18	L	7	45	1	1			ERO
1999 07 12.10		S	12.0	AC	40.6	L		90	1.8	4/			BOR
1999 07 12.86		E	11.6	CH	18	L	7	45	1.5	3			ERO
1999 07 12.86	x	C	13.4	HV	20.3	T	6	a 60	0.7			285	LIG

Comet 10P/Tempel 2 [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 07 12.92		S	11.3	HS	20	L	7	70	2.1	2			BAR06
1999 07 13.02		C	14.0	HS	21	L	4		0.3	7	0.1	300	NEV01
1999 07 13.86		S	11.7	CH	18	L	7	45	1.3	1			ERO
1999 07 14.10		S	11.5	AC	40.6	L		90	1.8	4			BOR
1999 07 15.00		C	14.0	HS	21	L	4		0.3	7	0.2	280	NEV01
1999 07 15.87	x	C	13.4	HV	20.3	T	6	a 90	0.7				LIG
1999 07 15.92		S	11.8	HS	27	L	6	83	1.5	3			TOT03
1999 07 17.86		S	9.7	AC	6.3	R	13	52	6	1			KOS
1999 07 17.89	xa	C	13.2	HV	20.3	T	6	a 90	0.7				LIG
1999 07 18.88		S	10.8	TT	35	L	5	92	2.5	2			HOR02
1999 07 19.88		S	10.8	TT	35	L	5	92	2.4	1/			HOR02
1999 07 23.51		S	11.3:	HS	25.6	L	5	42	2.5	4			BIV
1999 07 31.87		S	10.9	TT	35	L	5	92	2.3	2			HOR02
1999 08 02.08		S	10.6	TI	40.6	L		90	2.5	2			BOR
1999 08 02.33		S	10.5	TJ	25.6	L	5	42	3.5	2			BIV
1999 08 02.88		S	10.8	TT	20.3	T	10	93	0.8	3			HAS02
1999 08 03.11		S	10.5	TI	40.6	L		70	2.8	2			BOR
1999 08 03.11		S	10.6	TI	40.6	L		90	2.6	2			BOR
1999 08 03.35		S	10.5	TJ	25.6	L	5	42	4.0	3			BIV
1999 08 04.08		S	10.2	TI	40.6	L		70	2.8	2			BOR
1999 08 05.91		S	10.6	NP	32	L	5	125	1.75	2/			MAR02
1999 08 05.92		I[	12.5	HS	20	R	14	90					SHA02
1999 08 06.98	x	S	10.4	TJ	23.0	L	5	92	2	5			DES01
1999 08 07.48		M	10.3	TT	25	L	5	40	2.0	4			RAE
1999 08 08.48		S	11.3	HS	25.4	T	6	116	1.2	4			YOS04
1999 08 08.85	x	C	12.8	HV	20.3	T	6	a 90	1.0			315	LIG
1999 08 08.86		S	10.6	TT	35	L	5	92	2.5	1/			HOR02
1999 08 08.97	x	S	10.0	TJ	23.0	L	5	92	2	5			DES01
1999 08 09.36		M	9.5	TT	25	L	5	40	3.1	4			RAE
1999 08 09.97	x	S	9.8	TJ	23.0	L	5	92	2	4/			DES01
1999 08 10.08		S	8.9	TI	8.0	B		20	5	5			BOR
1999 08 10.08		S	9.3	TI	40.6	L		70	3	5/			BOR
1999 08 10.93		S	8.8	TJ	10	B		14	3.6	2			SHA02
1999 08 10.94	x	S	9.2	TT	10.0	B		14	5.5	2			PEA
1999 08 10.98	x	S	9.7	TJ	23.0	L	5	67	2.5	5			DES01
1999 08 11.01		S	9.2	AA	14.3	L	6	35	2	2			AMO01
1999 08 11.93		S	8.7	AC	6.0	B		20	3	2/			RES
1999 08 13.34		M	9.2	TT	25	L	5	40	3.3	6			RAE
1999 08 13.85		S	8.8	AC	6.0	B		20	3.5	3			RES
1999 08 13.86		S	10.5	TT	35	L	5	92	2.8	2			HOR02
1999 08 13.86	x	C	11.7	HV	20.3	T	6	a 90	2.5			310	LIG
1999 08 13.91		S	9.6	NP	44.5	L	5	165	2.5	3			SAN04
1999 08 13.91		S	10.1	NP	44.5	L	5	165	4	3/			MAR02
1999 08 14.90		S	9.9	TJ	20	R	14	40	2.9	1			SHA02
1999 08 14.90		S	10.4	TT	20.0	R	14	40	2.5	1			PEA
1999 08 14.94		S	10.0	NP	44.5	L	5	165	2.5	4			SAN04
1999 08 14.94		S	10.3	NP	44.5	L	5	165	2	5	0.05	330	MAR02
1999 08 15.09		S	10.0	AA	14.3	L	6	35	1	2			AMO01
1999 08 15.89		S	9.1	TJ	20	R	14	40	2.7	1			SHA02
1999 08 16.52	x	S	10.4	TT	25.4	L	4	46	5.2	4			YOS02
1999 08 16.98	x	S	10.1	TJ	23.0	L	5	67	3	5			DES01
1999 08 17.98	x	S	10.2	TJ	23.0	L	5	67	3	4/			DES01
1999 08 19.88	&	S	9.0	AC	25.0	L	6	100	3	2			RES
1999 08 22.56		S	9.2	TT	8.0	B		20	5.5	1			PEA
1999 08 25.82	x	R	11.3	HV	20.3	T	6	a 90	1.5			315	LIG
1999 08 27.86		I[	8.9	TJ	10	B		14					SHA02
1999 08 29.26		S	9.7	TJ	25.6	L	5	42	3.5	4			BIV
1999 08 29.52		S	9.6	TT	20	L	4	45	3.5	3			PEA
1999 08 29.75		S	9.8	AC	20.0	L	8	83	3	2			CO002
1999 08 30.05		S	10.0	TI	40.6	L		70	2.5	2			BOR
1999 08 30.25		S	10.0	TJ	25.6	L	5	42	3.5	4			BIV
1999 08 30.52		S	9.7	TT	20	L	4	45	3.3	2			PEA
1999 08 30.80		S	10.0:	HS	20	L	5	70	2.5	3			BAR06
1999 08 31.26		S	9.7	TJ	5.0	B		7	5	4			BIV
1999 08 31.53		S	9.8	TT	20	L	4	45	4.3	2			PEA

Comet 10P/Tempel 2 [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 09 03.13	!	J	11.2	SC	25.4	T	5	a 60	2.70	s5			ROQ
1999 09 03.31		S	9.5	TJ	5.0	B		7	4	4			BIV
1999 09 03.32		S	10.0	TT	11	L	4	30	6	2			RAE
1999 09 03.79		S	10.5	HS	20	L	5	70	2.5	1/			BAR06
1999 09 04.49	x	S	10.5	TT	10.0	B		37	3	4			YOS02
1999 09 04.83	x	S	9.4	TJ	15.6	L	5	45	3	1/			BOU
1999 09 04.84		S	9.5:	TT	35	L	5	92	2	2			HOR02
1999 09 04.91		S	10.3	TI	10	R	5	77	2	2			MAR02
1999 09 05.47		C	13.1	TJ	18.0	L	6	a 60	0.3				YOS04
1999 09 05.83		O	10.0:	TI	20	L	4	57	2.5	5			KYS
1999 09 05.83		S	9.4	TT	10.0	B		25	2.0	3			HAS02
1999 09 06.17	!	J	11.8	SC	25.4	T	5	a 60	1.82	s5			ROQ
1999 09 06.46		S	10.3	TI	20	L	7	45	3	3			MAT08
1999 09 06.60		S	11.1	TT	41	L	4	90	1.0	4			PEA
1999 09 07.60		S	10.8	TT	41	L	4	90	2.0	3			PEA
1999 09 08.28		S	10.0	TJ	5.0	B		7	4	3			BIV
1999 09 08.58		S	11.1	TT	41	L	4	90	1.2	2			PEA
1999 09 11.29		S	9.5:	TJ	5.0	B		7	3	2			BIV
1999 09 11.79		S	10.1	TI	20	L	4	57	2.5	3			KYS
1999 09 11.87		S	10.2	TT	35	L	5	92	1.6	1/			HOR02
1999 09 12.04		S	9.9	TI	40.6	L		70	2.5	2			BOR
1999 09 12.08		M	10.8	NP	32.0	L	5	53	5	3			CRE01
1999 09 12.30		S	9.9	TJ	5.0	B		7	3	2			BIV
1999 09 12.53		S	10.6	TT	41	L	4	90	2.0	2/			PEA
1999 09 13.31		S	9.9	TJ	25.6	L	5	42	3.5	3			BIV
1999 09 13.55		S	10.5	TI	20	L	7	45	2.5	3			MAT08
1999 09 15.33		S	9.4	TJ	25.6	L	5	42	4.0	2			BIV
1999 09 15.52		S	10.3	TT	41	L	4	90	2.1	2			PEA
1999 09 17.55	x	S	11.0	TT	41	L	4	90	1.2	2			PEA
1999 09 28.45	x	S	10.1	TT	25.4	L	4	46	3.2	3			YOS02
1999 09 29.34		S	10.2	TT	25	L	4	40	2	2/			RAE
1999 09 29.53	x	S	10.8	TT	41	L	4	90	2.0	3			PEA
1999 09 30.74		S	9.7	AC	6.3	R	13	52	8	1			KOS
1999 10 01.35		S	10.4	TT	25	L	5	40	2	3/			RAE
1999 10 01.58	x	S	10.6	TT	41	L	4	90	2.0	2/			PEA
1999 10 02.52	x	S	10.6	TT	41	L	4	90	2.2	3			PEA
1999 10 02.61		S	12.5	HS	63	L	5	63	2.5	1			BRO
1999 10 03.51	x	S	10.7	TT	41	L	4	90	2.3	2			PEA
1999 10 03.60		S	12.5	HS	63	L	5	63	2.5	0/			BRO
1999 10 04.46		S	10.1	TI	20	L	7	45	3.5	4			MAT08
1999 10 04.47	x	S	10.6	TT	25.4	L	4	46	3.4	4			YOS02
1999 10 04.57	x	S	10.8	TT	41	L	4	90	1.8	2			PEA
1999 10 07.46		S	10.5	TI	20	L	7	45	3	4			MAT08
1999 10 08.73		S	10.0	AC	20.0	L	8	83	4	2			COO02
1999 10 09.62	x	S	10.8	TT	41	L	4	90	2.2	2/			PEA
1999 10 10.58	x	S	10.9	TT	41	L	4	90	2.3	3			PEA
1999 10 10.76		S	10.1	AC	20.0	L	8	83		1			COO02
1999 10 10.78		S	10.7	HS	10.0	B		25	3.6	2			HAS02
1999 10 11.09	!	J	10.9	SC	25.4	T	5	a100	3.95	s3			ROQ
1999 10 11.42		C	13.2	TJ	18.0	L	6	a 60	0.4		1.0m	315	YOS04
1999 10 13.52		S	10.7	TI	20	L	7	45	3	3			MAT08
1999 10 26.51	x	S	11.3	TT	41	L	4	90	1.5	2			PEA
1999 10 27.46		S	10.7	TI	20	L	7	45	3	4			MAT08
1999 10 28.50		S	11.2	TI	20	L	7	45	2	3			MAT08
1999 11 01.99	x	S	10.8	TJ	23.0	L	5	67	4	3/			DES01

Comet 21P/Giacobini-Zinner

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 07 13.20		S	13.1:	NP	41	L	4	183	1.5				HAL
1998 07 14.19		S	13.2	NP	41	L	4	183	1.5				HAL
1998 07 20.22		S	13.3	AC	41	L	4	183	1.5				HAL
1998 08 14.20		M	12.9	AC	41	L	4	72	1.5				HAL
1998 08 16.16		M	12.9	AC	41	L	4	72	1.5				HAL
1998 08 23.16		M	12.5	AC	41	L	4	72	1.5				HAL

Comet 21P/Giacobini-Zinner [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 08 24.20		S	12.5	AC	30	T	10	117	1.5				HAL
1998 09 12.14		M	11.2	AC	41	L	4	72	2.5				HAL
1998 09 20.13		M	10.9	AC	41	L	4	72	3				HAL
1998 09 25.12		M	10.8	AC	41	L	4	72	3				HAL
1998 10 09.11		M	10.3	PI	41	L	4	72	3		5 m	35	HAL
1998 10 10.10		M	10.3	PI	41	L	4	72	3		10 m	35	HAL
1998 10 17.12		S	9.8	PI	7.0	B		10	3				HAL
1998 10 25.12		S	9.4	PI	7.0	B		10	3				HAL
1998 11 07.08		S	9.4	NP	7.0	B		10	3				HAL
1998 11 16.09		S	9.4	NP	7.0	B		10	3				HAL
1998 12 06.07		S	9.8:	NP	41	L	4	72	2				HAL
1998 12 09.08		M	9.9	NP	41	L	4	72	3		5 m	30	HAL
1998 12 17.10		M	10.1	NP	41	L	4	72	3				HAL

Comet 29P/Schwassmann-Wachmann 1

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 07 17.16		I	[13.0:		41	L	4	183					HAL
1998 12 27.53		I	[13.0:		41	L	4	183					HAL
1999 09 06.45		S	[13.0	HS	20	L	7	158					MAT08

Comet 37P/Forbes

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 06 21.72		C	13.1	TJ	18.0	L	6	a 60	0.55		1.0m	234	YOS04
1999 07 07.73		C	14.0:	TJ	16.0	H	3	a 30	0.65				YOS04
1999 07 08.70		C	14.0	TJ	18.0	L	6	a 60	0.6		2.5m	247	YOS04
1999 07 14.99		S	12.3:	HS	20	L	7	70	1.5	2			BAR06
1999 07 19.02		S	12.7:	HS	35	L	5	158	1.6	2/			HOR02
1999 07 20.04		S	12.4	HS	35	L	5	158	1.5	2			HOR02
1999 07 23.53		S	13.1	HS	25.6	L	5	84	1.3	2			BIV
1999 08 08.03		S	13.2	HS	39	L	5	138	2	3/			SAR02
1999 08 08.94	x	C	14.6	HV	20.3	T	6	a 90	0.5		& 2.0m	240	LIG
1999 08 09.06		S	13.0	HS	35	L	5	237	1.8	1/			HOR02
1999 08 13.35	!	J	15.4	SC	25.4	T	5	a 60	0.58	s3	4.7m	244	ROQ
1999 08 14.01		S	12.9	NP	45	L	5	167	1	0			MAR02
1999 08 14.09		S	12.3	HS	35	L	5	158	2.1	2/			HOR02
1999 08 14.99		S	13.5	HS	27	L	6	83	0.5				TOT03
1999 08 17.69		C	14.0:	TJ	16.0	H	3	a 30	1.2				YOS04
1999 08 18.73		C	14.8	TJ	18.0	L	6	a 60	0.45		1.7m	239	YOS04
1999 08 19.54		S	13.5	HS	25.6	L	5	84	1.0	2			BIV
1999 08 19.91		S	12.8	AC	25.0	L	6	100	1.5	2			RES
1999 08 21.06		S	13.2	HS	35	L	5	158	2.1	2/			HOR02
1999 08 21.80		S	13.6	VN	41	L	4	200	0.8	2			PEA
1999 08 22.83		S	13.7	VN	41	L	4	200	0.9	2			PEA
1999 08 23.05		O	12.6	HS	20	L	4	57	1.5	2			KYS
1999 08 23.05		S	12.9	HS	35	L	5	158	2.1	2/			HOR02
1999 08 24.08		S	13.2	HS	25.4	J	6	115	1.3	1			BOU
1999 08 25.09		S	13.0	HS	35	L	5	158	2.0	2/			HOR02
1999 09 02.21	!	J	13.4	SC	25.4	T	5	a 60	0.94	s3	3.9m	234	ROQ
1999 09 02.85		S	13.2	HS	35	L	5	237	1.4	2			HOR02
1999 09 03.85		S	13.1	HS	35	L	5	208	1.8	1/			HOR02
1999 09 04.67		C	15.4	TJ	18.0	L	6	a 60	0.5				YOS04
1999 09 04.84		S	13.2	HS	35	L	5	208	1.9	1/			HOR02
1999 09 04.86		S	13.5	VN	41	L	4	200	0.8	2			PEA
1999 09 04.95		S	13.7	HS	40.0	L	5	133	1.0	0/			BOU
1999 09 05.61		C	15.4	TJ	18.0	L	6	a 60	0.45				YOS04
1999 09 05.84		S	13.2	HS	35	L	5	208	1.6	2			HOR02
1999 09 05.87		S	13.1	HS	44.0	L	5	156	0.6	4			HAS02
1999 09 07.94		S	13.9:	VB	30	R	20	300	0.6	2			SHA02
1999 09 08.89		S	14.0:	HS	44.5	L	5	218	0.7	1			WAR01
1999 09 09.85		S	13.5	VN	41	L	4	200	1.0	2			PEA
1999 09 09.95		S	13.7	VB	30	R	20	230	0.6	3			SHA02
1999 09 10.06		S	13.5	HS	35	L	5	208	1.5	1/			HOR02
1999 09 10.85		S	13.2	HS	44.0	L	5	156	0.3	4			HAS02

Comet 37P/Forbes [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 09 10.88	x	C	15.0	HV	20.3	T	6	a120	1.0		& 3.0m	230	LIG
1999 09 11.02		I	14.5:	HS	38	L	4	183	0.5				WAR01
1999 09 11.08		S	13.5	HS	35	L	5	208	1.6	1/			HOR02
1999 09 11.85		S	13.4	HS	35	L	5	208	1.6	1/			HOR02
1999 09 12.71		C	15.3	GA	60.0	Y	6	a120	0.75				NAK01
1999 09 12.84		S	13.4	HS	35	L	5	208	1.6	1/			HOR02
1999 09 14.03		S	13.4	HS	35	L	5	208	1.4	2			HOR02
1999 09 14.83		S	13.5	HS	35	L	5	208	1.5	1/			HOR02
1999 09 15.84		S	13.4	HS	35	L	5	208	1.7	1			HOR02
1999 09 17.13		S	14.1:	HS	30	R	20	185	0.9	3			SHA02
1999 09 30.16		J	12.3	SC	25.4	T	5	a120	3.02	s6	1.1m	228	ROQ
1999 10 01.83		S	13.9	HS	35	L	5	166	1.4	1/			HOR02
1999 10 01.85	x	C	14.9	HV	20.3	T	6	a120	1.0				LIG
1999 10 01.85	x	C	14.9	HV	20.3	T	6	a120	1.0				LIG
1999 10 02.61		C	15.5	TJ	18.0	L	6	a 60	0.65				YOS04
1999 10 02.82		S	13.8	HS	35	L	5	166	1.7	2			HOR02
1999 10 02.95		S	13.5:	HS	30	R	20	185	0.9	2			SHA02
1999 10 03.59		C	14.9	GA	60.0	Y	6	a240	1.2		2.2m	230	NAK01
1999 10 04.60		C	15.0	GA	60.0	Y	6	a240	1.2		2.1m	232	NAK01
1999 10 07.79	x	C	15.8	HV	20.3	T	6	a 90	0.5				LIG
1999 10 08.69		C	16.6	TJ	18.0	L	6	a 60	0.4				YOS04
1999 10 08.89		S[	14.0	HS	39	L	5	126	! 1				SAR02
1999 10 10.79		S	14.3	HS	44.0	L	5	156	0.4	3			HAS02
1999 10 11.51		C	17.0	HS	18.0	L	6	a 60	0.5				YOS04
1999 10 12.85		S	13.8	HS	35	L	5	166	1.6	1			HOR02
1999 10 15.87		S	14.0	HS	35	L	5	208	1.5	1			HOR02
1999 10 16.84		S	14.0	HS	35	L	5	208	1.6	1			HOR02
1999 10 28.08		J	15.6	SC	25.4	T	5	a100	1.87	s3/			ROQ

Comet 46P/Wirtanen

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1997 03 10.70		M	10.6	PA	15	M	11	48	3	2			SHU

Comet 50P/Arend

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 09 04.74	1	C[	16.1	TJ	18.0	L	6	a 60					YOS04
1999 09 11.12		J	16.5	SC	25.4	T	5	a120	0.50	s3	1.1m	272	ROQ
1999 09 20.78		C	16.9	TJ	18.0	L	6	a 60	0.35				YOS04
1999 10 03.73		C	16.9	GA	60.0	Y	6	a240	0.35			285	NAK01
1999 10 09.12		S	14.5:	HS	39	L	5	126	1	2			SAR02
1999 10 17.06		S	14.7	HS	40.0	L	5	200	0.6	2			BOU
1999 10 20.77		C	17.0	GA	60.0	Y	6	a240	0.45		0.8m	283	NAK01

Comet 52P/Harrington-Abell

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 07 29.43		S	12.8:	NP	41	L	4	183	0.8	4			HAL
1998 08 06.47		S	12.5:	NP	41	L	4	183	1				HAL
1998 08 19.45		M	12.9	NP	41	L	4	183	1.0				HAL
1998 08 25.46		S	12.6	NP	41	L	4	72	1				HAL
1998 09 19.43		S	13.1	NP	41	L	4	183	1				HAL
1998 09 26.43		S	12.8	NP	41	L	4	72	1.5	3/			HAL
1998 10 02.49		S	12.8	NP	41	L	4	183	1.5	3/			HAL
1998 10 15.35		S	12.8	NP	41	L	4	72	1.5				HAL
1998 10 26.42		S	12.8	NP	41	L	4	72	1				HAL
1998 11 01.50		S	12.7	NP	41	L	4	72	1				HAL
1998 11 14.31		M	12.8	NP	41	L	4	72	1				HAL
1998 11 24.28		M	12.6	NP	41	L	4	72	1.5				HAL
1998 12 14.27		M	12.2	NP	41	L	4	72	1.5				HAL
1998 12 23.22		M	12.4:	NP	41	L	4	183	1.5				HAL
1999 01 08.85		S	11.0	HS	27	L	6	83	1.5	3/			TOT03
1999 01 14.00		S	11.0	HS	27	L	6	83	1.5	4			TOT03
1999 02 04.85		S	11.5	HS	27	L	6	83	1.5	2			TOT03

Comet 52P/Harrington-Abell [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 02 12.87		C	11.7	HS	20.3	T	6	a360	3.5			278	LIG
1999 02 17.90		S	12.0	HS	27	L	6	83	1	0			TOT03
1999 02 18.82		C	11.8	HS	20.3	T	6	a360	2.7			281	LIG
1999 03 13.94		C	13.0	HS	20.3	T	6	a360	2.4			301	LIG
1999 03 19.31		C	13.1	HS	20.3	T	6	a480	2.0			302	LIG
1999 04 06.81		C	14.1	HS	20.3	T	6	a360	0.8				LIG

Comet 59P/Kearns-Kwee

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 09 11.11		S	14.1	HS	35	L	5	208	0.8	2			HOR02
1999 10 13.08		S	13.8	HS	35	L	5	166	1.0	2/			HOR02
1999 10 16.11		S	14.3	HS	35	L	5	208	1.0	3			HOR02
1999 10 17.10		S	14.3	HS	40.0	L	5	200	0.8	3			BOU
1999 10 17.15		S	14.3	HS	35	L	5	208	0.9	3			HOR02
1999 10 17.74		C	16.8	TJ	18.0	L	6	a 90	0.5				YOS04
1999 10 20.09		S	14.3	HS	35	L	5	208	1.2	2/			HOR02
1999 10 20.80		C	16.7	GA	60.0	Y	6	a240	0.65		1.9m	284	NAK01

Comet 74P/Smirnova-Chernykh

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 10 20.81		C	17.3	GA	60.0	Y	6	a240	0.35		1.1m	277	NAK01

Comet 84P/Giclas

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 09 12.75		C	17.4	GA	60.0	Y	6	a240	0.3			260	NAK01
1999 10 03.72		C	16.6	GA	60.0	Y	6	a240	0.35		0.9m	261	NAK01
1999 10 09.11		S[	14.0	HS	39	L	5	126	! 1				SAR02
1999 10 10.75		C	17.1	HS	18.0	L	6	a 60	0.3				YOS04
1999 10 16.07		S	13.8	HS	35	L	5	208	1.2	2/			HOR02
1999 10 16.44		J	16.7	SC	25.4	T	5	a100	0.38	s5	1.8m	273	ROQ
1999 10 17.09		S	14.8	HS	40.0	L	5	200	0.5	1/			BOU
1999 10 17.10		S	13.7	HS	35	L	5	208	1.2	2			HOR02
1999 10 20.08		S	13.8	HS	35	L	5	208	1.1	2			HOR02
1999 10 20.74		C	16.4	GA	60.0	Y	6	a240	0.45		1.1m	267	NAK01

Comet 88P/Howell

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 07 15.48		S	13.1	NP	41	L	4	72	2	2/			HAL
1998 08 15.15	!	S	12.2	AC	41	L	4	72	2	3/			HAL
1998 08 23.14	!	S	12.2	AC	41	L	4	72	2				HAL
1998 09 13.11	!	S	10.5	AC	41	L	4	72	3				HAL
1998 09 20.11	!	M	10.5	AC	41	L	4	72	3				HAL
1998 09 25.10	!	M	10.4	AC	41	L	4	72	4	3/			HAL
1998 10 09.09	!	M	10.5	AC	41	L	4	72	4				HAL
1998 10 17.09	!	M	10.4	PI	41	L	4	72	3				HAL
1998 11 08.08	!	M	11.2	NP	41	L	4	72	3				HAL
1998 11 17.07		S	11.1	NP	41	L	4	72	3				HAL
1998 12 09.07		S	11.3	NP	41	L	4	72	3	2/			HAL
1998 12 18.07		S	11.4	NP	41	L	4	72	3	1			HAL

Comet 93P/Lovas 1

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 08 29.41		I[	14.0:		41	L	4	183					HAL
1998 09 22.40		I[	13.5:		41	L	4	183					HAL
1998 09 26.47		S	13.9	NP	41	L	4	183	0.6	2/			HAL
1998 10 02.48		S	13.8	NP	41	L	4	183	0.7	2/			HAL
1998 10 15.32		S	13.7	NP	41	L	4	183	1				HAL
1998 10 26.44		S	13.5	NP	41	L	4	183	1				HAL
1998 11 02.50		S	13.3	NP	41	L	4	183	1				HAL
1998 11 14.27		S	13.3	NP	41	L	4	72	1	3			HAL

Comet 93P/Lovas 1 [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 11 24.25		S	13.2	NP	41	L	4	183	1				HAL
1998 12 14.23		S	13.1	NP	41	L	4	183	1				HAL
1998 12 21.29		S	13.1	NP	41	L	4	183	1				HAL

Comet 106P/Schuster

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 10 06.18	!	J	12.7	SC	25.4	T	5	a100	1.56	s3	0.8m	335	ROQ
1999 10 11.56		S	[13	GA	25.4	L	4	71					SEA
1999 10 13.55		S	13.5:	HS	20	L	7	158	0.5	4			MAT08
1999 10 14.56		S	13.3	GA	25.4	L	4	71					SEA
1999 10 17.57	a	C	13.9	GA	60.0	Y	6	a120	0.9		2.5m	18	NAK01
1999 10 20.60		C	12.9	TJ	18.0	L	6	a 60	0.65		1.6m	17	YOS04
1999 10 26.52		S	[12.5	VN	41	L	4	200	! 0.5				PEA
1999 10 27.48		S	13.3:	HS	20	L	7	158	0.8	4			MAT08
1999 10 28.49		S	13.5:	HS	20	L	7	158	0.8	3			MAT08
1999 10 30.14	!	J	11.4	SC	25.4	T	5	a100	2.55	s5/	1.3m	42	ROQ

Comet 114P/Wiseman-Skiff

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 10 02.84		S	14.7	HS	35	L	5	166	0.7	2/			HOR02
1999 10 03.69		C	17.4	GA	60.0	Y	6	a240	0.3			225	NAK01
1999 10 09.65		C	17.1	GA	60.0	Y	6	a240	0.3		0.8m	223	NAK01
1999 10 10.73		C	17.1	TJ	18.0	L	6	a 60	< 0.3				YOS04
1999 10 13.10		S	14.5:	HS	35	L	5	166	0.7	2/			HOR02
1999 10 17.03		S	14.6	HS	40.0	L	5	200	0.5	1			BOU

Comet 136P/Mueller 3

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 09 17.48		c	21.0	FA	91.4	L	5						SC001
1999 09 17.50		C	18.7	FA	91.4	L	5		0.25		1.2m	260	SC001

Comet 137P/Shoemaker-Levy 2

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 09 10.83		S	[14.5	HS	44.0	L	5	156					HAS02

Comet 141P/Machholz 2

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 10 26.50		S	[12.5	VN	41	L	4	200	! 0.5				PEA
1999 10 31.74		S	13.8	HS	44.0	L	5	156	0.5	3			HAS02

Comet 141P/Machholz 2 (Component A)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 10 31.73		S	[12.2	HS	27	L	6	83					TOT03

Comet 142P/Ge-Wang

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 10 04.68		C	19.1	GA	60.0	Y	6	a240	0.23				NAK01

Comet P/1998 G1 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 10 17.50		I	[12.5:		41	L	4	183					HAL
1998 10 28.50		I	[13 :		41	L	4	183					HAL
1998 10 29.50		I	[13.5:		41	L	4	183					HAL
1998 11 16.50		I	[13.5:		41	L	4	183					HAL
1998 11 26.48		I	[13.0:		41	L	4	183					HAL

Comet P/1998 QP54 (LONEOS-Tucker)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 09 19.32		S	14.3	NP	41	L	4	183	0.5				HAL
1998 09 22.23		S	14.3	NP	41	L	4	183	0.5				HAL
1998 09 23.29		S	14.3	NP	41	L	4	183	0.5				HAL
1998 09 24.22		S	14.3	NP	41	L	4	183	0.5				HAL
1998 10 11.15		S	14.2	NP	41	L	4	183	0.5				HAL
1998 10 12.16		S	14.2	NP	41	L	4	183	0.5				HAL

Comet P/1998 S1 (LINEAR-Mueller)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 10 24.28		S	13.8:	NP	41	L	4	183	0.5				HAL
1998 10 27.28		S	14.0	NP	41	L	4	183	0.5				HAL
1999 10 20.82		C	18.8	GA	60.0	Y	6	a240	0.25				NAK01

Comet P/1998 U2 (Mueller)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 10 28.30		I	[14.0:		41	L	4	183					HAL

Comet P/1998 U3 (Jäger)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 10 26.42		S	12.3	NP	41	L	4	72	2				HAL
1998 11 01.49		S	12.4:	NP	41	L	4	183	2				HAL
1998 11 14.29		M	12.7	NP	41	L	4	72	1	7			HAL
1998 11 24.27		M	12.3	NP	41	L	4	72	2				HAL
1998 12 14.25		M	11.7	NP	41	L	4	72	2				HAL
1998 12 23.21		M	11.6	NP	41	L	4	72	2	6/			HAL
1999 01 05.82		S	10.7	HS	27	L	6	83	2	3			TOT03
1999 01 14.02		S	10.6	HS	27	L	6	83	1.5	4			TOT03
1999 02 04.83		S	11.0	HS	27	L	6	83	1.5	3			TOT03
1999 02 12.89		C	11.5	HS	20.3	T	6	a360	4.9			289	LIG
1999 02 17.70		S	11.3	AA	63	L	5	240	1.7	7			BRO
1999 02 17.90		S	11.9	HS	27	L	6	83	0.8	5			TOT03
1999 02 18.84		C	10.9	HS	20.3	T	6	a360	2.9			299	LIG
1999 03 11.74		S	11.3	HS	10	L	10	60	0.7	2			SAN07
1999 03 11.82		S	12.0	HS	27	L	6	83	0.8	2			TOT03
1999 03 12.84		S	11.0:	HS	10	L	10	60	0.8	1/			SAN07
1999 03 13.92		C	11.8	HS	20.3	T	6	a360	2.4			310	LIG
1999 03 19.79		C	11.6	HS	20.3	T	6	a480	1.9				LIG
1999 04 05.87		S	12.5	HS	27	L	6	83	0.5	3/			TOT03
1999 04 06.05		S	11.1	AC	40.6	L		70	2.0	1			BOR
1999 04 06.79		C	12.5	HS	20.3	T	6	a360	1.5				LIG
1999 04 13.07		S	11.1	AC	40.6	L		70	2.1	0			BOR
1999 05 04.84		S	12.1	HS	20	L	5	70	1.8	2			BAR06
1999 05 08.15		J	13.3	SC	25.4	T	5	a 60	1.26	s5	1.7m	96	ROQ
1999 05 09.85		C	13.9	HS	20.3	T	6	a360	1.0				LIG

Comet P/1998 W1 (Spahr)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 12 16.20		S	13.8	NP	41	L	4	183	1	3			HAL
1998 12 21.21		S	13.8	NP	41	L	4	183	1				HAL

Comet P/1998 Y1 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1998 12 25.28		I	[14.0:		41	L	4	183					HAL
1998 12 26.28		I	[14.0:		41	L	4	183					HAL

Comet P/1999 R02 (LONEOS)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 10 03.63	a	C	18.7:	GA	60.0	Y	6	a240	0.25				NAK01
1999 10 09.69	a	C	18.6	GA	60.0	Y	6	a240	0.21				NAK01