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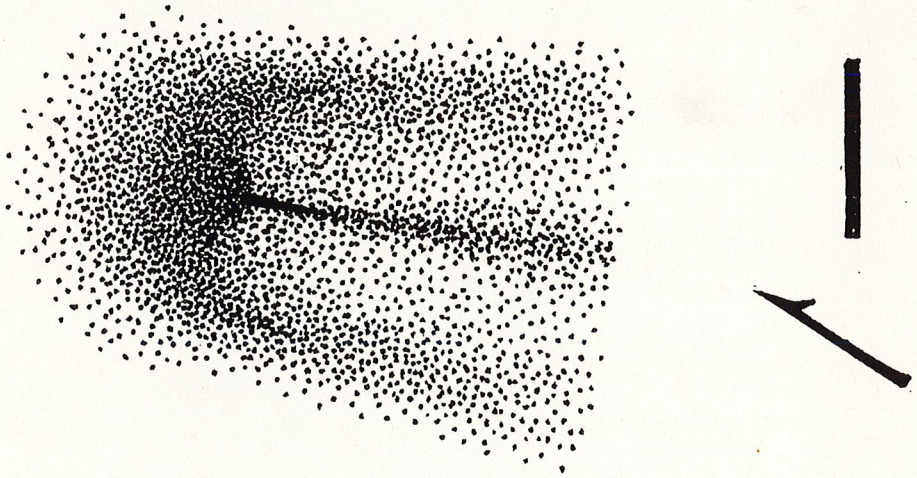

Drawing of comet C/1996 B2 (Hyakutake) by John E. Bortle of Stormville, New York, on 1996 March 26.19 UT, as seen with a 41-cm reflector. The arrow points north, and the solid bar denotes a length of ~ 15′ for scale.

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*.

The regular (invoiced) subscription rate is US$31.00 per year for surface-mail delivery (price includes the annual *Comet Handbook*; the price without the *Handbook* is US$23.00 per year). Subscribers who do not wish to be billed may subscribe at the special rate of US$23.00 per year for surface-mail delivery (rate is $15.00 without *Handbook*). Add $15.00/year to each of these rates for airmail delivery outside of the United States or for first-class delivery within the U.S. [The last set of digits (after the hyphen) on the top line of the mailing address label gives the Whole Number that signifies the last *ICQ* issue which will be sent under the current subscription status. An asterisk after these numbers indicates credit for the next annual Comet Handbook.] Make checks or money orders payable in U.S. funds (and drawn on a U.S. bank) to *International Comet Quarterly* and send to Daniel Green; Smithsonian Astrophysical Observatory; 60 Garden St.; Cambridge, MA 02138, U.S.A.

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Cometary observations also 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 (GREEN@CFA.HARVARD.EDU), or via floppy disks that can be read on an IBM PC], and should contact the Editor for further information.

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ANTONIN MRKOS (1918-1996)

We have received word that Antonín Mrkos, discoverer of 13 comets (including four of short-period) and one of the most prolific cometary astrometrists of the last two decades, died on May 29 in Prague. A more complete obituary will be published in the October issue.

SECOND INTERNATIONAL WORKSHOP ON COMETARY ASTRONOMY

As announced at the first International Workshop on Cometary Astronomy (IWCA) in Italy in 1994, the second IWCA will be held in Cambridge, England, just after the total solar eclipse of 1999 August 11 (Wednesday). One of the goals of this second IWCA will be to bring together in one place as many comet discoverers as possible, resulting in a unique meeting. We hope to draw a large number of comet discoverers and other comet observers to this meeting by holding it in connection with the total solar eclipse (duration about 2 minutes) that crosses central Europe on 1999 August 11. The meeting will be held over three days, from August 14 to 16 (Saturday to Monday), thereby allowing two travel days between eclipse day and the first day of the IWCA. By announcing the meeting years in advance, we also hope to draw an unusually large and valuable attendance.

The second IWCA is sponsored by the *International Comet Quarterly*, with the local hosts being the Comet Section of the British Astronomical Association and the Institute of Astronomy, Cambridge. The head of the local organizing committee is Jonathan Shanklin. Further announcements will be made in the *ICQ* as more information becomes available.

Φ Φ Φ

1997 COMET HANDBOOK: A Report

The *ICQ*'s *1997 Comet Handbook* is being mailed with this issue of the *ICQ* to the vast majority of *ICQ* subscribers who opt to receive the annual *Handbook*. *ICQ* subscribers who did not ask for the *1997 Comet Handbook* in advance may now purchase it for $8.00 postpaid; non-subscribers may purchase it for $15.00 postpaid. This eleventh edition of the *Comet Handbook* includes orbital elements and ephemerides — for both equinoxes 1950.0 and 2000.0 — for 4 long-period comets [including an ephemeris for C/1995 O1 (Hale-Bopp) spanning 1996 July to 1998 Feb.] and 50 short-period comets predicted to be visible in 1997 with instruments of aperture 1 or 2 meters (and smaller).

A paper in preparation will discuss further the derivation of magnitude parameters for the comets included (and excluded) in the annual *Handbook*, and that paper will include parameters currently in use for short-period comets for the preparation of the *Handbook*. We are frequently asked why such a maintained list is not published, and the reasons are numerous and complex; at the present time, even for the short-period comets, I do not feel that each comet has had sufficient (uniform) attention to warrant issuance of the entire list. The biggest issue is that only in the past 5-10 years have comets been observed fairly well photometrically when they are fainter than mag 12 or 13, and this growing mass of qualitative data must be assessed anew each year — even for comets that have been observed for many decades (or even centuries). Prior to the last decade, "nuclear" magnitude parameters may have been more dependable than "total" magnitudes of short-period comets, but — thanks to the improvement in photometric measurement due to the ready available of dependable CCDs — this situation has reversed. Another big issue is the problem that — while most short-period comets behave similarly (in terms of brightness) from apparition to apparition — a significant fraction of the periodic comets vary in both "absolute" brightness and in the rate (with respect to heliocentric distance and perihelion) in which a comet brightens or fades. A prime example of a problem case is that of 73P/Schwassmann-Wachmann 3, which split into at least three pieces of similar brightness on approach to perihelion in 1995 (*cf. IAUC* 6301), evidently causing a significant extended outburst in brightness; how this splitting will affect the comet's brightness at its next return to perihelion (at the turn of the century) is extremely difficult to predict!

Having produced the *ICQ Comet Handbook* annually for a full decade now, a more detailed explanation of the magnitude-parameter derivation is perhaps long overdue. This report, then, serves to give some preliminary information (awaiting the full list of parameters with the more detailed paper mentioned above). Each year when the *Handbook* is being prepared, all comets observed in the previous year are analyzed in term of their brightness behavior, and together with geometrical placement in the sky, comets are selected or rejected for the following year's *Handbook*. Generally, long-period comets known at the time of compilation (in the spring of each year preceding the year of the *Handbook*) that are predicted to be brighter than total visual mag (m_1) 18 or 19, and short-period comets predicted to be brighter than $m_1 \sim 21$ or 22, are selected for inclusion. Records are kept of the m_1 and m_2 ("nuclear") parameters according to the power-law formula [$\text{mag} = H + 5 \log \Delta + 2.5n \log r$, where H is the so-called absolute magnitude (at $\Delta = r = 1$ AU), and Δ and r are the comet's geocentric and heliocentric distances, respectively]. (Due to the low accuracy of the available photometric data, such additional factors as phase angle are generally ignored.)

"Nuclear" magnitudes of comets

Leland Cunningham, Elizabeth Roemer, and Brian G. Marsden were the primary people responsible for promoting so-called "nuclear" magnitudes of a comet's generally-central condensation (as distinguished from "total" magnitudes of a comet's visible coma) as predictions in ephemerides. N. T. Bobrovnikoff (1951)* noted that this m_2 is "mostly a function of the instrumental equipment employed", that "the larger the telescope and the higher the magnification, the smaller the nucleus appears to be". This simple fact can be seen visually with amateur instrumentation, by looking at a comet in a single observing session with varying apertures, *f*/-ratios, and magnifications; one peers "deeper" into the inner coma via increasing aperture or focal length, separating out some of the gas and dust that make a larger nuclear condensation visible at smaller apertures, smaller *f*/-ratios, and smaller magnifications. A perusal of the observations of comet C/1996 B2 (Hyakutake) in the April 1996 issue of the *ICQ* will yield some estimates of the central condensation of that comet when it was closest to the earth, illustrating the problem vividly: mag $\sim$ 3.5 to the naked eye, $\sim$ 5 in small binoculars, $\sim$ 7.5-8.0 in a 20-cm reflector.

Even with large apertures when comets are fainter, one cannot rule out the significant contribution of inner-coma gas and dust to the brightness of the "central condensation". Simply observing an r^{-2} variation among m_2 data does not assure one of a true nuclear magnitude; note that for weeks prior to perihelion, the total visual magnitudes of the infamous binocular comet C/1989 X1 (Austin) followed an r^{-2} power law! David Jewitt (1991)‡ has discussed the conditions necessary for verification of detection of a comet's true nucleus, and the detailed observations necessary for such verification are rarely employed by observers reporting m_2 data. Indeed, most m_2 data are by-products of astrometric observations, and such observations are made by usually only a few observers with a variety of instruments observing with a variety of spectral sensititivies and exposure times. As Bobrovnikoff (*op.cit.*) observed a half-century ago, "only seldom can observations on the nucleus made by several observers be significantly compared", noting that Bobrovnikoff means "nuclear condensation" when he writes "nucleus".

When I worked with Brian Marsden and Syuichi Nakano to the prepare the first *ICQ Comet Handbook* (the 1987 edition), I began with an internal (unpublished) list that Marsden had constructed and was using for selecting short-period comets that have ephemerides published in the *Minor Planet Circulars* (*MPC*s). Marsden's list included H and n parameters for both m_1 and m_2 predictions for each short-period comet. The basis for Marsden's list, deriving from his close collaboration with Roemer over the years, was his set of m_2 magnitude parameters that came from carefully-measured m_2 data by Roemer from her photographic astrometric plates of comets over a period of decades (ending in the mid-1970s). Roemer's data were internally very consistent, as she developed and maintained standard procedures for measuring these m_2 values — a process that including taking plates of Selected Areas (which are regions that contain comparison stars with known magnitudes) on the same nights that comets were photographed.

Using that *MPC* list as my starting point, I began revising the H and n parameters — mostly for m_1 — as I prepared the *Comet Handbook* once each year. While little change was made in the m_2 parameters for the first few years, other than the obvious addition of newly-discovered short-period comets, this has begun to slowly change — almost solely as a result of the m_2 measurements made in the past decade by Jim Scotti at the University of Arizona, who has consulted widely with Roemer (also at Tucson) on his procedure. The big difference is that Scotti uses an unfiltered CCD instead of photographic plates, so that his magnitudes are probably considerably redward of Roemer's earlier data. As nobody else (besides Roemer and Scotti) has put in the effort to determine m_2 with a consistent system of observation for many comets over many years — and given the inherent problems noted above with differing instrumentation, exposure time, and spectral sensitivity/bandwidth — it is perhaps unwise to spend much time on the few m_2 data obtained by other observers (other than to show inconsistencies between the data sets). Yet, carefully-obtained m_2 estimates in a uniform system, as Scotti has been attempting to collect with the Spacewatch program at Kitt Peak, may yield important information on the sizes and activity levels of comets. Because of this, and because m_1 values will ultimately reduce to m_2 values as a comet gets far from the sun, the collection of m_2 data and the production of m_2 predictions in ephemerides will continue.

As Jewitt (*op.cit.*) notes, there is only a handful or so of comets for which proper steps have been taken to determine a true nuclear magnitude. Even taking this set of half-dozen nuclear-magnitude parameters, one does not get something that is identical to m_2 parameters derived from either Roemer or Scotti measurements. So the situation regarding m_2 data (and m_2 parameters for future predictions and ephemerides) is a difficult one. As noted below, m_1 parameters are derived by the undersigned to represent as best as possible a very wide range in heliocentric distance, r. When comets are far from the sun, it is reasonable to assume that on average (after allowing for such factors as phase effect and rotation of a non-uniform nucleus) the brightness of the nucleus should vary as r^{-2}, and as the coma becomes more and more tenuous with increasing r, we should see $n \rightarrow 2$. Clearly, most sets of m_1 parameters — which tend to have $n > 4$ for short-period comets — will break down as a comet nears $m_1 \sim 21$, signifying a nearing of the point where a true nuclear magnitude is reached.

Occasionally it is found (especially for newly-discovered comets) that no m_2 data are available at all. A general policy is such cases is to determine a set of m_1 parameters, and then subtract 5 or 10 units from $2.5n$ and add 3-4 magnitudes to H, in order to derive preliminary m_2 parameters for use in ephemerides. This policy is derived by observing trends in comets for which better data are available, and it is used only as a very rough guide to observers. The reason for retaining m_2 predictions in the ephemerides is that some observers may find this value more useful for estimating whether or not

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* in *Astrophysics: A Topical Symposium*, ed. by J. A. Hynek (New York: McGraw-Hill), p. 329. See also the discussion on m_1 *vs.* m_2 by D. W. E. Green, T. L. Rokoske, and C. S. Morris (1986), in *Proceedings of the 20th ESLAB Symposium on the Exploration of Halley's Comet*, ed. by B. Battrick *et al.*, European Space Agency SP-250 (Noordwijk, The Netherlands: ESA Publications Division, ESTEC), III, 249.

‡ in *Comets in the Post-Halley Era*, ed. by R. L. Newburn *et al.* (Dordrecht: Kluwer Academic Publ.), pp. 25*ff*.

one should attempt observing a very faint comet, in that m_1 predictions may be more problematical when a comet is fainter than mag 20 or 21. Regarding long-period comets, for the purposes of inclusion in the *ICQ Comet Handbook*, there is little that one can do regarding m_2 data, as we have decided that — since very few individuals observe such comets once they are fainter than total visual mag 18 or 19 — we will not provide ephemerides to as faint a limit as we do for short-period comets.

"Total" magnitudes of comets

The m_1 parameters are derived by the undersigned to represent as best as possible a very wide range in heliocentric distance, r. When there are significant problems with this procedure in representing the available m_1 data, it is generally (but not always) found that two adequate sets of H and n can be found to represent pre- and post-perihelion brightness data. As noted above, I started with Marsden's *MPC* list of power-law parameters for short-period comets, both for m_2 and m_1 data. Marsden had invested much more time on his list of m_2 parameters, and the m_1 parameters needed a lot of work — particularly because Marsden's m_1 parameters were largely based on the older photographic data that were oftentimes mere "eyeball guesses" in terms of total magnitudes, often made by astrometrists who expressed little concern for measuring the comet's brightness.

I began, then, working on the m_1 parameters, with the idea of connecting the vast amount of visual photometry that I was collecting via the *ICQ* with the lower-quality photometry in the astrometric records — the aim being to produce parameters whereby ephemerides could be produced that would give reasonable m_1 values from magnitude 20 to peak brightess, despite the remarks by some that such a goal was impossible or unreasonable. I was encouraged to find parameters that did fairly well represent the brightness of most short-period comets over long arcs of observation, although (a) some comets definitely required different pre- and post-perihelion sets of parameters; (b) some comets will exhibit different brightness behavior from one apparition to the next; and (c) some — like 2P/Encke and 6P/d'Arrest — do not readily conform to power-law parameters.

The key problem in deriving power-law parameters now is in mixing the CCD photometry obtained when comets are fainter than mag 13 or 14 with the more uniform visual photometry obtained when comets are brighter. Near the "cross point", which is around mag 14 (the point at which visual observers generally stop because of difficulty in seeing fainter objects easily, and also the point at which CCD photometrists seem to begin having problems because the coma is getting too large), it seems that total CCD magnitudes (particularly unfiltered ones) are generally 1-3 magnitudes fainter than the total visual magnitudes made by experienced observers; as V CCD magnitudes by observers such as Herman Mikuž tend to be close to the unfiltered CCD magnitudes (rather than being close to the m_v measurements) for comets around the "cross point", there may be a general problem with the manner in which CCD magnitudes are derived (via "canned" software packages that may not subtract the background properly; use of GSC comparison stars by some CCD observers; etc.). And some CCD photometrists tend to (but do not always) produce fainter results than other CCD photometrists. My tentative solution, then, has been generally to treat CCD magnitudes as $\sim$ 1 mag too faint (with respect to visual magnitudes) on average, though I tend to treat CCD m_1 magnitudes as 2-3 mag too faint around the "cross point", decreasing to $\sim$ 1 mag too faint around mag 16-17 (and oftentimes even less around mag 20). This suggests a lack of precision, but in practice over the past 10 years, I have found my method for deriving parameters (which is via the procedure I described in the October 1995 *ICQ*, pp. 169*ff*) to be fairly good in producing magnitude predictions in the ephemerides of the annual *Comet Handbook*. I feel that real problems would arise from the use of "blind" computer programs (utilizing such methods as least squares and personal-equation corrections), because there are no standard observer corrections over many nights and many comets and rigid computer derivation of magnitude parameters would involve many complicated algorithms to properly assess the data over both long and short arcs of observation.

Long-period comets usually do not have the benefit of having extensive photometric data at large r (when the comet was faint), due to discovery circumstances; their outbound predicted brightnesses will be necessarily more uncertain than the predicted brightnesses for the average short-period comet that has been observed at numerous returns to perihelion. Many long-period comets drop off rapidly in post-perihelion brightness, while others remain bright for a long time (see my article in the October 1995 *ICQ*, p. 168; interested readers might also look at Karen Meech's 1991 review article, and references therein, in *Comets in the Post-Halley Era*, **1**, 629). As noted in the section under "nuclear" magnitudes, above, we have decided that there is not great reason to include long-period comets in the *ICQ Comet Handbook* for predicted magnitudes fainter than 18 or 19. — *D. W. E. Green*

Φ Φ Φ Φ Φ

CORRIGENDA

In the April 1996 issue, pp. 57*ff*, the new designation TRI01 was accidentally given to the same observer as TRI (i.e., Josep Ma Trigo Rodriguez = Josep Maria Trigo, TRI = TRI01). We will henceforth only use code TRI, but code TRI01 will not be re-assigned.

In the April 1996 issue, p. 84, the observation on `1996 04 06.12` by `ADA03` should have the magnitude method listed as "B" (not "G").

In the April 1996 issue, p. 87, observation on `1996 04 14.90` by SKI, change the m_1 from 2.4 to 2.3

In the April 1996 issue, p. 94, the observation of 67P by SCO01 is to be deleted.

In the April 1996 issue, p. 99, the two observations of 122P by SCO01 on 1996 Jan. 21.53 are to be deleted.

THE LIGHT CURVE OF COMET 45P/HONDA-MRKOS-PAJDUŠÁKOVÁ

G. Antonio Milani

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Abstract. *The light curve of comet 45P/Honda-Mrkos-Pajdušáková has been analyzed for the 1969, 1974/75, 1985, and 1990 apparitions, and it is found to be particularly regular and well traced for the 1990 apparition, when the comet reached its maximum brightness ~ 6 days after perihelion. Some data suggest that perhaps it had a little flare (~ 0.8 mag.) 12-13 days after perihelion. The average photometric parameters are $H_o = 13.9, n = 9.0$. The data for the previous apparitions are scarce but show that the behavior of the light curves was slightly divergent from 1990. In particular, in 1985 the comet was unusually bright long before perihelion.*

Comet 45P/Honda-Mrkos-Pajdušáková was discovered visually in December 1948 as a diffuse object of mag 9 by three active comet hunters. The first to locate the comet was Minora Honda (Kurashiki, Okayama, Japan), who spotted the comet on 1948 December 3 while searching for new comets. The second and third sightings of the comet came from Ludmilla Pajdušáková and Antonin Mrkos at Skalnate Pleso Observatory (in East Slovakia), who independently discovered the comet [Kronk 1984; Belyaev *et al.* 1986]. Comet 45P is among the short-period comets with the shortest orbital periods (at present, 5.27 yr) and smallest perihelion distances (q = 0.532 AU) [Marsden 1996]; it is likely not to be a big comet and it was forced generally into the present orbit by a close approach to Jupiter in August 1935 [Kronk 1984; Belyaev *et al.* 1986]. Including its discovery apparition, the comet has been observed at nine returns to perihelion [Marsden 1996] and the 1995-1996 return was particularly interesting because of a relatively close approach to the earth in early 1996 (Δ = 0.16 AU). The following analysis of the light curve is based on the data recorded in the *ICQ* archive during the 1969, 1974, 1984, and 1990 apparitions. *[Ed. note: This paper was originally received in April 1995, written in anticipation of its recent return to perihelion; time delays due to referee reports, revision of the text, and editorial contraints all contributed to the delay in publishing this paper. We have decided to publish the paper as is, rather than causing more delays via re-analysis of data including the 1995-1996 data. In addition, the ICQ archive contains about a dozen observations by Max Beyer from the 1954 apparition of 45P — observations that were added directly to the computer archive from his tabulated data in the* A.N.*]*

All of the data used in this analysis are visual magnitude estimates and were obtained from the *International Comet Quarterly* [Vol. **10-14** for the 1969 apparition (7 estimates); Vol. **2** and **14** for the 1974/75 apparition (42 estimates); Vol. **7** for the 1985 apparition (4 estimates); Vol. **12-13** for the 1990 apparition (103 estimates)]. All of available data were used except for the estimates concerning negative observations (comet not observed, but the observer reports an estimate of his/her limit of detection). The names of the observers, their identifying *ICQ* codes, and the number of observations for each apparition are reported in Table I; only three observers (Bortle, Morris, Pearce) observed the comet for more than one apparition. The small number of estimates provided by each observer (on average, 2.6 estimates/observer) did not allow a precise correction for systematic personal errors. Furthermore, no corrections were applied to the data for the instrument used, as — in the few cases where simultaneous magnitude estimates (made with different instruments by the same observer) are available — there is very little or no difference between the data. Given the average mean scattering of the points in the light curve, there is no advantage in trying to correct such a negligable instrumental effect.

Among the four apparitions examined, only the 1990 apparition allows one to draw a fairly-well-defined light curve. On the other hand, the data of the three other apparitions give interesting information about noticeable irregularities in the past behavior of the light curve. In the 1969, 1985, and 1990 apparitions, the comet was too close to the sun after perihelion and could not be observed, while in 1974 it was hardly visible after perihelion for the observers in the northern hemisphere. None of the four southern-hemisphere observers listed in Table I made observations in 1974.

The average light curve (Figure 1) is obtained from the data of all four apparitions. It is clear that the comet does not always show a regular behavior in all apparitions. In 1985 (upside-down triangles) it was unusually bright long before the perihelion passage, while the 1969 (squares) and the 1974 curves (triangles) are close to (but do not match exactly) the 1990 one. In particular, in the 1974 apparition, the comet did not brighten in a regular way approaching to perihelion, and it reached a maximum heliocentric magnitude of only 9.2 — *i.e.*, ~ 1 mag fainter than during the 1990 apparition. Given these discrepancies, it is difficult to draw an average light curve, and we can make an accurate analysis for the 1990 apparition only — where more data are available and the light curve is more defined.

Figure 1

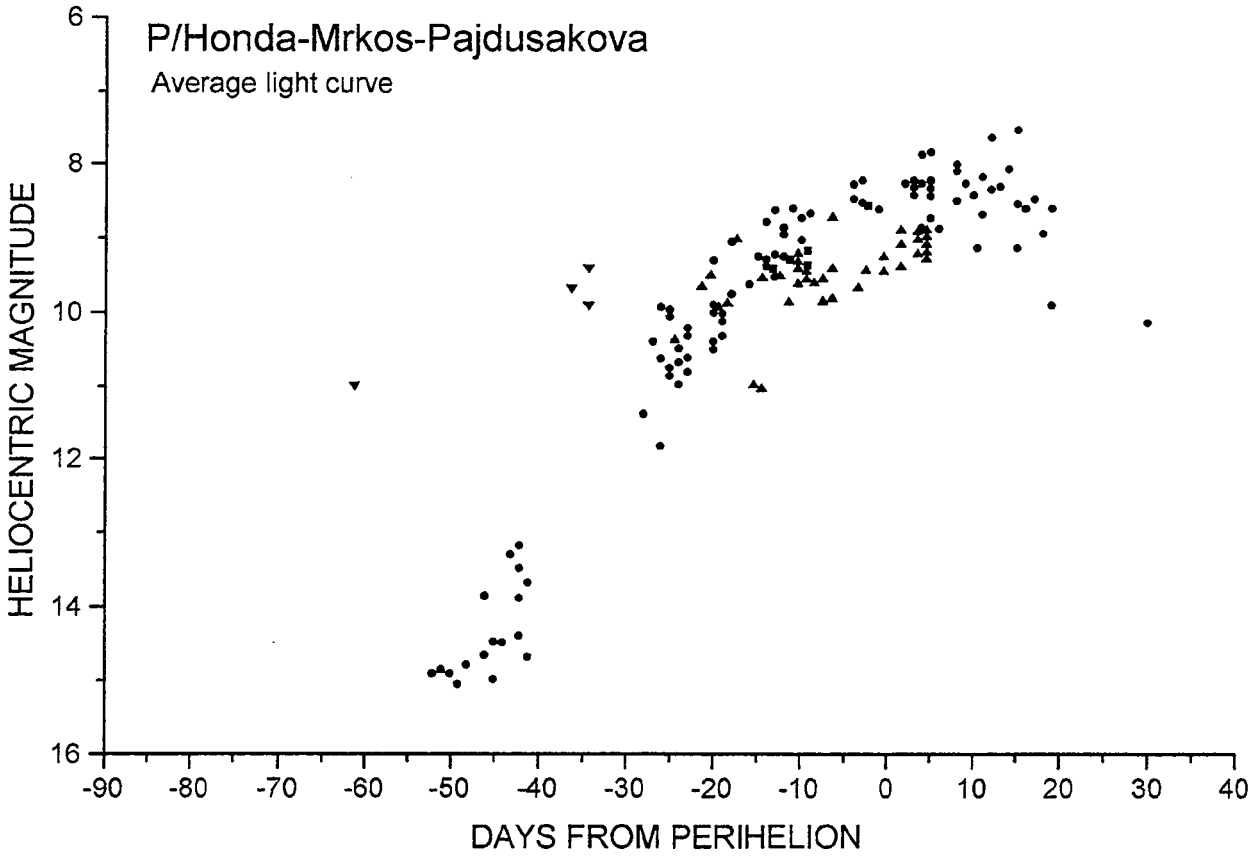
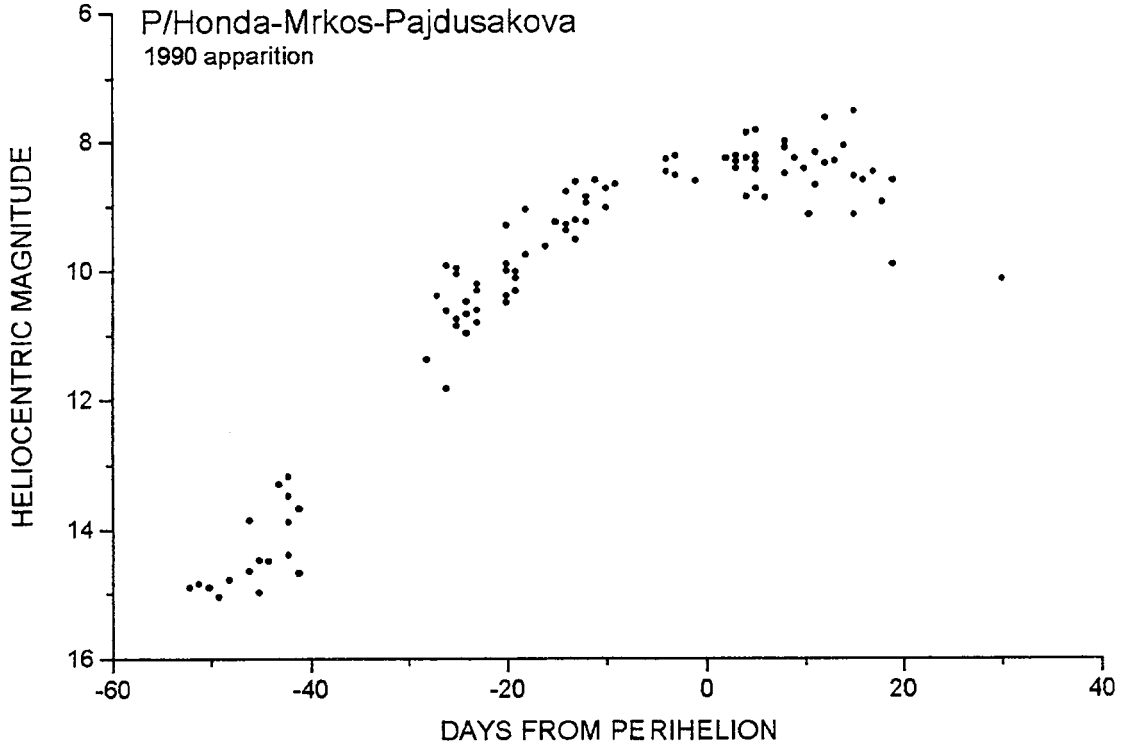


Figure 2



The light curve of Figure 2 was obtained with the 1990 observations and shows a very regular behavior with a peak brightness reached ~ 6 days after perihelion (heliocentric magnitude 8.3), but the scattering of the data increases noticeably after perihelion passage. This may very likely be related to the difficult observing conditions (solar elongation close to 30°), but may also indicate a possible small flare (~ 0.8-mag amplitude) 12-13 days after perihelium passage.

Using the least-squares method, applied to all the 1990 data, I find the following values for the photometric parameters: $H_o = 13.91 \pm 0.13$, $n = 9.0 \pm 0.27$, where H_o is the so-called absolute magnitude and n is the exponent in the standard power-law equation for comet brightness ($m_1 = H_o + 5 \log \Delta + 10 \log r$, where Δ and r are the comet's geocentric and heliocentric distances in AU, respectively). The interpolation of the data is quite good, with a correlation index $R = 0.96$, and the values are very close to those published in the *ICQ 1995 Comet Handbook* ($H_o = 13.5$, $n = 8$) [Nakano and Green 1994]; they are also close to the values published by Bortle [1982] for the 1969 apparition, calculated from his own observations ($H_o = 13.98$, $n = 8.35$).

TABLE I.

Observer	1969	1974	1985	1990
John E. Bortle, U.S.A. (BOR)	6	12		12
Paul Camilleri, Australia (CAM03)				1
Marco Cavagna, Italy (CAV)				1
Maurice L. Clark, Australia (CLA)			3	
Haakon Dahle, Norway (DAH)				1
William G. Dillon, U.S.A. (DIL)		1		
Daniel W. E. Green, U.S.A. (GRE)		9		
Roberto Haver, Italy (HAV)				2
Alan Hale, U.S.A. (HAL)				10
Nariyasu Hashimoto, Japan (HAS02)				1
Akiyoshi Ishikawa, Japan (ISH02)				2
Jost Jahn, Germany (JAH)				3
Kazimierz Kandefer, Poland (KAN02)				1
Richard A. Keen, U.S.A. (KEE)				2
Hartwig Luethen, Germany (LUE)				2
Leonard Matuszewski, U.S.A. (MAT02)		4		
Oernulf Midtskogen, Norway (MID01)				1
Herman Mikuz, Slovenia (MIK)				1
Shigeo Mitsuma, Japan (MIT)				4
Robert J. Modic, U.S.A. (MOD)				10
Charles S. Morris, U.S.A. (MOR)		1		11
Warren C. Morrison, Canada (MOR03)				8
Wolfang Muehle, Germany (MUH)		2		
Akimasa Nakamura, Japan (NAK01)				5
Tetsuya Nakamura, Japan (NAK05)				1
Gary T. Novak, U.S.A. (NOW)				1
Andrew R. Pearce, Australia (PEA)			1	9
Alfredo J. Pereira, Portugal (PER01)				1
Alexandre Renou, France (REN)				5
Alex H. Scholten, The Netherlands (SCH04)				1
Clay Sherrod, U.S.A. (SHE)		4		
Karl Simmons, U.S.A. (SIM)		2		
Kesao Takamizawa, Japan (TAK05)				2
Joseph D. Truxton, U.S.A. (TRU)		4		
Mitsunori Tsumura, Japan (TSU02)				1
Derek Wallentinsen, U.S.A. (WAL)		3		
Graham W. Wolf, New Zealand (WOL01)				1
Wayne Wooten, U.S.A. (WOO01)	1			
Masanori Yasuki, Japan (YAS)				1
TOTAL MAGNITUDE ESTIMATES	7	42	4	103

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Φ Φ Φ Φ Φ

CORRIGENDA

In the October 1995 issue, page 166, first line under section IV, *for* ome observers *read* some observers

In the October 1995 issue, page 208, 58P/Jackson-Neujmin, the three observations by BOU need correction. The Aug. 31.92 and Sept. 3.01 observations had measured coma diameters of 0'.8 and 0'.7, respectively. *For* `1995 09 02.98` *read* `1995 09 01.98` [and add coma diameter 0'.7].

In the October 1995 issue, page 214, date `1995 09 28.21` (observer SAI), the magnification *should read* `7` and the DC *should read* `8/`

In the October 1995 issue, page 215, date `1995 10 01.20` (observer SAI), the instrument *should read* `5.0B 7` and the DC *should read* `8/`

In the October 1995 issue, page 215, date `1995 10 02.20` (observer SAI), the magnification *should read* `7`

In the October 1995 issue, page 215, date `1995 10 04.18` (observer SAN04), the magnitude method *should read* `B`

In the October 1995 issue, page 215, date `1995 10 05.10` (observer THO03), the tail p.a. *should read* 285

In the July 1995 issue, page 94, in the descriptive information for 19P/Borrelly, line 14, *for* Dec. 12.28: *read* Dec. 28.28:

In the July 1995 issue, page 95, first line, *for* coma strongly suspected *read* comet strongly suspected

In the *1995 Comet Handbook* [June 1994, *ICQ* **16**(2a)], p. H60 ("Index to Ephemerides"), *for* Helin-Lawrence 1993l *read* P/Helin-Lawrence 1993l

In the January 1980 issue (No. 33), p. 19, "Periodic Comet Klemola (1976 X = 1976j) [= 68P/Klemola]", the three observations by observer HUR were made in 1976, *not* 1977 (all other information for those observations is correct).

Φ Φ Φ Φ Φ

Tabulation of Comet Observations

The occurrence of two bright comets within a year means much work for the *ICQ* Editor! This issue contains more than 3000 tabulated observations of comets by 180 observers from 30 countries, and there are now more than 80,000 tabulated photometric observations in the *ICQ* computer archive. In attempting to keep high standards, there has been much more correspondence with contributors than usual in the past few months — due to many new contributors and to the fact that some contributors have only recently started sending data via e-mail (and therefore must adjust to the more stringent requirements for reporting data in proper columns of our 80-column format). We encourage contributors to check *and double-check* all information before sending it; many little errors creep in to the typing in of data from paper, and some are pretty obvious with a little careful checking.

Contributors of *tabulated* data of comets should note that, regarding measurements of the tail(s), only the longest tail length should be given **with its corresponding single position angle in degrees** in the tabulation; all shorter tails, *and all position angle "spans"* or ranges, should be given as descriptive information and not in tables. Some observers will give a single tail length and then a range of position angles (*e.g.*, 45°-90°), in the case of fanned tails. We cannot tabulate such spans in p.a., and the reported (tabulated) tail *length* should correspond to the actual measured length at the listed p.a. (and not for the center of a range in p.a., in the case of a fanned tail, *unless the tail has constant tail length over the entire span of p.a.*

New code for 'special notes' Key: `r` = binoculars were reversed, such that one looked through the (larger) objective lens acting as the eyepiece, and the eyepiece acted as the objective aperture [for the magnitude estimates of bright comets].

New codes for 'comparison-star references' Key:

`SD` = V magnitudes of members of the globular cluster M15 in the range $13 < V < 22$ [and also nearby field stars for 40 stars of mag 7.64, 10.42-11.15, and $12.9 < V < 18.8$], by A. Sandage (1970, *Ap.J.* **162**, 841).

`VG` = Japanese variable-star charts edited by K. Gomi and based on charts drawn by Y. Kawanishi, published in 1970 by Koseisha Co. as a spiral-bound book; its preface states that the magnitudes of comparison stars are taken from *Harvard Annals* (Vols. **37**, **50**, **54**, and **57**) and from *Skalnate Pleso II (Atlas Coeli)*. Akimasa Nakamura, who reported this reference to the *ICQ*, says that his comparison of Gomi charts with AAVSO charts show that the comparison-star magnitudes are very close to each other.

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

◇ *Comet C/1993 Y1 (McNaught-Russell; O.S. 1993v)* ⟹ 1994 Apr. 3.49: another tail 15′ long in p.a. 0° [NAG04].

◇ *Comet C/1995 O1 (Hale-Bopp)* ⟹ 1995 July 31.53: involved w/ star of mag 11 [CAM03]. Aug. 20.05: stellar false nucleus in S part of coma (mag 12) [DID]. Aug. 26.04: stellar nucleus of mag 11.5 in N part of coma [DID]. Aug. 31.02: no stellar nucleus [DID]. Oct. 11.09: obs. hurried due to encroaching moonlight [HAL]. Oct. 12.10: m_1 estimate possibly affected by two nearby bright stars [HAL]. Oct. 14.10: the comet has begun to move off the extremely dense 'carpet' of background stars it entered in mid-Sept.; this and subsequent obs. are thus made w/ a more 'normal' contrast against the background sky [HAL]. Oct. 22.10: hazy cond., poor seeing [HAL]. Nov. 9.06: obs. hurried due to encroaching moonlight; obs. affected by stars w/in coma [HAL]. Nov. 23.06: very low alt.; obs. affected by cirrus clouds [HAL].

1996 Feb. 14.53: low alt.; twilight; moonlight [HAL]. Mar. 7.51: bright moonlight [HAL]. Mar. 12.51: twilight; moonlight [HAL]. Mar. 26.49: w/ 41-cm *f*/4 L (72×), 0.′17 tail in p.a. 270° [HAL]. Mar. 29.70: w/ 31.7-cm *f*/5 L (64×), 2′ coma, DC = 3 [JON]. Mar. 30.46: w/ 41-cm *f*/4 L (72×), 6′ coma, 0.′25 tail in p.a. 268° [HAL]. Apr. 13.43 and 17.45: w/ 41-cm *f*/4 L (72×), 0.′33 tail in p.a. 270° [HAL]. Apr. 17.45: hints of the tail also seen in 10×50 B [HAL]. Apr. 18.10: bigger but not brighter w/ Lumicon Swan Band Filter [MEY]. Apr. 18.36: "w/ 41-cm L (70×), there is an obvious fan-shaped structure w/in the coma directed almost due N, widening strongly as it advances; at 114×, one gets the impression that, at ∼ 2′ from the nuclear region, the fan curves strongly counter-clockwise to point almost due W!" [BOR]. Apr. 19.49: dia. of central cond. was 9″ w/ mag 12.2; tail became abruptly more diffuse and fainter along its axis at a point ≃ 20″ from the central cond. [ROQ]. Apr. 24.06: fan-like coma open to p.a. 350° [BAR06]. Apr. 26.14: w/ 25.6-cm *f*/5 L (169×), 1.′5 jet in p.a. 340°-30°, curving tailward (p.a. 15°-270°) [BIV]. Apr. 26.44: central cond. of mag 11.9 and dia. 34″; tail appeared faint and fan-like, centered at p.a. 348°; a short (6″) projection at p.a. 243° appeared faint at *I* (800 nm), and progressively more pronounced at *V* (550 nm), w/ maximum visibility at *B* (440 nm) [ROQ].

May 3.44: "central cond. of dia. 4.″1 and mag 11.9; short, tail-like projection (jet?), as tabulated, was totally w/in the coma;" coma asymmetrical at p.a. 300° [ROQ]. May 6.41: central cond. of mag 11.6 w/ dia. 3″; coma asymmetrical toward p.a. 302°; an *R* image (650 nm) showed a strong, jet-like feature extending 19″ at p.a. 173°; the same feature imaged in *V* (550 nm), 27 min later, was 23″ long at p.a. 157°; in *B* (440 nm), it was faint and indistinct [ROQ]. May 11.38: central cond. of dia. 3″ and mag 10.9; coma was asymmetrical toward p.a. 340°; short, coma-imbedded tail visible in *R* (650 nm), but indistinct in the *B* image (440 nm) [ROQ]. May 14.32: w/ 41-cm L (70×), "the coma has a truly bizarre structure to it; it consists of a conical, corkscrew-shaped feature that occupies much of the total coma; at the apex of the feature is a nearly-starlike nucleus that is not brighter than 11th mag; the overall impression is that bright material is spiraling out from the nucleus in a counter-clockwise direction; while issuing from the nucleus at p.a. 5°, it eventually points toward the NW or even to the WNW!" [BOR]. May 15.58: w/ 2.5×25 B [SEA]. May 15.70: w/ 31.7-cm *f*/5 L (64×), DC = 6, tail in p.a. 5° [JON]. May 16.42: the tail that was visible during Mar./Apr. is starting to become more foreshortened; during this and some subsequent obs., the tail appears broad and 'stubby' [HAL]. May 16.99: parabolic or fan-shaped coma, open to p.a. 290°-350° [BAR06]. May 18.54: w/ 10×35 B, coma dia. 15′ [OME].

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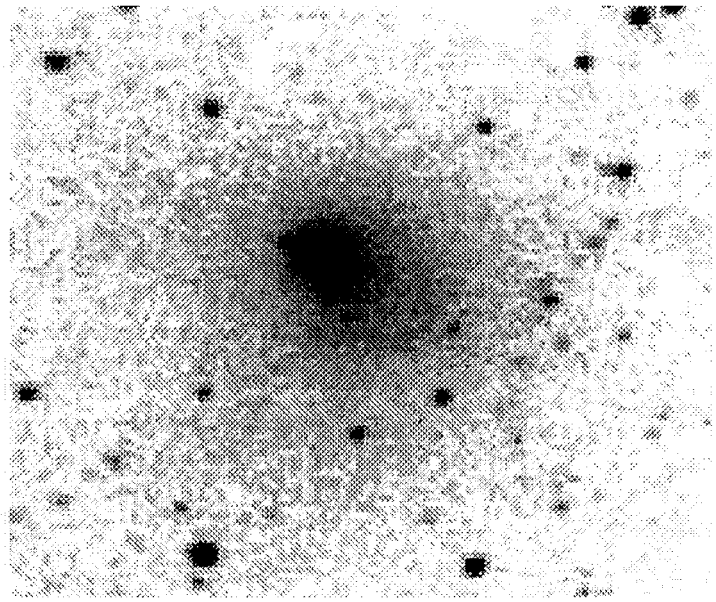

Unfiltered CCD image (exposure 100 sec) of C/1995 O1 by D. Rodriguez from Avila, Spain, on 1996 May 25.18 UT (15-cm reflector).

May 19.65 and 20.60: w/ naked eye, $m_1 \sim 6.7$ [Terry Lovejoy, Australia]. May 20.01: distinct, star-like central cond. [BAR06]. May 20.07: w/ 25.6-cm $f/5$ L (169×), 1′.5 jet in p.a. 355°-15°, curving to p.a. 310° at 4′; stellar nucleus (even at 507×) of mag 12.5 [BIV]. May 20.38: central cond. of dia. 4″ and mag 11.3; coma asymmetrical toward p.a. 345° [ROQ]. May 20.80: short fan-shaped tail [CAM03]. May 21.99: disk-like inner coma; faint, fan-shaped outer coma; at 96×, star-like central cond. [BAR06]. May 23.30: w/ 40.6-cm $f/5$ L (70×), 7′.5 coma, DC = 6/ [BOR]. May 24.06: photometry obtained w/ 20-cm $f/2$ Baker-Schmidt camera + V filter + ST-6 CCD, showing a conspicuous 2′ central cond.; coma ~ 7′ × 10′, asymmetric towards p.a. ~ 270° [MIK]. May 24.66: tail seems split into two fork-like tails at p.a. 160° and 200°, w/ a broad fan-shaped tail between them [CAM03]. May 24.80: tail appeared as a broad, diffuse fan spanning p.a. 240°-284° [PEA]. May 25.79: tail appeared as a broad, ill-defined fan [PEA]. May 27.39: central cond. of dia. 3″ and mag 11.1; inner and outer coma presented a pronounced and smoothly-bounded asymmetry toward p.a. 340° [ROQ]. May 29.06: "w/ 20.3-cm T (50×), DC = 6, false nucleus of mag ~ 12.5 offset to the S; coma well-defined to the S, but rather diffuse and elongated to the N (tail?)" [KAM01]. May 29.08: "using the logarithmic display, the coma clearly shows clockwise spiral structure; the initial burst of material starts from the central cond. at p.a. ~ 0°, continues in clockwise direction, and finally broadens to an ~ 20′ fan-like tail ~ 30′ long" [MIK].

June 1.32: central cond. of dia. 5″ and mag 11.4; coma generally asymmetrical toward p.a. 331°; straight, 10″ jet embedded w/in coma at p.a. 17° [ROQ]. June 6.95: distinct, star-like central cond. of mag 10.9: [BAR06]. June 7.33: central cond. of dia. 3″ and mag 11.4; coma generally asymmetrical toward p.a. 337°; two short, faint, diffuse jet-like features at p.a. 95° and 115° on the blue (440 nm) image [ROQ]. June 7.86: coma 3′.0 × 1′.8 [COO02]. June 7.95: elongated coma [MEY]. June 7.95: w/ 11-cm $f/7$ L (32×), coma 5′, DC = S5 [VEL03]. June 7.97 and 14.94: delicate, fan-like tail [MIK]. June 8.32: poor cond.; moonlight [HAL]. June 8.43: w/ 90-cm R at Mt. Hamilton, CA, $m_2 = 12.0$, dia. 6″ [GAL]. June 8.83: w/ 6.7-cm $f/4.5$ A, exp. on x-ray 1000 film (13×18-cm format) for 13 min shows dia. of inner disk-like coma as 2′; fan-like jet 3′ long spans p.a. 340°-0°; second, narrow jet 3′ long in p.a. 25° [FIL05]. June 8.94: star involved in coma [ZNO]. June 9.95: faint, wide outer halo [MEY]. June 12.30: central cond. of mag 11.7 and dia. ≃ 4″; coma quite asymmetrical toward p.a. 346°, although no tail structure was evident w/in this sector [ROQ]. June 12.90: fan-shaped coma, open to p.a. 290°-350°, more extended in p.a. 310°; narrow streamer extending for 5′ from star-like central cond. toward p.a. 320° [BAR06]. June 12.96: "central cond. asymmetrical in coma; w/ 20.0-cm L (42×), faint tail(?) 6′ long in p.a. 342°" [SCH04]. June 13.14: w/ 25-cm $f/10$ L (63×), 4′ coma, DC = 6 [GEY]. June 13.98: "w/ 20.0-cm L (42×), central cond. asymmetrical in coma" [SCH04]. June 14.03: "w/ 20.3-cm T (50×), false nucleus of mag ~ 10.5, offset to SSW; coma well-defined to SSW, but rather ill-defined and elongated to the NNE (tail?)" [KAM01].

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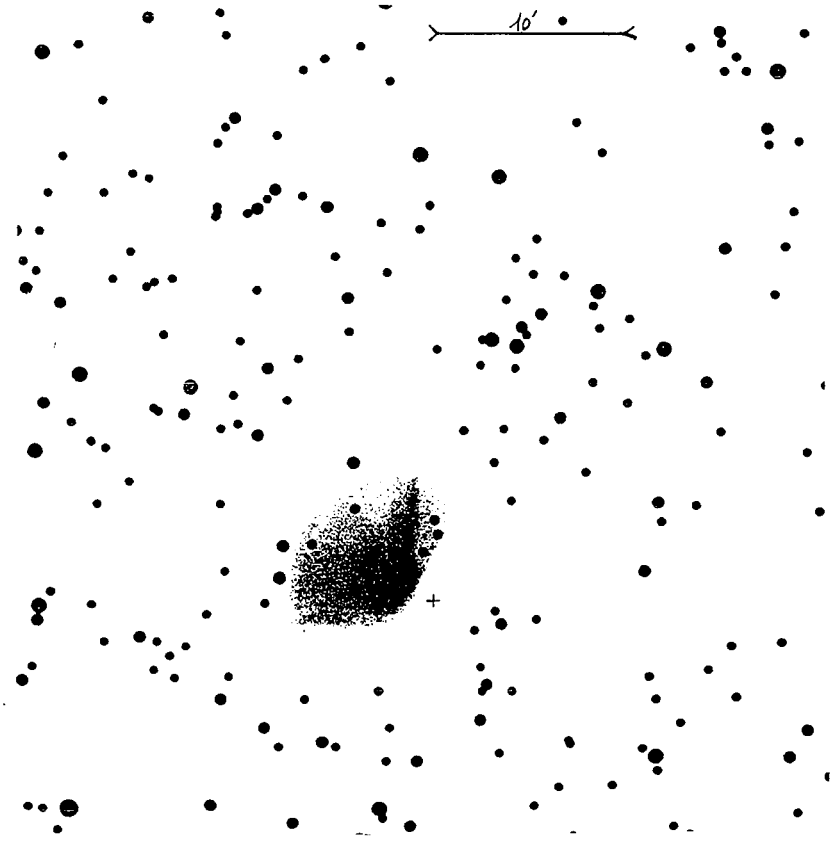

Drawing of C/1995 O1 by Stéphane Garro at Merlette, France, on 1996 June 13.00 (27.9-cm f/10 T, 80×, 112×). North is up; the bar at top is 10′ across.

June 15.05: w/ 31.0-cm $f/5$ L (154×), 2′ coma, 0°.16 tail [PUJ01]. June 15.56: broad fan tail 15′ wide centered on p.a. 0°; tail seems brighter on W edge; comet has sharp central cond. of dia. ~ 2′ [CAM03]. June 15.98: starlike nucleus, reminiscent of 73P during its outburst last year [DES01]. June 16.05: photometry obtained with a 180-mm camera lens at $f/2.8$ (+ V filter + CCD); delicate fan-like tail ~ 1° long in p.a. ~ 220° [MIK]. June 16.35: in 41-cm L, the coma appears as a broad fan extending to the N of the cond.; some material can faintly be seen to the S as well; the tail seen during Mar./Apr. is no longer visible, and is presumably extending directly beyond the coma [HAL]. June 16.94: fan-shaped coma with the bright, distinct border on either side; narrow streamer extending from star-like central cond. [BAR06]. June 17.28: central cond. of mag 10.3 and dia. ≃ 3″; bright, inner regions of the coma (and also the extended coma) showed a pronounced asymmetry toward p.a. 352° [ROQ]. June 17.99: photometry as on June 16.05; no trace of tail feature that was present on June 16.05 [MIK]. June 18.32: comet very faintly glimpsed w/ naked eye for first time [HAL]. June 21.32: m_1 estimate possibly contaminated by bright star w/in coma [HAL]. June 22.27: central cond. of dia. 4″ and mag 10.6; coma noticeably asymmetrical toward p.a. 346°, but no tail formation [ROQ]. June 24.35: visually, m_1 brighter than mag 6.0, but comet only 10′ from HD 177012 (star of mag 7.5); coma clearly extended at least to this star; earlier on same night, w/ Lowell Observatory 53-cm photometric telescope + 12″ diaphragm and Strömgren y filter, w/ transformation to Johnson system, gave $V = 10.9$ for this innermost part of comet [Brian Skiff, Anderson Mesa, AZ]. June 24.39: w/ 41-cm L, the northward fan is very broad and almost seems to have a 'butterfly' shape [HAL]. June 26.21: w/ 41-cm L (70×), DC = 7, "coma is noted to be slightly elliptical in outline; w/in is a large, bright, conical or fan-shaped structure that occupies most of the coma's diameter; the 'fan' is ~ 45° wide in p.a.; w/ this structure being several arcmin in size but not projecting beyond the outlines of the coma, it is difficult to decide whether it should be classified as a huge fountain or a rudimentary tail; at 114×, the nucleus is very obvious and as hard as any field star" [BOR]. June 27.26: central cond. of dia. 3″ and mag 10.8; outermost coma generally symmetrical, while inner portions asymmetrical toward p.a. 354°; slight hint of a very short tail-like projection at p.a. 343° [ROQ].

July 6.13: bright nucleus appears at head of a broad, fan-shaped tail pointing generally in p.a. 330°; w/ 37-cm L (127×), tail ~ 1° long [CHE]. July 9.35: comet's position over Scutum star cloud makes naked-eye m_1 estimates very problematical, because the eye cannot tell what visible elements belong to the comet and what belong to the Scutum background [OME]. July 11.16: "w/ 41-cm L (70×), the coma is very strangely shaped *(see drawing below)*, reminding me of the wedge-shaped outline of a guitar pick!; coma dia. 6′.5, tail 0°.11 long in p.a. 0°; the coma's elongation is in p.a. 170°-350°; near the apex, w/in a strongly condensed area, is a pseudo-nucleus of mag ≃ 11.0 (estimated against GSC field stars); from this feature originates a counter-clockwise arching or spiraling outflow of bright material; several long, straight rays are suspected w/in this feature as well; a most extraordinary looking object!" [BOR]. July 14.94: w/ 20.3-cm T (50×), broad tail 0°.2 long in p.a. ~ 10°, false nucleus of mag ~ 9.5 [KAM01]. July 16.91: w/ 20.3-cm T (50×), false nucleus of mag ~ 10.0, offset to SSW; coma well-defined to SSW, but rather ill-defined to the NNE; no tail definitively [KAM01]. July 17.90: delicate fan-like tail; comet barely visible even with the naked eye; very good observing conditions [MIK]. July 18.89: delicate fan-like tail [MIK]. July 22.88: w/ 20-cm $f/2$ Baker-Schmidt camera (+ V filter + ST-6 CCD); fan-like tail at least 1° (probably extending beyond the frame) [MIK]. July 23.19: for Sidgwick method, 12×50 B used as a monocular due to large size of coma (right eyepiece defocuses further, as with most small binoculars); this is a good example of where the Bobrovnikoff method breaks down for comets with large comae — in this case, the comet's brightness comes out more than 1 mag fainter with method B than method S [GRE].

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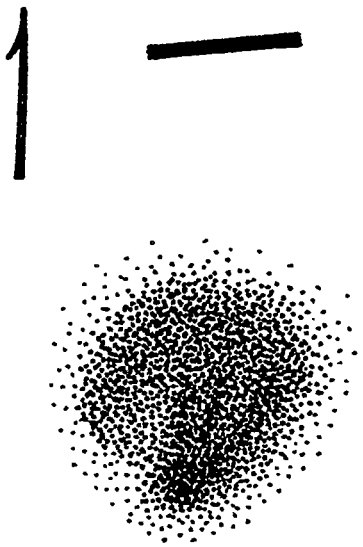

Drawing of C/1995 O1 by John E. Bortle at Stormville, NY, on 1996 July 11.16 (see text above). North is in direction of arrow; the horizontal bar at top has length ~ 3′.

◇ *Comet C/1995 Q1 (Bradfield)* ⟹ 1995 Sept. 28.38, 30.38, and Oct. 3.38: small central cond. [DID]. Oct. 21.48: during this obs. and on Oct. 26, 41-cm L reveals a faint antitail, ~ 15′ long, in the pro-solar direction [HAL]. Nov. 1.51: the antitail is shorter and broader than during previous observations, and appears vague and featureless [HAL]. 1996 Jan. 14.25: the comet was assumed to be a large, diffuse coma [HAL].

◇ *Comet C/1995 Y1 (Hyakutake)* ⟹ 1996 Jan. 25.72: enhanced w/ Swan-band filter [SEA]. Jan. 26.73: somewhat enhanced w/ Swan-band filter [SEA]. Jan. 27.29: brighter w/ Swan-band filter [DEA]. Jan. 28.29 and 29.30: slightly brighter w/ Swan-band filter [DEA]. Feb. 14.23: w/ 11×80 B, m_1 = 7.8, coma dia. 6′.5 [BUL01]. Feb. 14.45: w/ 41-cm f/4 L (72×), 0°.17 tail in p.a. 310° [HAL]. Feb. 21.22: star of mag 11.5 in coma [SCH04].

◇ *Comet C/1996 B1 (Szczepanski)* ⟹ 1996 Jan. 28.45: in 41-cm L, the comet made a striking 'double nebula' w/ NGC 5474 [HAL]. Feb. 10.30: fairly large (1′) "central" cond. at NW edge of coma [DID]. Mar. 11.47: somewhat enhanced w/ Swan-band filter [SEA]. Mar. 11.87: w/ 28.0-cm T, central cond. [COM]. Apr. 27.16: central cond. of mag 16.7 and dia. 2″.5; coma faint and irregularly defined, but relatively symmetrical [ROQ].

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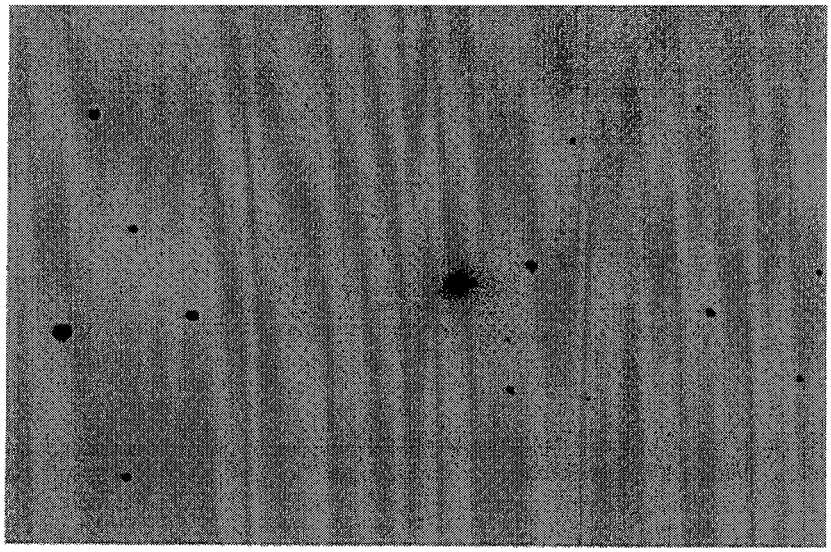
Below: ***CCD image of C/1996 B1 (Szczepanski) taken by Martin Mobberley (Cockfield, Bury St. Edmunds, Suffolk, England) on 1996 Feb. 1.259 UT; 80-sec exposure with 49-cm f/4.5 reflector + Starlight Xpress CCD. North is up, and the field is 10′ × 6′.***



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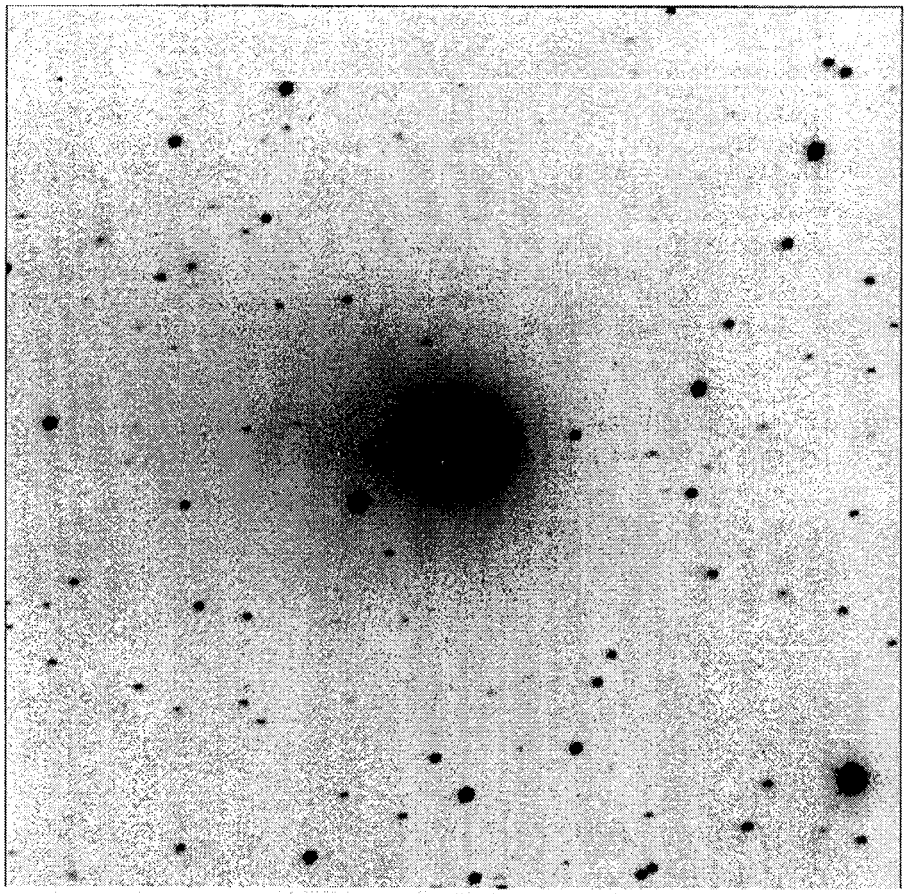
◇ *Comet C/1996 B2 (Hyakutake)* ⟹ 1996 Feb. 1.49: poor sky cond. [HAL]. Feb. 13.42: w/ Swan-band filter, definite brightening of coma [SHA04]. Feb. 14.24: w/ 21.6-cm f/7 L (64×), m_1 ~ 8.1, 4′ coma [BUL01]. Feb. 14.45: w/ 41-cm f/4 L (72×), 0°.17 tail in p.a. 310° [HAL]. Feb. 21.17: maximum alt. 6° [GRA04]. Feb. 22.76: fainter outer coma and very strong, almost-starlike cond. of dia. ~ 0′.3 in central region of coma; faint tail [CAM03]. Feb. 23.44: w/ 41-cm f/4 L (72×), 0°.33 tail in p.a. 275° [HAL]. Feb. 23.65: w/ 31.7-cm f/5 L (64×), DC = 5, 0°.1 tail in p.a. 260° [JON]. Feb. 24.73: cond. still very strong (dia. 0′.4); faint outer coma [CAM03]. Feb. 26.44: fan-shaped tail most prominent at p.a. 345° and 40° [SHA04]. Feb. 27.38: central cond. diffuse w/ dia. ~ 2′ [DID]. Feb. 28.63: w/ 7.8-cm f/7 R (30×), 5′ coma, DC = 5 [JON]. Feb. 29.16: obs. indoors through window [SKI]. Feb. 29.19: also 0°.4 tail in p.a. 35° [SHA02].

Mar. 1.39: 41-cm L (57×) shows the coma as essentially parabolic in outline; at the focus is an apparently stellar nucleus of mag 11.2 (comparison w/ GSC field stars); nucleus is still stellar at 114×, but noticeably fainter than at 57× [BOR]. Mar. 2.17: alt. 7°; in 20.3-cm f/10 T (80×), coma appeared elongated E-W [GRA04]. Mar. 2.50: first naked-eye sighting; appears as a faint star [HAL]. Mar. 7.14: coma appeared bluer than the nearby K4-star SAO 183040, but not as strongly colored as 122P/de Vico around T last year; central part of coma was quite intense; m_2 estimate refers to an apparently stellar nucleus [GRA04]. Mar. 7.36: a 198-sec CCD exp. w/ 20-cm f/1.5 Schmidt camera (+ V filter) in bright moonlight reveals a strong, sharply-defined ion tail at p.a. 301° extending at least 16′ from the nucleus; at a distance of 10′ from the nucleus, this ion streamer at p.a. 301° is ~ 13% brighter than the background particle tail (an intensity scan ⊥ the streamer shows it to be no wider than 15″); a second ion tail or jet is visible at p.a. 279° w/ a length of 3′.0; the broad particle tail lies at p.a. 282° and extends off the frame 28′ from the nucleus; the V magnitude within a square aperture 68″ on a side (and centered on the nucleus) is 8.48 ± 0.5 [William Liller, Viña del Mar, Chile]. Mar. 10.30 and 11.38: bright, condensed nuclear region w/ dia. 1′ [DID]. Mar. 11.29: w/ 41-cm L (57×), the coma contains an extraordinarily intense stellar nucleus of mag ~ 9.0; the strongly condensed portion of the coma occupies no more than 10% of its full dia.; overall appearance of coma is like comet C/1975 V1 (West) post-T in 1976 [BOR]. Mar. 12.47: w/ 10×50 B, 1°.0 tail in p.a. 262° [HAL]. Mar. 12.50: w/ 25×100 B, 0°.8 tail in p.a. 270° [SEA]. Mar. 12.62: w/ 15-cm f/6 L (28×), 1°.25 tail in p.a. 272° [CLA].



Above: *CCD image of C/1996 B2 (Hyakutake) taken on 1996 Feb. 14.529 UT by Peter Garnavich with the 1.2-m reflector at the Smithsonian Astrophysical Observatory's Mount Hopkins (AZ) site. R image, 61-sec exposure; field is 8′ × 8′, with north up and east to the right.*

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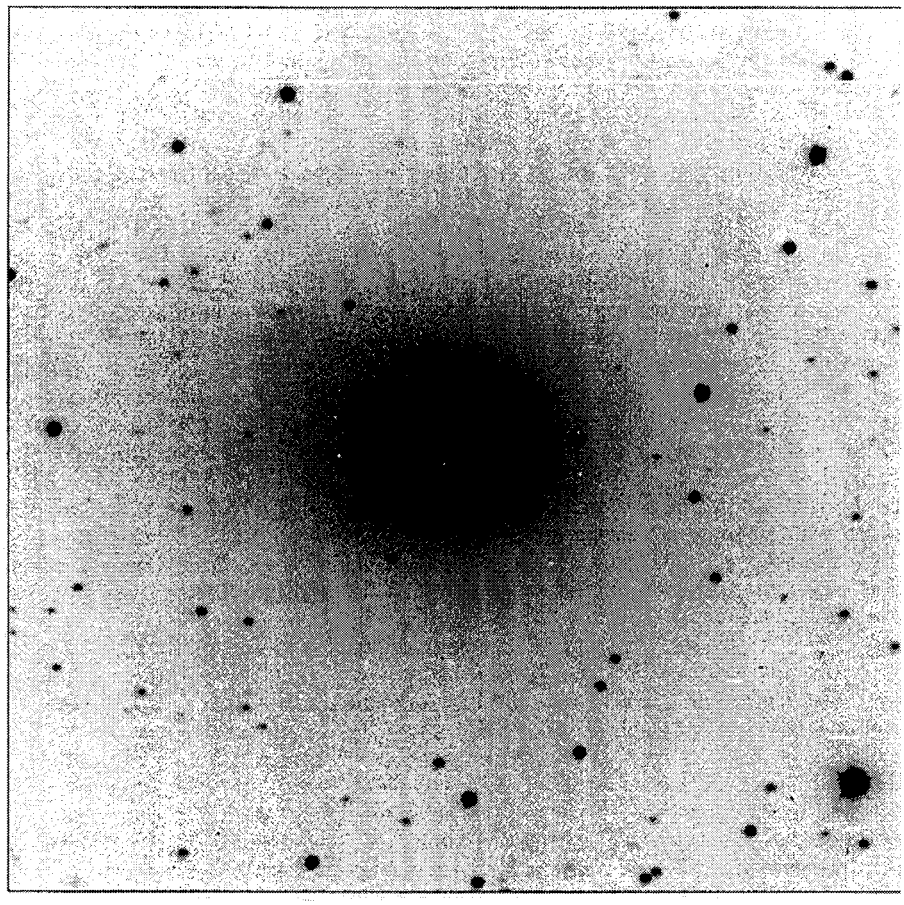
◇ *Comet C/1996 B2 (Hyakutake) [descriptive information cont. from page 113]* ⟹ Mar. 13.05: w/ 14×100B, 12′ coma, DC = 6, 3° tail in p.a. 260° [SHA02]. Mar. 13.26: the 41-cm L (57×) shows a hard, star-like nucleus of mag 8.5 (Ref: HS) at focus of parabolic coma; w/ 114×, coma's outline is more hyperbolic and a tailspine is obvious [BOR]. Mar. 13.35: faint stellar nucleas surrounded by a bright, diffuse central cond.; coma has parabolic shape, size 15′ × 35′ [DID]. Mar. 13.51: w/ 25×100 B, 1° tail spans p.a. 240°-290° [SEA]. Mar. 14.07 and 21.08: fan-shaped coma [HAV]. Mar. 14.42: dust tail in p.a. 300° and plasma tail in p.a. 330°; w/ Swan-band filter, brightening of inner coma [SHA04]. Mar. 14.44: w/ 10×50 B, 2°.0 tail in p.a. 276°; second tail 1°40′ long in p.a. 285° [HAL].

Mar. 15.05-15.07: comet observed only ∼ 5° above horizon [THO03]. Mar. 16.36: tail visible to naked eye, but hard to quantify; w/ 10×50 B, 4°.5 tail in p.a. 280° [HAL]. Mar. 16.38: narrow tail at p.a. 277°, broader tail 0°.75 long at p.a. ∼ 295° [DAH]. Mar. 16.46: w/ 31.7-cm *f*/5 L (64×), DC = 7, 0°.6 tail in p.a. 285° [JON]. Mar. 16.52: w/ 25×100 B, 1°.0 tail in p.a. 270°; m_1 made by viewing comet through reverse end of 2.5×25 B *(new special-notes code* r *—Ed.)*; w/ naked eye, 45′ coma, DC = 7 [SEA]. Mar. 16.613: beginning of 15-min photo on hypered TP2415 film w/ 35-mm lens, which shows ∼ 30′ coma, m_1 = 3.0, tail 3° long in p.a. 280°; a similar exp. 0.5 hr later w/ 135-mm lens showed two faint streamers in p.a. 275° and 285° extending 2° long and || the main tail [CAM03]. Mar. 16.64: w/ 15-cm *f*/6 L (28×), 3°.25 tail in p.a. 274°; bright, very small central cond. [CLA]. Mar. 17.02: a new submission (but *not* stated as a correction or revision; *cf. ICQ* **18**, 71) gives 32′ coma, 32° tail in p.a. 270° [SCO04]. Mar. 17.30: tail significantly easier to see than on Mar. 16.38, from metro-Toronto; w/ naked eye, tail was very faint, though comet was easily spotted w/ naked eye [DAH]. Mar. 17.37: w/ 10×50 B, 5° tail in p.a. 280° [HAL]. Mar. 18.00: coma appeared elongated in E-W direction; m_1 = 3.4 w/ MM = B [GRA04]. Mar. 18.12: integrated magnitude of coma was compared w/ fully-defocussed comparison stars [SKI]. Mar. 18.27: comet now too large to estimate the magnitude using binoculars; w/ 10×50 B from downtown Toronto, DC = 6, 2°.3 tail in p.a. 270° [DAH]. Mar. 18.64: w/ 15-cm *f*/6 L (28×), 4°.7 tail in p.a. 267°; straight gas tail and slightly curved dust tail [CLA]. Mar. 19.03: in 10x50 B, 37′ coma, DC = 7, 4°.5 tail in p.a. 275°; coma was elongated w/ a parabolic outline and showed an asymmetric intensity distribution; tail was faint [GRA04]. Mar. 19.11: the tail was more diffuse and difficult to observe than last night [SKI]. Mar. 19.38: numerous streamers N and S of tail, and roughly || to it, visible in 10×50 B [HAL]. Mar. 19.61: w/ 15-cm *f*/6 L (28×), 4°.7 and 2°.5 tails in p.a. 264° and 248° [CLA].



Above: *CCD image of C/1996 B2 (Hyakutake) taken on 1996 Feb. 14.535 UT by Peter Garnavich with the 1.2-m reflector at the Smithsonian Astrophysical Observatory's Mount Hopkins (AZ) site. V image, 120-sec exposure; field is 8′ × 8′, with north up and east to the right.*

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Mar. 20.11: nucleus appeared stellar and was surrounded by a bright disc ~ 1′ in dia.; w/ 10×50 B, 38′ coma, DC = 7, tails 4° and 0°.9 long in p.a. 273° and 230° [GRA04]. Mar. 20.13: coma showed an asymmetric intensity distribution; tail was somewhat broader and more diffuse than on Mar. 18.12 [SKI]. Mar. 20.62: w/ 15-cm *f*/6 L (28×), 8°.5 and 3° tails in p.a. 258° and 237° [CLA]. Mar. 20.64: w/ 31.7-cm *f*/5 L (64×), 0°.6 tail in p.a. 280° [JON].

Mar. 21.02: coma asymmetric; several streamers visible; p.a. of tail w/ naked eye was 260°-270° [SKI]. Mar. 21.05: in 10×50 B, the inner part of the tail appeared fan-shaped w/ p.a. ranging from ~ 250° to ~ 285°; from this date, m_1 estimates also performed by using a home-made 1×60 monocular to defocus the images of the comparison stars [GRA04]. Mar. 21.52: w/ naked eye, 1° coma, DC = 7, bright ion tail 8° long in p.a. 275°, also diffuse 7° tail in p.a. ~ 250°; w/ 25×100 B, ion tail split into a 'Y' formation ~ 2°.6 from nucleus — S segment apparently disconnected (the section of this segment near the disconnection appeared more intense than the main ion tail at equivalent distance) [SEA]. Mar. 21.716: photo on hypered TP 2415 film (10-min exp.) w/ 135-mm *f*/3.5 lens shows coma of dia. ~ 30′ and mag ~ 1, with tails of length 0°.5, 1°.5, 8°, 2°.0, and 0°.5 in p.a. 265°, 245°, 240°, 230°, and 220°; 2° from the coma, the main tail splits into two streamers that continue for another 6° [CAM03]. Mar. 21.75: w/ 20.3-cm L, three tail streamers quite bright [CAM03]. Mar. 21.92: coma elongated in direction of tail; "divide and conquer" method gave $m_1 = 1.8$ [HEE].

Mar. 22.05: comet appeared considerably brighter and larger than last night; it was much bluer than Arcturus; w/ the naked eye, there was an apparently-stellar nucleus at mag 3.4 [GRA04]. Mar. 22.06: the comet showed an easily visible tail, w/ several streamers and irregularities; the onset of the tail was linked to the S part of coma [GRA04]. Mar. 22.22: w/ Swan-band filter, coma is enhanced/brightened [SHA04]. Mar. 22.27: the first 5° of tail was easily seen (the rest was faint); beautiful color contrast between Arcturus and the blue coma; in 10×50B, there were several thin streamers fanning out at different p.a. just behind coma — in addition to the main tail, which was broad and very bright in the innermost 2° [DAH]. Mar. 22.54: w/ naked eye, tail 30° long in p.a. ~ 255° "seen clearly (possibly detected as far as 45°-50°, merging w/ gegenschein; w/ 25×100 B and reflector, bright jet-like feature noted in nuclear region; in larger telescope, central region had the appearance of a tiny comet w/in the large one!" [SEA]. Mar. 22.68: tail traced out to 15° in p.a. 250 degrees w/ 20×80 B and some 40° w/ naked eye; w/ 20.3-cm L (112×), bright jet of material 2′ long emerges at p.a. 240° from the bright cond., giving appearance of a tiny 'great comet' w/in the coma; streamers seen

extending along main tail for several deg [CAM03]. Mar. 22.90: w/ 18.7-cm $f/5$ L (38×), 40′ coma, DC = 6, 8° tail in p.a. 231°, $m_1 = 2.3$ (MM: M; Ref: AA) [SHU]. Mar. 22.94: nuclear region of coma appeared larger and less sharp than during the previous night; sky somewhat hazy [SKI]. Mar. 22.94: coma showed a distinct blue-green color and appreared much more symmetrical than a few nights ago; w/ the naked eye, there was an apparently stellar central cond. of mag 3.0 (Ref: Y); tail was easily seen for the first 8° [GRA04]. Mar. 22.98: w/ 8-cm T (112×), 30″ jet turning at a rate of 15°/hr from p.a. 265° to 200° [HAV]. Mar. 22.99: w/ 25.4-cm $f/6$ L (61×), comet showed a bright nucleus and a prominent jet (measuring ∼ 2′) from the core toward SW (apparently at the same p.a. as the tail) [GRA04].

Mar. 23.02: w/ 15.2-cm L, a strong white-yellow jet ∼ 2′ long was seen behind the nucleus in same direction as the tail; w/ 11×80 B, 35′ coma, DC = 6, tail 2°.5 long in p.a. 245° [THO03]. Mar. 23.07: w/ 7×50 B, 12° tail in p.a. 247° [VEL03]. Mar. 23.10: w/ 25-cm L (174×), 3′ false nucleus that was tear-drop shaped [DID]. Mar. 23.13: w/ naked eye, $m_1 \sim 0.5$, 90′ coma, 20° tail in p.a. 230° [MOB]. Mar. 23.19: w/ 11×80 B, 60′ coma, DC = 6 [SCH12]. Mar. 23.24: "a most extraordinary sight to behold w/ the unaided eye!; the comet's head is almost 3 times the dia. of the full moon, while the tail can be traced out 30° — the first half being fully as bright as the Cygnus Milky Way!; the 10×50 B show a tailspine so obvious that is has an almost solid appearance to it!" [BOR] Mar. 23.41: distinct bright 'spine' visible from coma and extending ∼ 10′ in the tailward direction, seen in 41-cm L; this feature was prominently seen on the next several nights [HAL]. Mar. 23.70: tail traced out for ∼ 45° but may be slightly longer; w/ 20-cm L (112×), bright jet in p.a. 230° could be seen extending some 4′ (quite sharp close to the bright cond., then broadens out to merge w/ the inner coma) [CAM03]. Mar. 23.92: naked-eye tail was 21°, possibly also visible into Virgo; first 10° of tail was very bright [HEE]. Mar. 23.94: with naked eye, coma dia. 180′, tail 80° long in p.a. 220° (*cf. ICQ* **18**, 76) [FIL05]. Mar. 23.95: w/ naked eye, $m_1 \sim -1.0$, 120′ coma, 10° tail in p.a. 95° [MOR07]. Mar. 23.96: w/ 15.2-cm L, a strong white-yellow jet ∼ 3′ long was still visible behind the nucleus (see Mar. 23.02); at 32×, 50′ coma, DC = 7, 5° tail in p.a. 235° [THO03]. Mar. 23.97: two exp. of 6 min on Fujichrome 1600 film w/ a 50-mm $f/2$ A shows a secondary tail detached from the main gas tail; the disconnection event begins at 15° from the nucleus in p.a. 230° and is followed over 9° toward p.a. 234°, nearly || to the main tail, on its N side [MER].

Mar. 24: w/ 25-cm $f/4.5$ L (46×), small, round, 2′ nuclear region w/ a fan of material extending to ∼ 10′ from nuclear region to p.a. 110°-310° (centered at 45°) [DID]. Mar. 24.00: w/ 10-cm $f/5$ R (25×), 50′ coma, DC = 6, 20° tail in p.a. 211°, $m_1 = 1.5$ (MM: M; Ref: AA) [SHU]. Mar. 24.01: fountain-shaped coma [HAV]. Mar. 24.08: tail appeared narrow, but was easily visible; observed between clouds [SKI]. Mar. 24.15: w/ naked eye, $m_1 \sim 0.5$, 90′ coma, 40° tail [MOB]. Mar. 24.24: from rural site, first 15° of tail was strikingly visible, seen w/o much difficulty to 30° (last 10° of tail very faint and quite difficult); in 10×50B, a very straight tail was easily visible for 15°; innermost ∼ 5° of the tail quite narrow, the broadness of the tail slowly increasing w/ distance from coma; the light blue color of coma was striking; on Mar. 24.29, a 10° naked-eye tail was seen from Metro Toronto, w/ the comet almost exactly in the zenith [DAH]. Mar. 24.34: "41-cm L (57×) shows the brilliant nucleus to be quite stellar; from it issues an amazingly intense, bright jet that is very distinct out to at least 9′ from the nucleus, beyond which it fades rapidly into the more diffuse ion tail; the nucleus and this jet, taken by themselves, strongly resemble a great comet in miniature!; the nucleus and its immediate

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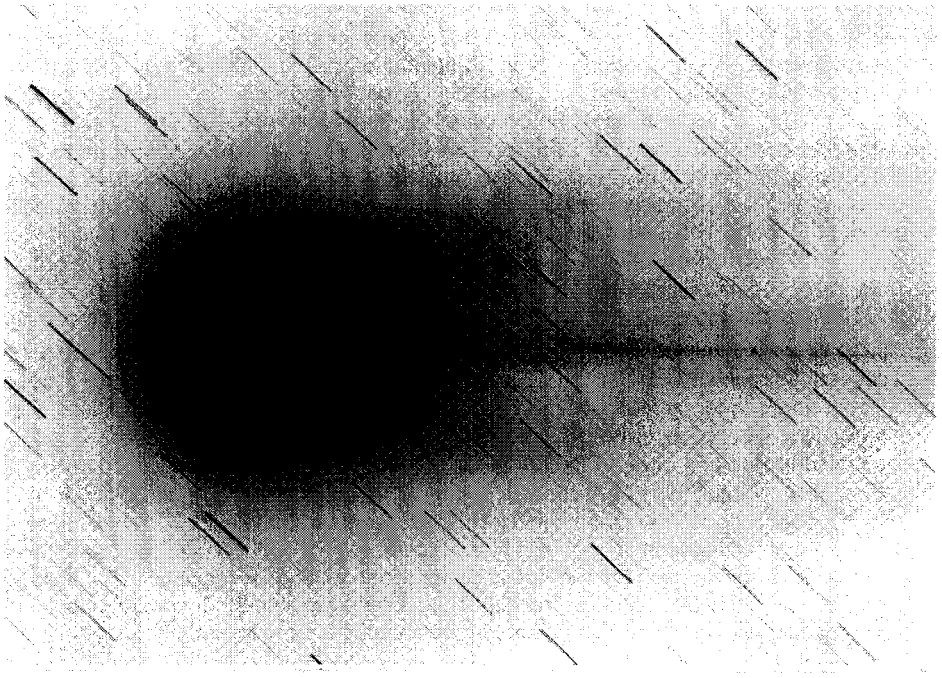
Below: *Photograph of C/1996 B2 (Hyakutake) taken by Eraldo Guidolin from Mt. Grappa (elevation 1650 m), Italy, on 1996 Mar. 24.974 UT; 16-min exposure on hypered TP4415 film (unfiltered) with a 19-cm f/4 flat-field camera. Note the bright spine down the center of the tail. (Guidolin also took the sequence of photos showing the disconnection event on pages 118-120.) Communicated by G. A. Milani.*



surroundings are of a tawny hue, in contrast to the bluish color of the remaining coma; sunward of the nucleus is a broad fan of bright material that is bounded on the NW by a short diffuse jet; the fan rises ~ 3′ sunward and spans perhaps 100° in p.a., being centered on p.a. 45°" [BOR]. Mar. 24.84: first seen w/ naked eye in nautical twilight [SKI]. Mar. 24.85: w/ 10-cm *f*/5 R (25×), 60′ coma, DC = 6, 30° tail in p.a. 204°, m_1 = 1.0 (MM: M; Ref: AA) [SHU]. Mar. 24.91: w/ naked eye, $m_1 = -0.3$ (MM: I; ref: SC); 70° tail in p.a. 215° (though not specified as a revision, this differs considerably from a previously-submitted version; *cf. ICQ* **18**, 77) [OGA01]. Mar. 24.95: the length of the tail was estimated as 35° (easily visible for 20°); width of the tail ~ 3° at 15° from coma [HIL02].

Mar. 25.05: "w/ 41-cm L (57×), there is a brilliant stellar nucleus, as sharp and hard as any star, from which issues a brilliant, narrow, straight jet that looks like a miniature searchlight beam!; it is sharp for at least 12′ before blending into a more diffuse ray that is believed to be the ion tail; opposite this feature is a bright fan of material extending ~ 3' sunward; it and the nucleus have a tawny hue to them; the nucleus is of mag 8.1 (Ref: HS)" [BOR]. Mar. 25.05: w/ 8-cm T (112×), double, narrow 1.′4 jet in p.a. 225°, the S jet being longer and divided from the adjacent N one by a narrow, dark zone [HAV]. Mar. 25.06: coma was blue-green; tail visible for 50° to ρ Vir (w/ several streamers and weak curvature near β Com (~ 30° from coma) [SKI]. Mar. 25.08: first 15° of tail easily seen (surface brightness of this part considerably brighter than the Milky Way in Cygnus; at 20°-25° from the coma, the intensity was comparable to the Cygnus Milky Way); the tail was quite narrow, the width was at most ~ 2.°5; m_1 = 0.6 (MM: B); apparent stellar cond. had mag 2.6 (Ref: Y); w/ 10×50 B, bright jet clearly visible as a short streak (~ 5′ long) in same direction as tail [GRA04]. Mar. 25.08: tail appears equally long and bright if observed with the naked eye through blue and yellow filters; in yellow light, the inner part appears slightly enhanced and diffuse [MIL02]. Mar. 25.10: w/ 11×80 B, 72′ coma [SCH12]. Mar. 25.19: jet emanates from nucleus in p.a. 210° (this becomes the plasma tail); w/ Swan-band filter, definite brightening of coma [SHA04]. Mar. 25.89: w/ 18.7-cm *f*/5 L (38×), 40′ coma, DC = 6, 35° tail in p.a. 180°, m_1 = 1.3 (MM: M; Ref: AA) [SHU]. Mar. 25.96: w/ 20.0-cm L (42×), starlike central cond. of mag 7.5 with fan-like streamers in sunward direction; short, sharp gas tail (in coma) 30′ long in p.a. 210° [SCH04].

Mar. 26.05: w/ telescope, ~ 14′ long jet seen from the nucleus in the direction of the tail; nucleus (m_2 = 7.9, Ref: S) connected to a bright nebulous region ~ 30″ in dia. [GRA04]. Mar. 26.08: central part of coma had dia. 12′ and mag 2.4 (Ref: Y); nucleus offset by 1/3 of the distance from the center of coma; tail was straight and easily seen for 45° (width ~ 3° at a distance of 10°-15° from coma); innermost ~ 5° showed a distinct bluish color [HIL02]. Mar. 26.08: tail straight, appeared slightly less prominent than during the previous night; the nucleus of coma was blinking like the surrounding stars due to turbulence in the atmosphere [SKI]. Mar. 26.15: w/ naked eye, m_1 ~ 0.9, 50° tail in p.a. 225° [MOB]. Mar. 26.19: "41-cm L (57×) shows a brilliant stellar nucleus from which emanates a triple-horned crescent of bright material in the sunward direction (the center horn touching the nucleus); the fan spans ~ 110°-120° in p.a; w/in this feature, a bright 'spray' is seen close to the nucleus, containing numerous ill-defined rays or jets; the tailward bright ray is not quite as strong as last night; w/ naked eye, the first 38° of the 54°-long tail are quite bright" *(see drawing on cover of this issue —Ed.)* [BOR]. Mar. 26.80: w/ 10-cm *f*/5 R (25×), 55′ coma, DC = 5, 40° tail in p.a. 174°, m_1 = 1.4 (MM: M; Ref: AA) [SHU]. Mar. 26.94: tail was easily visible for 15°, less visible to 30° (rest of it was faint) [SKI]. Mar. 26.96: w/ 15.0-cm L (32×), coma dia. 50′, DC = 6, tail in p.a. 155° [THO03].

Mar. 27.05: w/ 30.0-cm L (39×), dust tail ~ 5° long in p.a. 140°-145°; starlike central cond. of mag 6 w/ fan-like streamers in sunward direction; short, sharp gas tail [SCH04]. Mar. 27.07: dust tail 3°-4° long in p.a. 130°-140° [BUS01]. Mar. 27.08: tail very distinct to 15° from coma, clearly visible to 30°, and faintly seen to 45°; it was narrow, but the end of the tail appeared broader (width ~ 4°); apparently-stellar central cond. of mag 2.8 (Ref: Y); in 10×50 B, there

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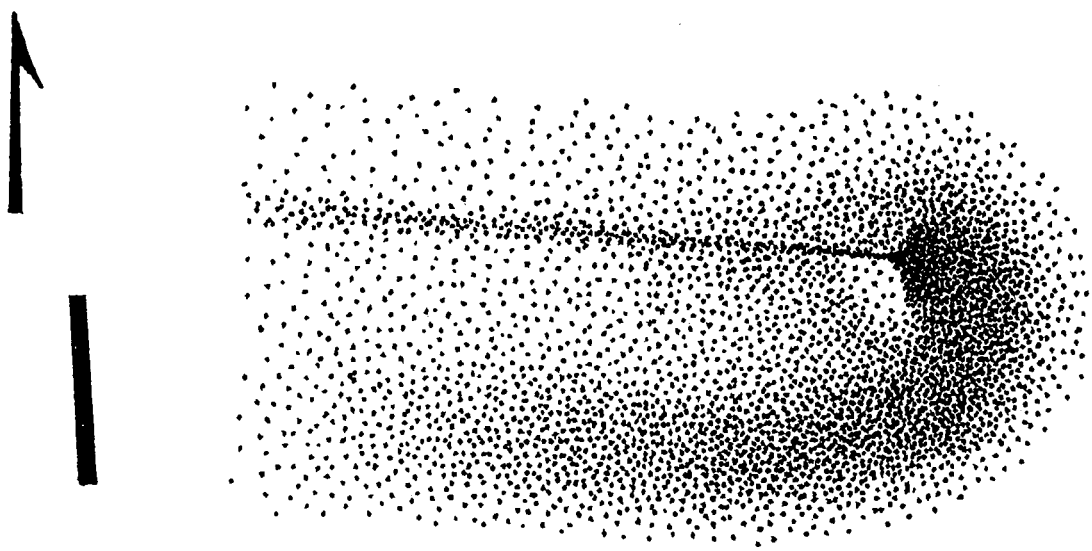
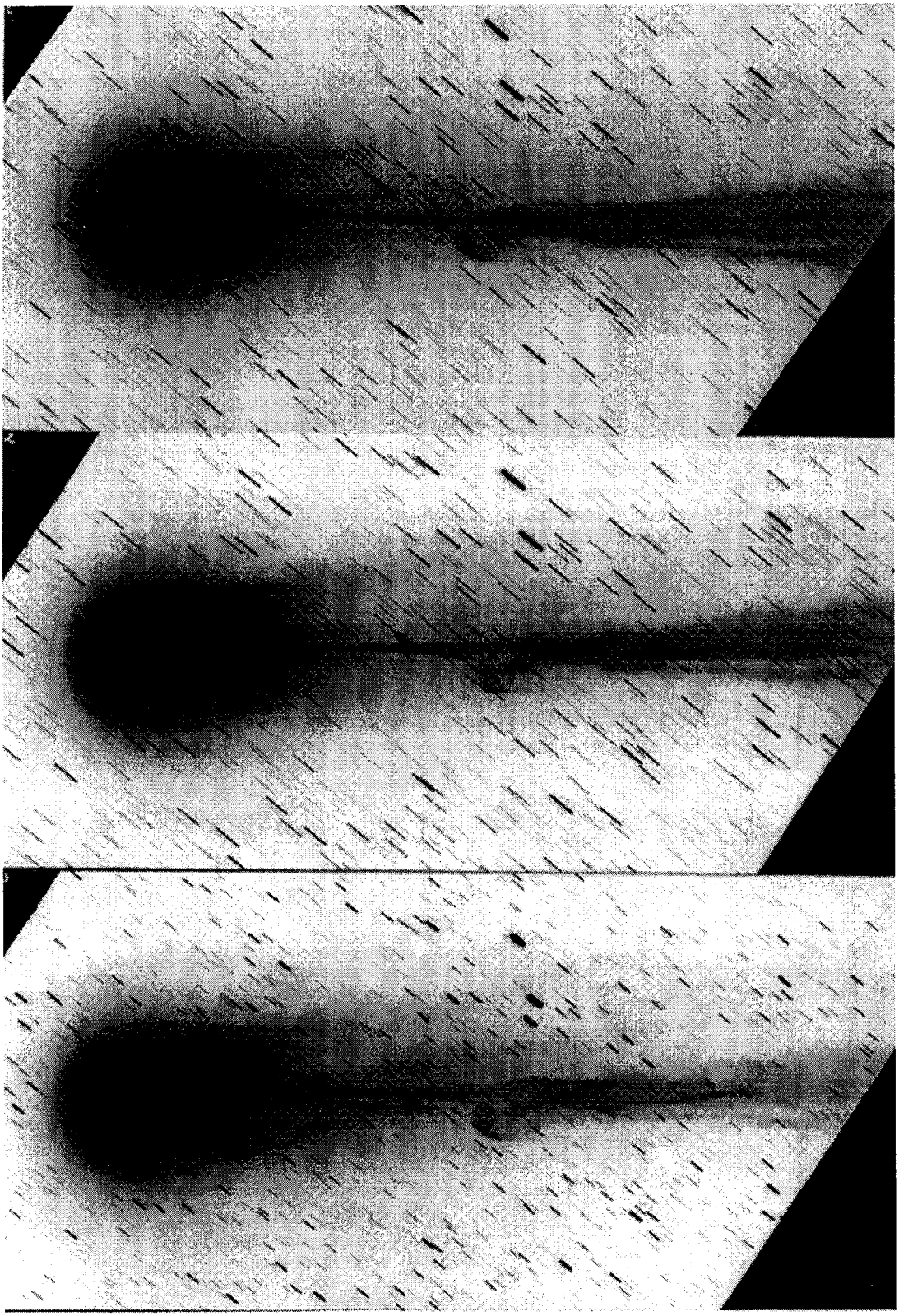
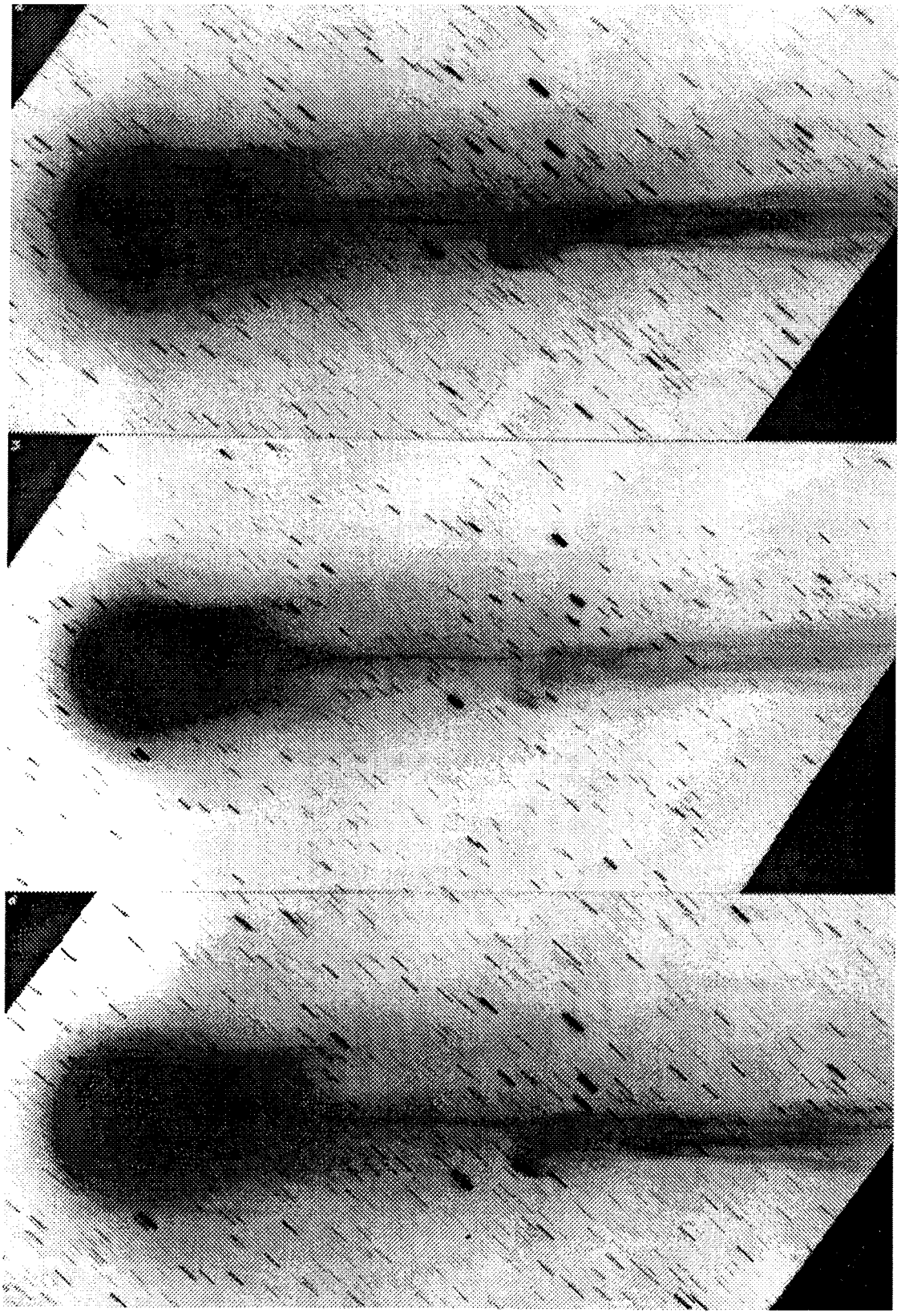
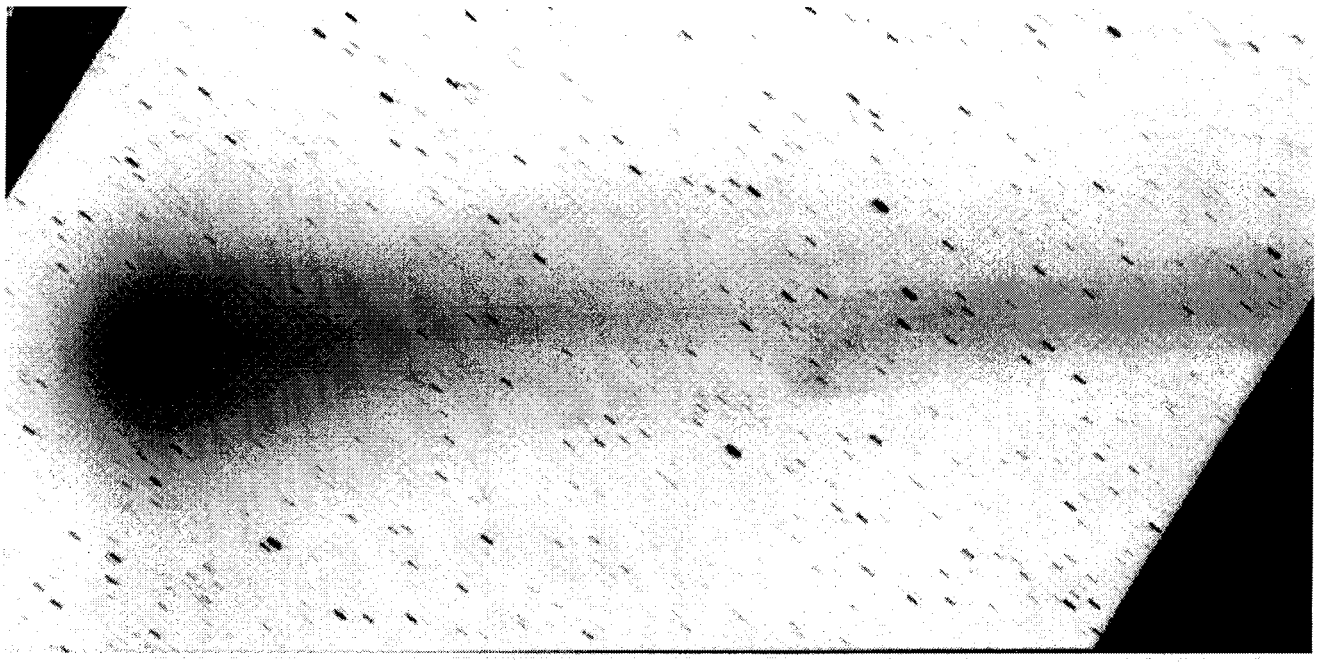
Below: *Drawing of C/1996 B2 (Hyakutake) on 1996 Mar. 27.27 UT by John E. Bortle of Stormville, NY (41-cm reflector); arrow points north (up), and short bar to its lower right denotes a length of ~ 15′ (see text on page 120).*



Below and on pages 119-120 is a series of seven photographs of C/1996 B2 (Hyakutake) taken by Eraldo Guidolin from Mt. Grappa, Italy, showing the motion of a prominent disconnection event in the comet's tail during March 24-25 UT. The photographs were all taken on hypered Technical Pan 2415 film with a 180-mm-focal-length $f/2.8$ lens (except the final image on page 120, which is from a color transparency). Beginning below, and proceeding from top to bottom, then to pages 119 and 120, the times of mid-exposures are Mar. 24.9805, 24.9979, 25.0104, 25.0239, 25.0361, 25.0468, and 25.0733.







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◇ *Comet C/1996 B2 (Hyakutake) [descriptive information cont. from page 117]* ⟹
was a bright, slightly curved streamer > 10° long — apparently connected to a jet from the nucleus; shape and intensity distribution of coma clearly asymmetric; w/ 1×60 monocular, coma had $m_1 = 0.7$ (Ref: Y; MM: B) [GRA04]. Mar. 27.09: tail straight and somewhat narrower than during the previous night [SKI]. Mar. 27.14: straight jet ~ 7′ long visible from the nucleus in direction of tail; the nucleus also connected to a bright fan-shaped nebulous region (~ 1′ in size) in the direction opposite to the jet; the inner coma (~ 30′ in size) was clearly asymmetric; observed in morning twilight [GRA04]. Mar. 27.23: w/ naked eye, 85′ coma, DC = 6, 17° tail [DAH]. Mar. 27.27: "tonight, C/1996 B2 is far and away the most spectacular comet I have ever seen; considering its combination of celestial position, dimensions, and brightness, the naked-eye view must rival or surpass that of any previous great comet for many centuries into the past; the comet's head is fully twice the size of the full moon and situated very near Polaris; it is the most obvious object in the entire heavens; the tail is so long that it can not be taken in w/ a single glance, stretching from Polaris to where it is lost in the gegenshien in Virgo!; w/ 41-cm L (70×), the tailward jet is much weaker, although still very obvious; the bright sunward fan has widened to fully 180° in width; the background just beyond the W edge of the fan seems much darker than elsewhere w/in the coma; a huge arch of bright material curls sunward from the nucleus and then back along the W side of the tail; a vague clockwise spiral pattern is strongly suggested in all the coma features and strongly reminds me of my views of the structure seen in comet C/1969 Y1 (Bennett) in Apr. 1970" *(see drawing on page 117)* [BOR]. Mar. 27.43: the 'spine' is weaker than on previous nights, but there is prominent jetting activity w/in the central coma; the overall appearance is reminiscent of the classic 19th-century drawings of inner-coma detail (*e.g.*, 109P/Swift-Tuttle, *etc.*) [HAL]. Mar. 27.87: fan-shaped coma in front of the comet nucleus; nucleus passed close to a faint star at 21^h04^m UT; w/ 15.0-cm L (32×), 40′ coma, DC = 6, tail in p.a. 61° [THO03]. Mar. 27.97: w/ naked eye, m_1 ~ 0.5 [MOR07].

Mar. 28.08: "41-cm L (70×) indicates sharp stellar nucleus of mag 8.2; the sunward fan is several arcmin high and spans nearly 180° in p.a. and has a brighter but less-wide fan w/in it!; at 57×, evidence of at least two separate layers of brightness (hoods) are apparent w/in the sunward portion of the coma; the nucleus and fan remain of a twany hue, while all the remaining coma is bluish in color; 8-day-old moon is in the sky" [BOR]. Mar. 28.19: tail easily seen for 15° and not very difficult to 35°; the last 15° of tail were very difficult [DAH]. Mar. 28.22: first-quarter moon in sky, also some cirrus; the 'spine' and jetting structure are weaker than before [HAL]. Mar. 28.91: w/ naked eye, m_1 ~ 1.5 [MOR07]. Mar. 28.94: apparently-stellar central cond. of mag 3.2 (Ref: Y) [GRA04]. Mar. 28.98: innermost 4°-5° of tail easily seen (rest of it was faint) [SKI].

Mar. 29.10: only innermost 15° of tail easily visible [HIL02]. Mar. 29.13: dust tail ~ 2° long in p.a. 45°-60° [SCH04]. Mar. 29.15: some thin clouds [DAH]. Mar. 29.88: w/ 15.0-cm L (32×), 25′ coma, DC = 6, tail in p.a. 55° [THO03]. Mar. 29.93: w/ naked eye, $m_1 = 2.0$ (Ref: SP), 4° tail [MOR07]. Mar. 29.94: w/ 8-cm f/7 R (20×), 20′ coma, DC = 6, 4° tail in p.a. 45° [CLE]. Mar. 30.02: w/ 10×50 B, 21′ coma, DC = 6, 3°.5 tail in p.a. 45° [CLE]. Mar. 30.83: dust tail ~ 4° long in p.a. ~ 45° [BUS01]. Mar. 30.86: dust tail ~ 2° long in p.a. 40°-55°; starlike cond. with fan-like streamers in sunward direction, weak dust tail 7′ long in p.a. 180° [SCH04]. Mar. 30.88: dust tail 1.5° long in p.a. 45°-60°; starlike central cond. of mag 5.8 with fan-like streamers in sunward direction; w/ 20.0-cm L (42×), short, sharp gas tail no longer seen [SCH04]. Mar. 30.88 (and 31.88): w/ 11×80 B, 20′ coma, DC = 6, tail in p.a. 53° (48°) [THO03]. Mar. 30.96: w/ naked eye, m_1 ~ 2.1 [MOR07]. Mar. 31.06: "w/ 41-cm L (70×), the tail is much brighter N of its central axis; the tailward jet (the root of the ion tail?) is extremely weak now; there is an obvious outflow of bright material from the nucleus sunward, which then sweeps back into the N side of the tail (exactly the opposite of what was apparent on Mar. 28 and

earlier; we now have crossed the comet's orbital plane)" [BOR]. Mar. 31.94: w/ 8×23 B, $m_1 \sim 2.4$ [MOR07]. Mar. 31.96: w/ 10×50 B, 18′ coma, DC = 6, 3°.8 tail in p.a. 45° [CLE].

Apr. 1.21: w/ 20-cm f/10 T (185×, 225×), three fountains or jetting structures on sunward side and a 5′ tailward jet, giving coma a very distinct pinwheel shape; nuclear cond. is large (2′) and the bright, starlike, 7th-mag feature seen previously is not as evident [SPR]. Apr. 1.86: tail appeared somewhat broader than before [GRA04]. Apr. 1.88: w/ 15×80 B, $m_1 \sim 2.1$, 2° tail [MOR07]. Apr. 2.08: w/ 7×50 B, coma dia. ∼ 15′, DC = 6, 3° tail [WAR]. Apr. 2.84: w/ 15×80 B, $m_1 \sim 2.1$, 3° tail [MOR07]. Apr. 2.87: tail narrow (width < 0°.5) [HIL02]. Apr. 3.05: "41-cm L (70×), coma dia. 7′, DC = 7; nucleus growing brighter, now of mag 7.1 (Ref: HS); sunward bright sector or fan has strong orange-yellow tint; the fan's sunward boundaries have almost completely melted into surrounding coma; only anti-solar edge of fan is well-defined; a Lumicon Swan-band comet filter suppresses nucleus but does not alter appearance of remaining coma; tonight two columns of bright material rise sunward from the nuclear region and arch back tailward in opposite directions (one to each side of the tail); tailspine can only be glimpsed tonight" *(drawing below)* [BOR]. Apr. 3.95: observed during the partial phase of lunar eclipse (for totally-eclipsed Moon, $m_1 = -1.0$ on Apr. 4.007) [SKI]. Apr. 3.86: w/ 8-cm f/7 R (20×), 7′.2 coma, DC = 6, 3° tail in p.a. 45° [CLE]. Apr. 3.96: w/ 15×80 B, $m_1 \sim 3.0$, 2°.5 tail [MOR07]. Apr. 3.99: during total lunar eclipse [ZAN01]. Apr. 4.00: during total lunar eclipse [COM]. Apr. 4.01: observed during total lunar eclipse, but w/ heavy cirrus (for eclipsed Moon, $m_1 = -1.5 \pm 0.5$ on Apr. 4.011) [GRA04]. Apr. 4.08: fanned dust tail spans p.a. 30°-60° [SHA04]. Apr. 4.23: "w/ an 8-cm f/3.7 R (19×), the coma had a very bright, solid central cond. w/ two small veil extensions on either side and a short tailward, fan-tailed spike; the S sunward veil is much brighter than the N-side veil" [SPR]. Apr. 4.88: w/ 15×80 B, $m_1 \sim 3.0$, 3° tail [MOR07].

Apr. 5.01: $m_2 = 7.9$ (ref: S); strong moonlight [GRA04]. Apr. 5.80: a lens of focal length −333 mm was used for the m_1 estimate, in which the comet appeared stellar [MIK]. Apr. 5.85: central cond. of mag 3.2 (ref: Y) [GRA04]. Apr. 5.86: w/ 15×80 B, $m_1 \sim 2.9$, 5° tail [MOR07]. Apr. 5.86: tail straight and quite narrow (bright for 2° and well seen for 4°) [GRA04]. Apr. 5.95: $m_2 = 7.7$ (Ref: S); bright moon [GRA04]. Apr. 6.84: photometry obtained w/ a slightly-defocussed 65-mm lens at f/3.5 (+ V filter + CCD) [MIK]. Apr. 6.86: very fine sight in 10×50 B; innermost 2° of tail bright, seen w/o difficulty for 4°; width at 4° was 45′; no sharp boundary between coma and tail; w/ naked eye, central cond. of mag 3.1 (ref: Y) [GRA04]. Apr. 7.79 and 9.79: fan tail spans p.a. 30°-60° [BAR]. Apr. 7.85: w/ naked eye, 10° tail [VET]. Apr. 8.18: w/ 8-cm f/3.7 R (19×), coma had a very bright, solid central cond. w/ two small extensions on either side and a short, tailward, fan-tailed spike [SPR]. Apr. 9.06: w/ 7×50 B, tail 7°.2 long in p.a. 49° [BOR]. Apr. 9.79: w/ 7×50 B, 5° tail in p.a. 46° [VEL03]. Apr. 9.84: very difficult conditions due to clouds and strong haze; comp. stars ϵ Per and ζ Per (β Per = Algol was undergoing an eclipse) [GRA04]. Apr. 9.86: w/ 15×80 B, $m_1 \sim 2.7$, 4° tail [MOR07].

Apr. 10.96: w/ 15.0-cm L (32×), 12′ coma, DC = 7, 1°.4 tail in p.a. 46° [THO03]. Apr. 11.00: alt. 10° [GRA04]. Apr. 11.06-11.07: w/ 10×50 B, innermost 2° of tail easily visible (the rest was quite difficult); head of comet parabolic in shape, and coma dia. is width of comet at central cond. ⊥ direction of the tail; ∼ 1° behind central cond., tail width 25′ [DAH]. Apr. 11.15: the given tail lengths on this and several subsequent obs. are lower limits; there were hints on some nights that an extremely faint tail was visible for a considerable longer distance, but it is difficult to determine if this was an actual tail or simply a rich star field (this region was located w/in the Milky Way) [HAL]. Apr. 11.85: dust tail ∼ 4° long [BUS01]. Apr. 11.89: tail easily seen for 3° and seen w/o difficulty for a further 10°; it appeared slightly curved

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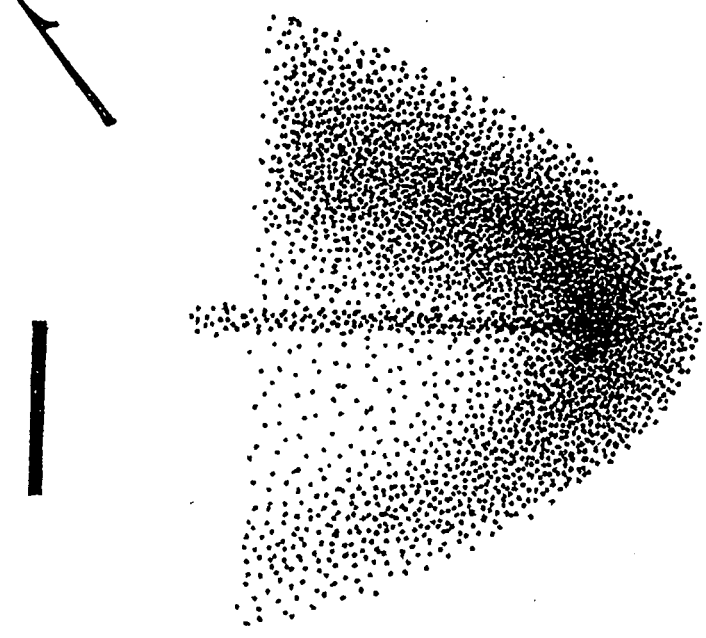
Below: *Drawing of C/1996 B2 (Hyakutake) on 1996 Apr. 3.05 by John E. Bortle of Stormville, NY (41-cm reflector); arrow points north (up), and short bar to its lower right denotes a length of ∼ 15′ (see text above).*



◇ *Comet C/1996 B2 (Hyakutake) [descriptive information cont. from page 121]* ⟹

toward E; w/ 10.2-cm *f*/15 R (60×), several streamers seen and outer boundary of blue-green coma appeared shaped like a parabola [SKI]. Apr. 11.89: width of tail 10′ near coma; width at 11° from coma was ~ 2°; tail curved slightly towards E [HIL02]. Apr. 11.90: "w/ naked eye, comet showed apparently stellar central cond. of mag 3.4 (ref: Y); no clear coma; tail clearly seen for 12°, visible to near the fine open cluster NGC 1528; W edge of the tail appeared more sharply defined (gas component?) than the E side (dust tail?)" [GRA04]. Apr. 12.00: "sunward part of comet shaped like a parabola and I could not distinguish coma from tail; the 'coma' dia. was measured ⊥ radius vector along a line through the nucleus; tail near nucleus appeared fan-shaped from p.a. 36° to 56° and was brighter along the edges of the fan;" alt. of comet 10° [GRA04]. Apr. 12.81 and 14.81: fan tail spans p.a. 25°-45° [BAR]. Apr. 12.91: tail easily seen for 3°, and in 7×50 B was not difficult to 7°; coma was difficult to measure, as there was no clear distinction between the coma and the inner tail; observed through thin cloud layer [SKI].

Apr. 13.20: w/ 20-cm T (185×), the comet continued to show considerable jet activity; tailward jet was still evident but very weak, leading directly into the main part of the tail; three other areas of jetting activity were noted, the most prominent being on the sunward side; stellar nucleus of mag 7.6; w/ 7×50 B, the innermost 2° of the tail was very bright, seen w/o difficulty for some 15° (despite the comet entering into a zone of heavy light pollution) [SPR]. Apr. 13.89: w/ 7×50 B, tail well seen for 4°, the E boundary (apparently the dust tail) curved weakly towards E and was visible for 6° in (its W boundary was nearly straight) [SKI]. Apr. 13.89: w/ 10×50 B, tail very bright for 2°, bright for 4°, easily seen to 8°; tail consisted of a straight, quite narrow gas tail visible for 20°, and a broader, more diffuse dust tail 7° long; dust tail curved somewhat toward E and its width was up to 1°-1.5°; some regions of the outer gas tail appeared brighter (*e.g.*, at ~ 17° from coma); w/ naked eye, central cond. of mag 3.4 (ref: Y) [GRA04]. Apr. 13.91: tail apparently curved toward E (the innermost 3° was bright); to 7°, it was directed towards p.a. 46°, the next ~ 2° was very faint, while the outer parts appeared ||, shifted by ~ 2° towards N (p.a. 42° at the end) [HIL02]. Apr. 14.80: w/ 11-cm L (56×), star-like nucleus of mag 4.7: [BAR06]. Apr. 14.88: w/ naked eye, tail bright for 5° and clearly seen for another 2°; E part of tail (dust component) curved towards E; w/ 10×50 B, tail very bright for 5° and clearly seen to 12°; outer part of tail appeared broader than last night; w/ naked eye, central cond. of mag 3.2 (ref. Y) [GRA04]. Apr. 14.90: tail very bright to 4° from coma; at distance of ~ 8°, it was faint, but bright at ~ 12°; the tail (gas component) appeared to be split in two || parts, the longest component located ~ 2° N of the other part [HIL02]. Apr. 14.90: tail curved towards E; tail more prominent to naked eye than during previous two nights [SKI].

Apr. 15.83: greenish-blue coma [MEY]. Apr. 15.90: comet appeared considerably brighter than on previous night; in 7×50 B, couple of streamers seen near coma [SKI]. Apr. 16.08: w/ 33.3-cm L (200×, 500×), a thin bright ray extended out of the nuclear cond. toward p.a. 310°; it was ~ 1′.5 long and suddenly curved near top as it reached edge of the coma; this coma edge was brighter than the opposite side and seemed an extension of a bright cap on sunward side of the cond.; tail extended toward p.a. 40° [KRO02]. Apr. 16.83: "coma significantly weaker and less condensed than yesterday (obs. through cirrus)"; w/ 9×63 B, 6′ coma, DC = S7, tail ~ 5° long [KAM01]. Apr. 16.89: w/ 10×50 B, DC = 6, 5° tail in p.a. 39°; w/ 35-cm *f*/5 L (70×), coma dia. 10′ [BRO04]. Apr. 16.90: comet clearly brighter than two nights ago; two tail components visible in 10×50 B; dust tail 6.5° long and curved somewhat towards E, its width at the end ~ 1.2°; gas tail straighter, its width in the outer regions ~ 1° (rather bright for 6°, clearly seen to 9°); w/ naked eye, central cond. of mag 2.9 (ref: Y) [GRA04]. Apr. 17.04: coma larger and brighter tonight (outburst); tail longer and more pronounced; anti-tail spike seen in p.a. 218°; coma brighter w/ Swan-band filter [SHA04]. Apr. 17.08: w/ 33.3-cm L (200×, 500×), nucleus no longer round, but appeared oval at first look; the brightest portion of this oval was actual location of nuclear cond., so that the apparent dust extension protruded toward p.a. 0°; tail extended toward p.a. 35° [KRO02]. Apr. 17.12: tail is split as seen in 10×50 B [HAL]. Apr. 17.88: hazy sky; obs. interrupted by clouds [GRA04]. Apr. 17.89: aurora visible from time to time; somewhat hazy sky [SKI].

Apr. 18.08: w/ naked eye, m_1 = 2.2, tail 10° long; w/ 33.3-cm L (200×, 500×), "at first glance, I was struck by appearance of a rather bright tail spine, which hadn't been this pronouced during last couple of days; in fact, I had only suspected it since the 15th; closer examination revealed a cloud of material centered at p.a. 30° that still seemed attached to the nuclear cond. and extended ~ 1′.5; the tail extended toward p.a. 35°; the cloud of material was not fan-shaped, but appeared as a rather faint, diffuse, ill-defined mass; it seemed almost equally distributed on either side of the spine; the spine was 5′ long and seemed centered within the tail (*i.e.*, it extended toward p.a. 35°; the cap seemed less pronounced than on previous days, but the coma was still brightest on the sunward side and the NW, N, and NE sides" [KRO02]. Apr. 18.79: very sharp, small, 8′ parabolic coma [BAR06]. Apr. 18.82, 19.81, 20.81, 21.81: photometry obtained with 35-mm *f*/2.8 lens + ST-6 CCD + *V* filter [MIK]. Apr. 18.88: no tail visible due to strong haze [HIL02]. Apr. 19.04: w/ 10×50 B, the coma is tiny and contains a very strong pseudo-nucleus of mag 4.7; w/ 41-cm L (70×), coma dia. 1′.4, DC = 8; comet's head is very small but contains an intense nucleus that looks like a tiny, brilliant planet; the nucleus has a yellowish cast to it [BOR]. Apr. 19.12: hint of a longer tail is especially strong on this occasion; if real, 'true' tail length is 47° [HAL]. Apr. 19.81: fan tail spans p.a. 23°-43° [BAR]. Apr. 19.83: obs. in deep twilight (faintest star visible to naked eye near comet was of mag 3.5); central cond. of mag 4.5; w/ 20.3-cm *f*/10 T (50×), 3′ coma, DC = S8 [KAM01]. Apr. 19.90: obs. somewhat affected by clouds [GRA04]. Apr. 19.90: solar alt. −16° [HIL02]. Apr. 19.95: maximum width of tail was 1°.5 [HIL02]. Apr. 20.81: w/ naked eye, fan tail spans p.a. 25°-35° [BAR]. Apr. 20.93: m_1 value uncertain due to low alt. and the redness of the comparison star (β And); main tail visible for 29°, but a second, straight filament (~ 1° wide near coma and 1°.5 wide near end) was seen from ~ 33° to 43° from the coma, || to the main tail and starting ~ 3° N of this tail [HIL].

Apr. 21.19: w/ 8-cm *f*/3.7 R (19×), coma had a very bright solid central cond. w/ two small veil extensions on either side; N side of tail was brightest and there was a distinctive twisted knot ~ 1° back of the coma [SPR]. Apr.

21.80: star-like central cond. of mag 4.1:; bright conical outflow from nucleus in direction of tail [BAR06]. Apr. 21.85: dust tail ~ 5° curved; yellow coma [BUS01]. Apr. 22.03: w/ 10×50 B, tail 10° long in p.a. 42°; the head of the comet appears essentially stellar, w/ just a trace of surrounding haze; 41-cm L (57×) shows it as a strikingly brilliant little planet ~ 5″ in dia., when compared w/ nearby Mercury; the very small, hazy, 1.′0 parabolic coma that surrounds nucleus is incomparably fainter than it and contributes nothing of significance to comet's total mag; at 70×, coma dia. 0.′9, DC = 8/ [BOR]. Apr. 22.79: star-like central cond. of mag 3.7:; two bright streamers from central cond. in direction of tail [BAR06]. Apr. 23.80: star-like central cond. of mag 3.8:; w/ 11-cm L (90×), disk-like central cond. of dia. 3′, DC = D6; w/ 3.0-cm R (6×), 6′ coma, DC = S8, tail ~ 3° long [BAR06]. Apr. 24.10: bright twilight, very low alt.; also, quite a bit of cirrus clouds in vicinity; obs. brief (2-3 min) [HAL]. Apr. 24.83: strong twilight (faintest naked-eye star near comet was of mag 0.5); central cond. of mag 3.5 [KAM01]. Apr. 24.85: yellow coma [BUS01]. Apr. 25.03: 10×50 B show the coma as completely star-like; comparison stars' altitudes not greatly different from that of comet, so extinction should not be serious factor; w/ 15×80 B, coma seen to be not more than 1′ in dia.; tail is narrow, straight cone of light that appears evenly illuminated across its width [BOR]. Apr. 25.18: very low on horizon, in strong twilight and haze [SPR]. Apr. 25.84: w/ 6.7-cm *f*/5 R (14×), yellow/orange coma of dia. ~ 2′, DC = 7, tail 1.°5 long; m_1 = 2.9 (MM = aS) [BUS01]. Apr. 26.83: comet very low (alt. 5°), comp. stars at same alt. [BIV]. Apr. 26.86: solar alt. −10°; comet alt. 4.°9; comet clearly fainter than Mercury [SKI]. Apr. 26.87: comet alt. ~ 4.°5; solar alt. −10.°5; comet considerably fainter than Mercury (m_τ ~ 1.5) and not visible to the naked eye; principal comparison star was 41 Ari (V = 3.63), at nearly same alt. as comet; coma looked like diffuse star; despite bright sky background, inner tail clearly visible [GRA04]. Apr. 27.86: comet alt. 3.°9, in nautical twilight at solar elongation only 13.°2; comet 0.3 mag brighter than γ Tri (alt. 9.°2) and slightly brighter than 27 Tau (alt. 7.°8); Mercury faintly visible to naked eye [SKI]. Apr. 28.02: comet briefly viewed w/ 15×80 B as completely-starlike body, situated only 12° from sun and very low (4.°2 up) over W horizon in very bright twilight; mag necessarily somewhat approximate [BOR].

May 1.15: search conducted at sunset; mediocre sky transparency; searches also conducted w/ 10×50 B and 10×70 B [HAL]. May 1.76: search conducted during daylight; search also conducted w/ 10×50 B [HAL]. May 2.58: comet looked for in daytime w/ special device designed for viewing of daylight comets; nothing detected [BOR]. May 14.81 and 17.81: cloud restricted obs. of tail [SEA]. May 15.81: in 10×50 B, DC = 8-9, 2.°7 tail in p.a. 215° [SEA]. May 21.80: w/ 10×50 B, 3° tail in p.a. 220°; little changed using Swan Band filter, but through 25×100 B (w/ filter), a faint 'halo' was visible, extending just beyond the parabolic coma; pseudo-nucleus intense and slightly yellowish in color [SEA]. May 23.75: w/ 7.8-cm *f*/7 R (30×), 1.°5 tail [JON]. May 23.81: w/ 2.5×25 B, coma dia. 2′, tail 3°-3.°5 long in p.a. 225° [SEA]. May 24.81: coma strongly condensed w/ greenish hue [PEA]. May 25.34, 28.34, and 30.34: comet fainter w/ Swan-band filter [DEA]. May 25.81: parabolic-shaped coma/tail; brighter spine in W edge of tail [PEA]. May 26.33: w/ 10×70 B, 8.″3 coma, DC = 9 (nuclear region like a planet); 1.°7 tail in p.a. 218° [DEA]. May 26.75: w/ 7.8-cm *f*/7 R (30×), DC = 6; 1.°5 tail in p.a. 215° [JON]. May 27.33 and May 30.34: w/ 10×70 B, 16.″7 coma, DC = 9 (nuclear region like a planet); tail in p.a. 218°; w/ Swan-band filter, comet fainter and (May 27) more diffuse [DEA]. May 28.34: w/ 10×70 B, 14.″0 coma, DC = 9 [DEA]. May 28.79: w/ 2.5×25 B, coma dia. 2′, tail 3.°3 long in p.a. 218° [SEA]. May 29.79: w/ 2.5×25 B, coma dia. 2′, tail 2.°6 long in p.a. 220° [SEA]. June 9.79: w/ 10×50 B, coma dia. 10′, tail ~ 0.°5 long [SEA]. June 19.81: parabolic-shaped coma moderately condensed; first 0.°3 of tail quite bright [PEA]. June 19.82: w/ 10×50 B, coma dia. 10′, tail ~ 2.°5 long [SEA]. June 20.82: coma elongated in direction of tail [PEA].

◇ *Comet C/1996 J1 (Evans-Drinkwater)* ⟹ 1996 May 15.20: poor seeing [HAL]. June 16.16: poor sky cond. [HAL].

◇ *Comet C/1996 N1 (Brewington)* ⟹ 1996 July 8.18: while this may be partially due to the varying instruments, comet clearly appears more condensed than it did two nights earlier [HAL]. July 11.09: rather diffuse, circular coma; observed in late twilight [BOR]. July 16.90: significantly brighter than expected, easy object despite low alt., well condensed, no false nucleus visible [KAM01].

◇ *Comet 6P/d'Arrest* ⟹ 1995 July 31.58: interference from star of mag 11 [CAM03].

◇ *Comet 18P/Perrine-Mrkos* ⟹ 1995 Sept. 27.0: comet was not detected w/ 19-cm *f*/4 flat-field camera (+ hypered Tech Pan 4415 film), w/ good sky conditions, limiting stellar mag 18 (or better); search spanned from $\Delta T = 0$ to +7.5 days [Eraldo Guidolin, Galliera Veneta, Italy]. Oct. 25.22: all searches were attempts at a visual recovery; the given limiting magnitude is for an area of ~ 10′ radius centered on the comet's expected position; in addition, searches were conducted at 72× over a range in ΔT of ~ ±1.5 days to a limiting m_1 ~ 12.0 [HAL].

◇ *Comet 22P/Kopff* ⟹ 1996 Feb. 17.77: w/ 43-cm *f*/4.5 L (160×), $m_1 \simeq 12.5$, 2′ coma, DC = 1; cloud prevented m_1 est. [CLA]. Feb. 19.51: 22P was in low-power field w/ 65P/Gunn [HAL]. Mar. 28.12: no enhancement w/ Lumicon SB-Filter; only seen w/ averted vision [MEY]. Apr. 14.59 and May 9.54: comet a little enhanced using Swan band filter [SEA]. Apr. 19.56: some interference from stars [SEA]. Apr. 27.46: in low-power field w/ M17 [HAL]. May 16.99: very diffuse coma [BAR06]. May 19.01: difficult obs., extremely diffuse coma [BAR06]. May 20.41: central cond. of mag 10.2 and dia. < 3″; inner coma slightly asymmetrical toward p.a. 68° [ROQ]. May 23.40: obs. affected by nearby bright star [HAL]. May 24.78: comet located quite close to pair of 9th-mag stars that may have affected coma-dia. est. [PEA]. May 27.33: central cond. of dia. 2″ and mag 13.0; extended coma irregularly asymmetrical along axis through p.a. 60°-240° [ROQ]. May 28.43: obs. somewhat affected by cirrus clouds [HAL]. June 1.29: central cond. of dia. 4″ and mag 13.0; coma showed a slight asymmetry toward p.a. 75° [ROQ]. June 7.29: central cond. of mag 13.5 and dia. $\simeq$ 4″; coma symmetrical w/ no tail or other structure apparent at 550 nm [ROQ]. June 12.26: central cond. of dia. 4″ and mag 12.9; entire coma exhibited well-defined symmetry w/ no apparent tail structure [ROQ]. June 12.96: very diffuse, extended coma (possibly tail) [BAR06]. June 15.04: at 161×,

central cond. ~ 15″ in dia., containing false nucleus of mag ~ 13.5 [KAM01]. June 15.96: comet near star of mag 9 [MEY]. June 17.25: central cond. of dia. 3″ and mag 12.3; coma quite symmetrical [ROQ]. June 21.59: w/ 15.0-cm L (50×), coma dia. 3′ [WIL02]. June 22.22: central cond. of dia. 3″ and mag 12.4; coma generally symmetrical [ROQ]. June 24.19: "41-cm L (70×) shows a rather odd looking object; overall the coma is very diffuse, faint, and diaphanous but w/ roughly the central 10-15% rather suddenly quite condensed and bright; coma dia. 2′.7, DC = 5; at 170×, at heart of coma is a tiny, nearly stellar nucleus of mag ~ 13, surrounded by a small, fairly bright cond." [BOR]. June 27.22: central cond. of dia. ≃ 3″ and mag 12.2; coma symmetrical to its outer recorded limit [ROQ].

July 6.18: w/ 41-cm L (70×), 3′.3 coma, DC = 3; coma condenses rather suddenly near the center, the remainder being very diffuse; a tiny, faint knot of material is noted at the coma's center; at 170×, this knot contains a faint stellar or nearly-stellar nucleus which, together w/ the area of greatest cond., is slightly offset W of the coma's center [BOR]. July 8.23: comet difficult to see in 10×50 B due to proximity to several nearby bright stars; in turn, this makes the m_1 estimate somewhat problematical; w/ 41-cm L, coma dia. 4′ [HAL]. July 11.17: w/ 41-cm L (70×), the majority of the coma appears exceedingly faint and vague; however, the coma is very suddenly, strongly condensed very near the center; this condensed region occupies only ~ 10% (i.e., not more than ~ 0′.4) of the coma's full dia. (3′.6); DC = 6; w/ 114×, no nucleus is apparent [BOR]. July 12.17: w/ 41-cm L (70×), strong suggestion that a photometric outburst is in progress; the coma appears both more condensed and more *evenly* condensed than previously; coma dia. 3′.1, DC = 5; there is still a very weak outer coma, but the condensed region now occupies ~ 40% (~ 1′.3) of the full coma; at 170×, there is once again a minute, nearly-stellar nucleus w/in a dense knot of bright material near the heart of the coma; clearly, more bright material lies E of the nucleus than elsewhere [BOR]. July 12.96: elliptical coma of size 12′ × 4′ extended in p.a. 112°-282° [BAR06]. July 14.19: comet now easily detectable w/ 10×50 B (this was not the case previously); w/ 20×80 B, the coma is both slightly brighter and more dense than before [BOR]. July 14.96: at 166×, conspicuous central cond. 10″ in dia., but no false nucleus brighter than mag 13.5 [KAM01]. July 16.93: at 166×, central cond. w/ false nucleus having mag ~ 13 [KAM01].

◇ *Comet 29P/Schwassmann-Wachmann 1* ⟹ 1995 Oct. 20.80: w/ 25-cm *f*/6 L (+ CCD), m_1 = 13.4; comet has a diffuse coma w/ central cond., and appears to be 4-5 days after a typical outburst [T. Kojima, YGCO Chiyoda Observatory, Japan]. Oct. 21.49: low alt.; zodiacal light; crescent moon 20° away [HAL]. Nov. 1.50: vague and diffuse [HAL]. 1996 Jan. 14.34: overall appearance of comet suggests the outburst is fairly 'old' [HAL]. Feb. 20.27: comet almost stellar; at most, it appears like a small planetary nebula; there was clearly nothing of this appearance when the comet was looked for on Feb. 12 [HAL]. Feb. 23.26: the appearance is still almost stellar, although the coma appears slightly larger than it did three nights earlier [HAL]. Mar. 8.94: central cond. [COM]. Mar. 10.21: high-surface-brightness coma; coma's overall brightness profile is pretty 'flat' [HAL]. Mar. 10.599: 120-s exp. w/ 50-cm *f*/12 L (+ CCD + *I* filter) shows mag 13.3 in 44″-dia. "aperture" and mag 14.8 in 44″-dia. "aperture"; a spiral jet is brighter than the coma [H. Fukushima, National Astronical Observatory of Japan; and N. Yamamoto, Science University of Tokyo]. Mar. 13.54: TP2415 film w/ 16-cm *f*/3.8 W shows 1′ × 1′.2 coma [TSU02]. Mar. 13.554: 360-s exposure taken as on Mar. 10.599, showing mag 12.2 in 44″ aperture and mag 12.8 in 18″ aperture; comet in outburst [Fukushima and Yamamoto]. Mar. 17.34: fairly bright cond. w/in inner coma, indicative of fresh activity since the previous obs. on Mar. 10 [HAL]. Mar. 24.35: exp. w/ 1-m Schmidt telescope (+ 512×512 Tektronic CCD) of the National Observatory of Venezuela (elevation 11,000 feet) shows total coma dia. 216″, w/ matter expelled in an intense jet between p.a. 238° and 288° (maximum intensity at 269°; solar direction 281°); this jet can be seen to rotate 180° counterclockwise; what remains of a second jet is at p.a. 338°, having the same morphology as the first jet (i.e., exhibits the same sharp turn), though it is fainter, has rotated ~ 69° w/ respect to the first jet, and is already detached from the nucleus by 35″; preliminary $V = 12.9 \pm 0.15$ for the whole coma [Ignacio Ferrin, Astronomy Group, Universidad de los Andes, Merida 5101, Venezuela]. May 7.14: there again appears to have been fresh activity in the inner coma (*cf.* Rauer and Bohnhardt, *IAUC* 6389) [HAL].

◇ *Comet 45P/Honda-Mrkos-Pajdušáková* ⟹ 1995 Dec. 10.07: appearance in 20-cm L similar to small, condensed globular cluster [HAL]. Dec. 12.43: enhanced w/ Swan-band filter [SEA]. Dec. 15.43: comet small and condensed; noticeably brighter w/ Swan-band filter [SEA]. Dec. 25.44: strongly condensed; brighter w/ Swan-band filter [SEA]. Dec. 27.43: w/ 25×100 B, fainter than mag 6.2; deep in twilight [SEA]. Dec. 28.07: low alt.; 1st-quarter moon in sky [HAL]. 1996 Jan. 4.05: low alt.; twilight; moonlight [HAL]. Jan. 25.53: low alt. [HAL]. Jan. 26.75: strongly enhanced w/ Swan-band filter [SEA]. Jan. 30.30 and 31.30: brighter w/ Swan-band filter [DEA]. Feb. 1.50: poor sky cond. [HAL]. Feb. 20.66: coma not circular [CLA]. Feb. 27.19: w/ 14×100 B, coma dia. 9′, DC = 2 [SHA02]. Feb. 28.19: w/ 14×100 B, coma dia. 7′, DC = 0 [SHA02].

◇ *Comet 51P/Harrington* ⟹ 1994 Sept. 29.93 and Oct. 6.03: between two stars of mag 12, made m_1 estimate difficult [REN].

◇ *Comet 57P/du Toit-Neujmin-Delporte* ⟹ 1996 July 24.78: in outburst *(predicted mag ~ 18; first reported obs. of this comet, astrometric or photometric, in over 1 yr —Ed.)* [NAK01].

◇ *Comet 58P/Jackson-Neujmin* ⟹ 1995 Nov. 21.43: comet close to star of mag 10; some clouds present [CAM03]. Nov. 23.51: comet large and diffuse w/ extremely low surface brightness [CAM03].

◇ *Comet 65P/Gunn* ⟹ 1996 Jan. 21.54: obs. hurried due to encroaching twilight; a suspect was identified but could not be verified as the comet until observed on Jan. 25 [HAL]. Jan. 24.53: comet suspect not verified until re-observed the following morning [HAL]. Feb. 19.51: in low-power field w/ 22P/Kopff [HAL]. June 16.19: comet located 5′ from M80 [HAL]. June 23.35: poor sky cond.; low alt. [HAL].

◇ *Comet 67P/Churyumov-Gerasimenko* ⟹ 1995 Oct. 19.25: estimate is of a candidate, which turned out to be a close pair of very faint stars [HAL]. 1996 Mar. 7.81: comet over star [COM].

◇ *Comet 73P/Schwassmann-Wachmann 3* ⟹ 1995 Oct. 11.08: clearly a renewed outburst; in 20-cm L, comet appears as a miniature 'great comet' [HAL]. Oct. 13.04: w/ 15-cm *f*/8 L (50×), brighter teardrop shape of mag ~ 10 near stellar core; tail much brighter for 5′, then fainter for 1° and clearly a little brighter along N edge *(see drawing below)* [WIL02]. Oct. 13.07: w/ 41-cm *f*/4 L (72×), 0°.75 tail in p.a. 116° [HAL]. Oct. 16.93: fainter w/ Swan-band filter; seen through faint clouds [DEA]. Oct. 17.42: w/ 25.4-cm L (114×, 190×), tail and spine appeared bent very close to false nucleus; bright extension of matter (which was fainter using Swan-band filter) behind nucleus (which was more distinct w/ Swan-band filter), fading out into spine; m_1 fainter w/ Swan-band filter [SEA]. Oct. 19.08: in 41-cm L, two fans extend from the coma, one on each side of the main tail [HAL]. Oct. 19.44: poor conditions; w/ 25.4-cm L, comet more diffuse at 190× than at 114×; w/ Swan-band filter, coma reduced a little and tail hardly visible [SEA]. Oct. 19.92, 22.97, 23.93, 24.93, 25.93, 26.93, and Nov. 9.93: fainter w/ Swan-band filter [DEA]. Oct. 22.99: comet at 5° alt., some twilight; parabolic coma; $m_2 \simeq 10$ [MOD]. Oct. 23.44: bright spine behind head (type-I tail) down center of dust tail; dust tail relatively fan-shaped w/ suggestion of dust "rays" [SEA]. Oct. 26.38: w/ 31.7-cm *f*/5 L (64×), 2′.5 coma, 0°.3 tail in p.a. 95° [JON]. Oct. 26.45: "bright ray (ion tail) > 8′ at p.a. 90° along S boundary of main tail; main tail broader than previously; comet little changed w/ Swan-band filter" [SEA]. Oct. 27.00: fan-shaped tail spans p.a. 38°-53° [SHA04]. Oct. 28.97: comet unchanged w/ Swan-band filter [DEA]. Oct. 29.00: fan-shaped tail spans p.a. 75°-90° [SHA04]. Oct. 30.00: nucleus appeared less condensed than previously; "stellar" center not evident [SHA04]. Oct. 31.43: m_1 estimate very difficult because it was hard to distinguish between coma and tail; coma small, first several arcmin of tail very intense; w/ 25.4-cm L (71×, 114×, 190×), comet spectacular; small false nucleus visible; comet fainter w/ Swan-band filter [SEA].

Nov. 7.46: tail very bright for ~ 8′ [SEA]. Nov. 8.08: low alt., bright moonlight; the comet is in field w/ M70, in almost the same position occupied by C/1995 O1 at discovery [HAL]. Nov. 8.93 and 10.94: slightly fainter w/ Swan-band filter [DEA]. Nov. 15.42: poor conditions; longest tail segment in p.a. 97°; tail fan extends back to ~ 90° [SEA]. Nov. 20.09: w/ 41-cm *f*/4 L (72×), 0°.42 tail in p.a. 83° [HAL]. Nov. 20.95: slightly brighter w/ Swan-band filter [DEA]. Nov. 21.42: comet involved w/ star of mag 6; first 15′ of tail bright and intense [CAM03]. Nov. 21.95: w/ 10×70 B, m_1 = 8.3 (Ref: S), 4′.4 coma, DC = 4, 16°.8 tail in p.a. 89°; comet unchanged w/ Swan-band filter; star of mag 6.3 near comet troublesome [DEA]. Nov. 22.42: comet seemed headless (tail and coma blended into single streak of light similar to an edge-on galaxy); tail still intense in surface brightness for the first 15′, then fans out into a broad, faint tail for a further 15′ [CAM03]. Nov. 24.10: in 41-cm L, a broad anti-tail accompanies the main tail; the anti-tail itself is rather sharp, but is encased w/in a broader, fainter sheath [HAL]. Nov. 24.47: difficult to distinguish coma from brighter section of tail; appeared similar to lenticular galaxy; comet little altered (possibly even slightly brighter) w/ Swan-band filter [SEA]. Nov. 30.48: comet very near star of mag 7.7 [SEA]. Dec. 10.10: the main tail and anti-tail are connected by material on the S side of the coma, creating the appearance of a broad fan; to some extent, this appearance was maintained throughout the rest of the comet's apparition [HAL]. Dec. 12.44: comet appeared like edge-on galaxy w/ central bulge; fainter w/ Swan-band filter; anti-tail brighter than main tail [SEA]. Dec. 29.09: moonlight [HAL]. 1996 Jan. 8.07: overall appearance is that of a vague, amorphous fan [HAL].

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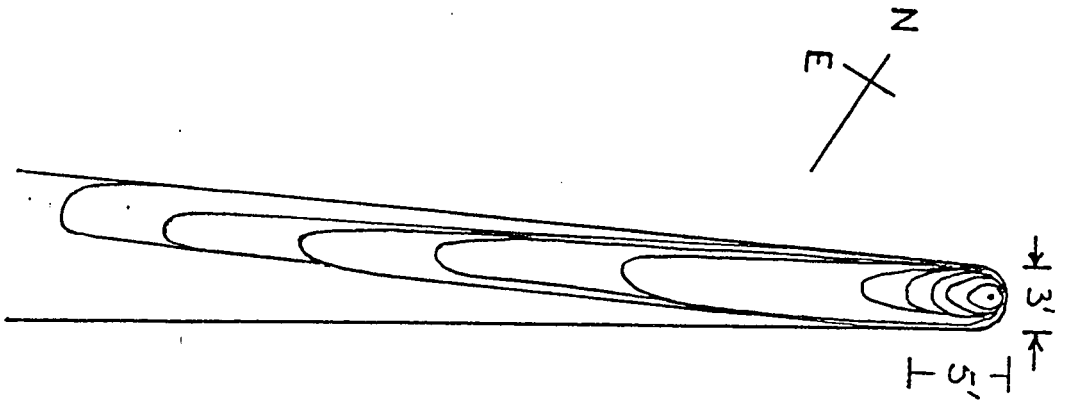
Below: *Drawing of 73P by Peter F. Williams (WIL02) on 1995 Oct. 13.40 (see text above).*



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◇ *Comet 91P/Russell 3* ⟹ 1996 Jan. 21: not seen, fainter than mag 23.5 (Ref: EB; MM: k) [HER02].

◇ *Comet 95P/Chiron [(2060) Chiron]* ⟹ 1996 Jan. 21.51: on all obs. during this opposition, appearance was entirely stellar to w/in the limits of seeing [HAL]. Feb. 18: w/ 43-cm *f*/4.5 L (160×), m_1 = 15.1 (MM: S; Ref: VN), coma dia. < 1′, DC = 9; starlike [CLA]. May 13.24: comet located close to a 12th-mag star and difficult to see [HAL].

◇ *Comet 116P/Wild 4* ⟹ 1996 Apr. 8.16: comet next to 10th-mag star [HAL]. Apr. 20.16: faint sunward dust trail extends 3′.24 in p.a. 283° [SCO01].

◇ *Comet 122P/de Vico* ⟹ 1995 Sept. 25.16: w/ 40.0-cm T (96×), blue-green coma [REN]. Sept. 25.40: w/ Swan-band filter, definite brightening of both coma and fan-shaped tail [SHA04]. Sept. 27.42: coma and tail visibility increased w/ Swan-band filter [SHA04]. Sept. 30.40: comet slightly brighter w/ Swan-band filter [SHA04]. Oct. 2.43, 3.43, and 7.43: tail as wide as coma [MOD]. Oct. 8.40: w/ Swan-band filter, coma appear brighter but more diffuse [SHA04]. Oct. 13.43: comet involved w/ star of mag 8.2 [MOD]. Oct. 26.45: comet alt. ∼ 19° [MOD]. Oct. 26.51: low alt.; strong twilight [HAL]. Nov. 8.06: low alt.; bright moonlight [HAL]. Nov. 10.94: round, 1′ "central" cond. located at E edge of coma [DID].

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TABULATED DATA

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

"MM" = the method employed for estimating the total visual magnitude [B = Bobrovnikoff, M = Morris, S = Sidgwick, C = unfiltered CCD integration, c = same as 'C', but for nuclear magnitudes, V = electronic observations — usually CCD — with Johnson *V* filter, *etc.* — see October 1980 issue of *ICQ*, pages 69-73]. "MAG." = total visual magnitude estimate; a colon indicates that the observation is only approximate, due to bad weather conditions, *etc.*; a left bracket ([) indicates that the comet was not seen, with an estimated limiting magnitude given (if the comet IS seen, and it is simply estimated to be fainter than a certain magnitude, a "greater-than" sign (>) must be used, not a bracket). "RF" = reference for total magnitude estimates (see pages 98-100 of the October 1992 issue, and page 60 of the April 1993 issue, for all of the 1- and 2-letter codes). "AP." = aperture in centimeters of the instrument used for the observations, usually given to tenths. "T" = type of instrument used for the observation (R = refractor, L = Newtonian reflector, B = binoculars, C = Cassegrain reflector, A = camera, T = Schmidt-Cassegrain reflector, S = Schmidt-Newtonian reflector, E = naked eye, *etc.*). "F/" and "PWR" are the focal ratio and power or magnification, respectively, of the instrument used for the observation — given to nearest whole integer (round even).

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

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

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Key to observers with observations published in this issue, *with 2-digit numbers between Observer Code and Observer's Name indicating source [07 = Comet Section, British Astronomical Assn.; 16 = Japanese observers (c/o Akimasa Nakamura, Kuma, Japan); 23 = Czech group (c/o P. Pravec and V. Znojil); 32 = Hungarian group (c/o K. Sarneczky); 39 = French observers (c/o S. Garro); 40 = Portuguese observers (c/o A. Pereira); 41 = Russian observers, c/o O.N. Pomogaev, Klimovsk; 42 = Belarus observers, c/o V. S. Nevski, Vitebsk; etc.]. Those with asterisks (*) preceding the 5-character code are new additions to the Observer Key:*

ABB	07	James Abbott, Witham, England
ALD01	07	John Aldridge, Cambridge, England
AND03	17	Krasimir Andreev, Bulgaria
*ANZ		Fabio Anzellini, Italy
APF	23	Ladislav Apfelthaler, Czech Republic
*ARN	34	Peter Arnaudov, Bulgaria
*BAG	41	V. V. Bagdasarov, Klimovsk, Russia
BAK01	32	Gaspar Bakos, Budapest, Hungary
*BAL03	42	I. I. Baluk, Belarus
BAR		Sandro Baroni, Italy
BAR06	26	Alexandr R. Baransky, Ukraine
BEA	07	Sally Beaumont, England
*BEG01	15	M. Begbie, Harare, Zimbabwe
*BER04		Anthony Beresford, Australia
BIV		Nicolas Biver, France
*BOJ01	34	Eva Bojurova, Bulgaria
BOR		John E. Bortle, NY, U.S.A.
*BOR04	37	Sergiy A. Borysenko, Ukraine
BOU		Reinder J. Bouma, The Netherland
BRO04		Eric Broens, Belgium
BRU	42	Ivan S. Brukhanov, Minsk, Belarus
BUS01	11	E. P. Bus, The Netherlands
CAM03		Paul Camilleri, Australia
CHE		G. R. Chester, VA, U.S.A.
CHE03		Kazimieras T. Cernis, Lithuania
*CHI	41	I. Chilingarjan, Moscow, Russia
CLA	14	Maurice L. Clark, Australia
*CLE	07	David H. Clegg, England
*COL03	07	Emilio Colombo, Brugherio, Italy
COM	11	Georg Comello, The Netherlands
COO02		Tim P. Cooper, South Africa
DAH	24	Haakon Dahle, Norway
DAR	38	Adolfo Darriba, Madrid, Spain
DEA		Vicente F. de Assis Neto, Brazil
DEM	23	Eduard Demencik, Slovak Republic
*DER02	37	Kat A. Derevyanko, Ukraine
DES01		Jose G. de Souza Aguiar, Brazil
DID		Richard R. Didick, MA, U.S.A.
DIE02		Alfons Diepvens, Belgium
*DOR01	40	Elmano Gurita Doria, Portugal
DVO	23	Denisa Dvorakova, Czech Republic
FEI	11	Henk Feijth, The Netherlands
FIL05	37	Alexander V. Filatov, Ukraine
GAI	07	Michael J. Gainsford, England
GAL	38	Jesus Gallego Maestro, Spain
GEY	15	M. J. Geyser, South Africa
GIL01	11	G. Gilein, The Netherlands
GOL	42	V. A. Golubev, Vitebsk, Belarus
GRA04	24	Bjoern H. Granslo, Norway
GRA06	11	G. Gravers, The Netherlands
*GRA07	34	Ivan Gradinarov, Bulgaria
GRE		Daniel W. E. Green, MA, U.S.A.
HAL		Alan Hale, NM, U.S.A.
HAL04	23	Karel Halir, Czech Republic
HAS08	16	Yuji Hashimoto, Japan
HAV		Roberto Haver, Italy
*HEA02	07	Alan Heath, Nottingham, England
HER02		Carl Hergenrother, AZ, U.S.A.
HIL02	24	Trond Erik Hillestad, Norway
*HOM	37	Vasyl M. Homyak, Ukraine
HOR02	23	Kamil Hornoch, Czechoslovakia
HUR	07	Guy M. Hurst, England
ISH03	37	Andriy S. Ishchenko, Ukraine
IWA01	16	Yoshitaka Iwaki, Japan
JOH01	11	C. Johannink, The Netherlands
JON	07	Albert F. Jones, New Zealand
JOR	34	Tatiana Jordanova, Bulgaria
KAK01	16	Wataru Kakei, Japan
KAM01		Andreas Kammerer, Germany
KAN03	16	Toshikazu Kanno, Japan
KAT01	16	Taichi Kato, Japan
KEN02		David Kenyon, CA, U.S.A.
KIE01	07	Norman S. Kiernan, England
KIN	16	Kazuo Kinoshita, Japan
KIS02	32	Laszlo Kiss, Szeged, Hungary
KOB01	16	Juro Kobayashi, Japan
*KOL04	42	K. Koloskov, Belarus
*KOL05	34	Vladimir Kolimov, Bulgaria
KON06	23	Jiri Konecny, Czech Republic
KOS	07	Attila Kosa-Kiss, Romania
KOS04	17	Denis S. Kosenkov, Russia
KRO02		Gary W. Kronk, IL, U.S.A.
*KRY02		Washington Kryzanowski, Uruguay
KUB	23	Pavel Kubicek, Czech Republic
KYS	23	J. Kysely, Czech Republic
*LAB	41	M. J. Labutin, Taldom, Russia
LAN01	11	M. Langbroek, The Netherlands
LAN03	07	James A. Lancashire, England
LEH		Martin Lehky, Czech Republic
LOO01		Frans R. van Loo, Belgium
LOU	35	Romualdo Lourencon, Brazil
MAI	37	Alexander S. Maidic, Ukraine
MAR02	38	Jose Carvajal Martinez, Spain
MCK	07	Richard McKim, England
MER		Jean-Claude Merlin, France
MEY		Maik Meyer, Germany
MIK		Herman Mikuz, Slovenia
MIT	16	Shigeo Mitsuma, Japan
*MIY01	16	Osamu Miyazaki, Ibaraki, Japan
MOD		Robert J. Modic, OH, U.S.A.
MOE		Michael Moeller, Germany
MOO05	07	Stewart Moore, England
MOR03		Warren C. Morrison, Canada
MOR04	19	Vladimir G. Mormyl, Ukraine
*MOS03	37	Yurij A. Moskalenko, Ukraine
NAG02	16	Takashi Nagata, Hyogo, Japan
NAG04	16	Kazuro Nagashima, Japan
*NAG08	16	Yoshimi Nagai, Nagano, Japan
NAK01	16	Akimasa Nakamura, Japan
NEV	42	Vitali S. Nevski, Belarus
NOW		Gary T. Nowak, VT, U.S.A.
OGA01	37	Sergei A. Ogarkov, Ukraine
OHM	16	Fumihiko Ohmori, Japan
OKS	07	Gabriel Oksa, Slovak Republic
OME		Stephen O'Meara, HI, U.S.A.
ONO	16	Osamu Onodera, Japan
*ORE	42	A. Oreshonok, Belarus
OVE	15	M. D. Overbeek, South Africa
*PAV		Hristo Pavlov, Bulgaria
PEA		Andrew R. Pearce, Australia
PER01		Alfredo J. S. Pereira, Portugal
PLS	23	Martin Plsek, Czech Republic
POD	23	M. Podzorny, Czech Republic
*POM	41	O. N. Pomogaev, Klimovsk, Russia
POP	23	Martin Popek, Czech Republic
PRY		Jim Pryal, WA, U.S.A.
PUJ01	38	Francisco Pujol (Clapes), Spain
*QUA	40	Jorge Quaresma, Portugal
RAD01	34	Veselka Radeva, Bulgaria
RED	37	Sergei Red'ko, Kiev, Ukraine
REN		Alexandre Renou, France
ROD01		Diego Rodriguez, Spain
*ROM	42	A. M. Romancev, Belarus
ROQ		Paul Roques, AZ, U.S.A.
ROT01	23	Michal Rottenborn, Czech Republic
*RYZ	37	Igor V. Ryzhkov, Ukraine
SAN03		Sang Ho Cho, South Korea
SAN04	38	Juan Manuel San Juan, Spain

*SAN07	32	Gabor Santa, Hungary
SAR02	32	Krisztian Sarneczky, Hungary
SCH04	11	Alex H. Scholten, The Netherlands
SCH12		Richard W. Schmude, Jr., TX, U.S.A.
SC001		James V. Scotti, AZ, U.S.A.
SC004	37	Borys Skorichenko, Ukraine
SEA	14	David A. J. Seargent, Australia
SEA01	14	John Seach, Australia
*SER	42	I. M. Sergey, Belarus
SHA02	07	Jonathan D. Shanklin, England
SHA04		Gregory T. Shanos, FL, U.S.A.
*SHA06	41	F. M. Sharov, Moscow, Russia
SHI	16	Hiroyuki Shioi, Japan
SHU	42	Sergey A. Shurpakov, Belarus
SIM		Karl Simmons, FL, U.S.A.
SIM01		Wanda Simmons, FL, U.S.A.
SKI	24	Oddleiv Skilbrei, Norway
*SKI01	15	B. Skinner, Cape Town, South Africa
*SMI08	15	T. Smith, Keetmanshoop, Namibia
SOW	16	Toshihide Sowa, Japan
SPR		Christopher E. Spratt, BC, Canada
STO		Enrico Stomeo, Italy
SZE02	32	Laszlo Szentasko, Hungary
TAY	07	Melvyn D. Taylor, England
TH003	24	Steinar Thorvaldsen, Norway
TIC		Milos Tichy, Czech Republic
TRI	38	Josep M. T. i Rodriguez, Spain
TSU02	16	Mitsunori Tsumura, Japan
*VAN13	15	P. van Blommestein, South Africa
VEL02	17	Valentin Velkov, U.S.S.R.
VEL03		Peter Velestschuk, Ukraine
VET	07	J. C. Vetterlein, England
VET01	23	Marie Vetrovcova, Czech Republic
WAR		Robert Warren, IN, U.S.A.
WAT	07	R. L. Waterfield, England
WIL02	14	Peter F. Williams, Australia
YAS	16	Masanori Yasuki, Japan
YOS02	16	Katsumi Yoshimoto, Japan
YOS03	16	Hitoshi Yoshida, Japan
YOS04	16	Seiichi Yoshida, Ibaraki, Japan
ZAN01	11	W. T. Zanstra, The Netherlands
ZNO	23	Vladimir Znojil, Czech Republic

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Comet C/1958 R1 (Burnham-Slaughter)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1959 01 04.78		P	12.7:		15	R	5		1.5	2			WAT
1959 01 10.77		P	12.7:		15	R	5		1.5	2			WAT
1959 02 01.78		P	12.7:		15	R	5		1.5	2			WAT
1959 04 04.86		P	13.0:		15	R	5		0.3	4			WAT
1959 10 04		P	14.0:		15	R	5						WAT
1959 10 12.81		P	14.5:		15	R	5		< 0.2	9			WAT

Comet C/1975 V1 (West)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1976 03 04.14		S	0.5:	S	0.0	E		1		8	11	320	CHE03
1976 03 10.19		B	1.5	Y	5.0	B		7					BOU

Comet C/1977 R1 (Kohler)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1977 10 19.79		B	7.5	AC	5.0	B		15					BOU
1977 10 23.76		B	7.5	AC	8.0	B		15					BOU
1977 10 24.76		B	7.5	AC	8.0	B		15					BOU
1977 10 28.76		B	7.1	AC	8.0	B		15					BOU
1977 11 01.75	*	B	7.0	AC	8.0	B		15					BOU

Comet C/1982 M1 (Austin)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1982 08 20.9		O	4.5	AA	5.0	B		10					QUA
1982 08 23.8		O	5.0	AA	5.0	B		10					QUA
1982 08 23.9		O	5.3	AA	5.0	B		7					DORO1
1982 08 27.9		O	5.4	AA	5.0	B		7					DORO1
1982 08 28.9		O	5.9	AA	5.0	B		10					QUA
1982 08 29.8		O	5.3	AA	5.0	B		7					DORO1
1982 08 31.9		O	5.7	AA	5.0	B		7					DORO1
1982 09 01.9		O	5.8	AA	5.0	B		7					DORO1
1982 09 03.9		O	6.0	AA	5.0	B		7					DORO1
1982 09 03.9		O	6.3	AA	5.0	B		10					QUA
1982 09 05.9		O	6.5:	AA	5.0	B		10					QUA

Comet C/1988 A1 (Liller)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1988 05 06.98		S	6.2	S	4.0	B		12		6			FEI
1988 05 18.97		S	6.4	S	4.0	B		12		5			FEI

Comet C/1992 J1 (Spacewatch)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 01 21.12		k[	23.0	EB	228.6	L	2						HER02

Comet C/1993 Q1 (Mueller)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1994 01 09.41		S	9.7	AA	12.0	B		20	3	5			MIT
1994 01 15.41		S	9.8	AA	12.0	B		20	3	4			MIT

Comet C/1993 Y1 (McNaught-Russell)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1994 03 21.43		M	7.8	AA	12.0	B		20	6	3			MIT
1994 03 28.44		M	7.4	AA	12.0	B		20	7	4			MIT
1994 03 29.43		S	6.7	AA	7.0	B		10	7	5			YAS
1994 04 01.88		B	7.3	S	30.0	L	5	75	4	7			MAR02
1994 04 01.90		S	7.2	S	7.0	B		10	4	6			MAR02
1994 04 02.43		S	7.3	AA	25	L	4	28	8	4			KAK01
1994 04 02.47		M	7.2	AA	12.0	B		20	7.5	5			MIT
1994 04 02.89		S	7.3	S	7.0	B		10	3.5	5			MAR02
1994 04 02.90		B	7.3	S	30.0	L	5	75	3.5	6			MAR02
1994 04 03.43		S	7.3	AA	10.0	B		14	6	6			IWA01
1994 04 03.44		B	7.5	AA	31	L	6	60	4	5			KAN03
1994 04 03.44		S	7.3	AA	15	L	6	28	4	3			YOS03
1994 04 03.46		S	7.8	AA	15	L	5	38	5	4/			ONO
1994 04 03.49		B	8.2	S	20.3	T	10	48	4.7	5	50	m 275	NAG04
1994 04 04.49		S	7.3	AA	10.0	B		14	6				IWA01
1994 04 05.47		S	6.8	AA	10	R	6	17	10	3			KAK01
1994 04 08.88		S	7.4	S	7.0	B		10	6	5			MAR02
1994 04 08.89		B	7.5	S	33.3	L	5	75	6	6			MAR02
1994 04 11.46		S	9.5	S	25.4	T	6	62	3	3			ONO
1994 04 11.48		S	6.8	S	10.0	B		14	5	5			IWA01
1994 04 13.44		S	7.6	AA	15	L	6	28	5	2			YOS03
1994 04 13.46		S	6.7	S	10.0	B		14		5			IWA01
1994 04 14.45		S	6.8	S	10.0	B		14	4	4			IWA01
1994 04 14.46		S	7.7	AA	15	L	6	28	6	2			YOS03
1994 04 14.49		S	6.2	AA	10	R	6	17	10	4			KAK01
1994 04 16.46		S	9.2	S	25.4	T	6	62	4	3			ONO
1994 04 16.48		B	8.4	S	20.3	T	10	48	2.5	4			NAG04
1994 04 30.50		B	8.7	S	20.3	T	10	48	4.1	3			NAG04
1994 05 06.50		S	9.6	AC	20	L	6	48	3	3			YAS
1994 05 09.53		M	9.1	AA	12.0	B		20	6	3			MIT
1994 05 09.71		S	9.2	S	20.3	T	10	48	2.8	1			NAG04
1994 05 12.62		B	9.5	AA	31	L	6	56	10	1			KAN03
1994 05 20.69		S	10.2	NP	12.0	B		20	4	2			MIT

Comet C/1994 G1 (Takamizawa-Levy)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1994 05 06.68		M	8.8	AA	12.0	B		20	6	4			MIT
1994 05 09.76		B	9.1	S	20.3	T	10	48	2.3	5			NAG04
1994 05 12.64		B	8.9	AA	31	L	6	56	4	7	15	m	KAN03
1994 05 12.74		B	8.9	S	20.3	T	10	48	2.3	4/			NAG04
1994 05 18.70		S	8.5	AA	20.3	T	10	48	2.4	5/			NAG04
1994 05 20.67		M	9.1	AA	12.0	B		20	5	4			MIT
1994 05 28.54		S	8.6	AA	20	L	6	48	5	4			YAS
1994 05 28.56		B	8.1:	S	20.3	T	10	48		5			NAG04
1994 05 30.60		B	8.6	S	20.3	T	10	48	2.3	4/			NAG04

Comet C/1994 G1 (Takamizawa-Levy) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1994 06 02.73		B	8.9	S	20.3	T	10	48	2.5	5			NAG04
1994 06 14.73		B	9.2	S	20.3	T	10	48	2.2	4/			NAG04
1994 07 04.55		M	9.7	S	16.0	W	4	49					TSU02

Comet C/1994 J2 (Takamizawa)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1994 05 12.59		B	10.9	AA	31	L	6	56	2	5			KAN03
1994 05 12.71		B	9.8:	S	20.3	T	10	48	1.5	6			NAG04
1994 05 28.55		S	9.6	AA	20	L	6	67	1.5	5			YAS
1994 07 04.52		M	10.6:	S	16.0	W	4	49					TSU02

Comet C/1994 N1 (Nakamura-Nishimura-Machholz)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1994 07 10.71		B	9.2	S	20.3	T	10	48	1.6	2			NAG04
1994 07 12.70		B	9.1	S	20.3	T	10	48	2	2/			NAG04
1994 08 06.78		S	8.9	S	15	L	6	36	4	3			YOS02
1994 08 08.64		S	9.5	AA	15	L	5	38	4	2/			ONO
1994 08 09.63		S	10.4	AA	15	L	5	38	4	2/			ONO

Comet C/1994 T1 (Machholz)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1994 11 09.56		S	10.5	AC	12.0	B		20	3	2			MIT
1994 11 10.44		S	12.2	AC	44.5	L	4	167	0.9	4			MOR03
1994 11 16.45		S	12.4	AC	44.5	L	4	167	1.0	4			MOR03
1994 12 02.44		S	11.9	AC	44.5	L	4	80	1.6	4			MOR03
1994 12 03.07		S	11.7	AC	44.5	L	4	80	1.6	5			MOR03
1994 12 03.59		S	10.7	AC	25.4	T	6	50	2	2			MIT
1994 12 04.53		S	10.7	AC	25.4	T	6	50	2	2			MIT
1994 12 22.05		S	12.4	AC	44.5	L	4	80	1.7	5			MOR03
1995 01 06.00		S	12.5	AC	44.5	L	4	167	1.0	4			MOR03

Comet C/1995 O1 (Hale-Bopp)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 07 27.78		S	10.8	AC	20	L	8	83		2			COO02
1995 07 31.53		S	10.5	GA	20.3	L	7	56	1	3			CAM03
1995 08 01.11	s	S	12.1	AC	44.5	L	4	167	1.2	3			MOR03
1995 08 01.87		S	10.8	AC	20	L	8	83		2			COO02
1995 08 04.62		S	10.0:	GA	8.0	B		20	2	1			CAM03
1995 08 04.62		S	10.5	GA	20.3	L	7	56	1	4			CAM03
1995 08 14.05		S	10.4	GA	25.4	L	4	91	3	0			DID
1995 08 15.41		S	10.9	VN	31.7	L	5	64	0.7	2			JON
1995 08 16.73		S	10.7	AC	15	L	8	48	2.1	3			BEG01
1995 08 16.81		S	10.5	AC	20	L	8	83		3			COO02
1995 08 19.05		S	10.5	GA	25.4	L	4	91	3	0			DID
1995 08 19.52		S	10.9	VN	31.7	L	5	64	1	3			JON
1995 08 19.75		S	10.3	AC	15	L	8	48	3.4	4			BEG01
1995 08 20.05		S	10.2	GA	25.4	L	4	91	3	2			DID
1995 08 20.45		S	10.9	VN	31.7	L	5	64	1	3			JON
1995 08 23.47		S	10.0	GA	20.3	L	7	56	2	7	2	m 110	CAM03
1995 08 23.84		S	10.3	AC	20	L	8	83		4			COO02
1995 08 24.39		S	9.8	GA	20.3	L	7	56	3	7			CAM03
1995 08 24.43		S	10.9	VN	31.7	L	5	64		5			JON
1995 08 25.38		S	10.9	VN	31.7	L	5	64	1	4			JON
1995 08 25.86		S	10.5	AC	15	L	8	48	2.4	3			BEG01
1995 08 26.04		S	10.2	GA	25.4	L	4	91	3				DID
1995 08 26.75		S	10.5	AC	15	L	8	48	1.2	5			BEG01
1995 08 27.82		S	10.5	AC	15	L	8	48	2.4	5			BEG01
1995 08 28.86		S	10.8	AC	15	L	8	48	2.0	4			BEG01
1995 08 29.02		S	10.2	GA	25.4	L	4	91	3	0/			DID
1995 08 29.75		S	10.4	AC	15	L	8	48	2.0	4			BEG01

Comet C/1995 O1 (Hale-Bopp) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 08 30.07	s	S	12.3	AC	44.5	L	4	167	0.6	4			MOR03
1995 08 30.41		S	10.9	VN	31.7	L	5	64	1	3			JON
1995 08 31.02		S	10.3	GA	25.4	L	4	91	2	0/			DID
1995 08 31.19		S	9.8:	S	20.0	T	10	100	1.1	3			PRY
1995 08 31.89		S	10.4	AC	15	L	8	48	2.0	4			BEG01
1995 09 01.07	s	S	12.1	AC	44.5	L	4	167	0.8				MOR03
1995 09 11.75		S	10.5	AC	15	L	8	48	2.0	3			BEG01
1995 09 12.78		S	10.5	AC	15	L	8	48	2.0	3			BEG01
1995 09 19.76		S	10.5	AC	20	L	8	83		3			C0002
1995 09 20.00		S	10.4	GA	25.4	L	4	91	3	0			DID
1995 09 25.76		S	10.5	AC	20	L	8	83		6			C0002
1995 09 30.02	s	S	12.1	AC	44.5	L	4	167	1.0	3			MOR03
1995 10 10.72		S	10.3	AC	20	L	8	83		6			C0002
1995 10 11.09		M	10.9	AC	41	L	4	183					HAL
1995 10 12.06		S	12.5	HS	33.3	L	4	58	0.5	1			KR002
1995 10 12.10		M	10.8	AC	41	L	4	183					HAL
1995 10 13.79		M	10.6	NP	44.5	L	5	200	2.0	6			SAN04
1995 10 14.10		M	10.6	AC	41	L	4	72					HAL
1995 10 16.81		S	10.7	NP	21.0	L	6	100	5	5			SAN04
1995 10 19.11		M	10.1	AC	41	L	4	72	4				HAL
1995 10 21.78		S	10.3	AC	20	L	8	83		3			C0002
1995 10 22.10		M	10.3	AC	41	L	4	72					HAL
1995 10 23.02	a	M	11.0:	GA	20.0	L	5	68	1.1	3			MOD
1995 10 24.00	s	S	10.7	AC	44.5	L	4	167	0.8	4			MOR03
1995 10 24.09		M	10.2	AC	41	L	4	72					HAL
1995 10 26.41		S	10.9	VN	31.7	L	5	64	1	1			JON
1995 10 27.09		M	10.1	AC	41	L	4	72					HAL
1995 11 09.06		M	9.8:	AC	41	L	4	72					HAL
1995 11 11.06		M	10.1	AC	41	L	4	72					HAL
1995 11 13.39		S	11.2	VN	31.7	L	5	64	1	1			JON
1995 11 14.06		M	10.0	AC	41	L	4	72					HAL
1995 11 18.06		M	10.0	AC	41	L	4	72	3.5				HAL
1995 11 21.42		S	10.0	GA	20.3	L	7	56	1	2			CAM03
1995 11 23.06		S	10.0:	AC	20	L	6	122					HAL
1995 11 24.07	!	S	9.8:	AC	20	L	6	49					HAL
1996 02 10.85		S	9.0	AA	15	L	6	75	3	4			CLA
1996 02 14.53	!	S	9.4	NP	20	L	6	49	3.5	4/			HAL
1996 02 18.85		S	8.6	AA	43	L	4	60	4	6			CLA
1996 02 19.52	!	S	8.9:	NP	41	L	4	72	3	5/			HAL
1996 02 22.78		S	8.8	AA	8.0	B		20	3	3			CAM03
1996 02 23.52	!	S	9.0	NP	5.0	B		10					HAL
1996 02 23.70		S	9.1	S	31.7	L	5	64	1	1			JON
1996 02 24.69		S	9.3	GA	31.7	L	5	64	1	1			JON
1996 02 24.85		S	8.7	AA	43	L	4	92	4	5	8	m 329	CLA
1996 02 25.69		S	9.2	GA	31.7	L	5	64	2	3			JON
1996 02 27.68		S	9.3	GA	31.7	L	5	64	1.7	2			JON
1996 02 28.69		S	9.5	GA	31.7	L	5	64	1.3	3			JON
1996 02 29.52	!	S	9.0	NP	5.0	B		10	4				HAL
1996 03 02.52	!	M	9.1	NP	41	L	4	72	3.5				HAL
1996 03 07.51	!	M	9.2:	NP	41	L	4	72	3				HAL
1996 03 10.63		S	9.2	GA	31.7	L	5	64	2				JON
1996 03 11.71		S	9.6	GA	31.7	L	5	64	1	2			JON
1996 03 12.51		S	9.1:	NP	41	L	4	72	2				HAL
1996 03 16.75		S	8.5	AA	8.0	B		20	3	4			CAM03
1996 03 17.50					41	L	4	72	4	6	0.17	270	HAL
1996 03 17.50		S	8.7	NP	5.0	B		10					HAL
1996 03 19.83		M	8.9	S	25.0	L	6	47					TSU02
1996 03 20.68		S	9.6	GA	31.7	L	5	64	1.5	3			JON
1996 03 23.50		S	8.6	NP	5.0	B		10					HAL
1996 03 23.85		M	8.6	S	25.0	L	6	47	14	4			TSU02
1996 03 24.81		S	8.5	AA	15	L	6	75	4	5	10	m 330	CLA
1996 03 26.49		S	8.5	NP	5.0	B		10					HAL
1996 03 27.67		S	7.9	AA	10.0	B		25					SEA
1996 03 28.69		S	8.6	GA	7.8	R	7	30	2.5	1			JON

Comet C/1995 O1 (Hale-Bopp) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 03 29.70		S	8.6	GA	7.8	R	7	30	2.5	1			JON
1996 03 30.12		S	8.3	AA	10.0	B		14	6	6			L0001
1996 03 30.46		M	8.2	NP	5.0	B		10					HAL
1996 03 31.24		S	8.7	S	11	L	8	72	1.0	4	2 m		GEY
1996 04 01.48		M	8.2	NP	5.0	B		10					HAL
1996 04 01.77		S	7.3	AA	5.0	B		10	& 8				SEA
1996 04 07.09	&	S	8.3:	AA	11	L	7	56	4.5	2			BAR06
1996 04 12.78		S	7.9	S	15.0	R	5	25	6	4/			NAG02
1996 04 13.43		M	8.1	NP	5.0	B		10					HAL
1996 04 13.67		S	7.5:	AA	5.0	B		10	&10				SEA
1996 04 14.67		S	7.4	AA	5.0	B		10	& 9				SEA
1996 04 14.74		S	8.5	CS	7.8	R	7	30	3	1			JON
1996 04 15.70		S	8.2	SC	7.8	R	7	30	3	1			JON
1996 04 16.12		S	8.7	TI	11	L	7	32	4	5			KYS
1996 04 16.69		S	7.1	AA	5.0	B		10					SEA
1996 04 16.71		S	8.3	SC	7.8	R	7	30	3	1			JON
1996 04 17.06		S	7.7	AA	11	L	7	56	6	3			BAR06
1996 04 17.17		S	8.1	AA	8.0	B		20		0			M0005
1996 04 17.45		M	8.0	NP	5.0	B		10					HAL
1996 04 17.65		S	7.2	AA	5.0	B		10					SEA
1996 04 17.73		B	8.0	SC	8.0	B		15	4	6			SEA01
1996 04 18.05		S	7.7	AA	11	L	7	32	6	2			BAR06
1996 04 18.06		S	7.8	AA	11	L	7	56	5.5	2/			BAR06
1996 04 18.10	&	S	8.2	AA	13.0	L	6	36	4	5			MEY
1996 04 18.36					40.6	L	5	70	1.5	6	0.07	340	BOR
1996 04 18.36		S	8.0	HR	5.0	B		10	5	4			BOR
1996 04 18.58		S	7.2	AA	5.0	B		10					SEA
1996 04 19.05		S	7.8	AA	11	L	7	56	5	2			BAR06
1996 04 19.49		J	8.5	SC	25.4	T	4		2.52	s5	g0.01	48	ROQ
1996 04 19.60		S	7.1	AA	5.0	B		10					SEA
1996 04 20.08		M	8.1	TI	35	L	5	92	3	4			HOR02
1996 04 20.08		S	8.5	AA	6.3	R	13	52	6	3			KOS
1996 04 21.07		M	8.1	TI	35	L	5	92	3	3/			HOR02
1996 04 21.12		S	8.8	AA	25.2	L	4	53	7.2	6			L0001
1996 04 21.67		S	7.1	AA	5.0	B		10					SEA
1996 04 22.07		M	8.0	TI	35	L	5	92	3.3	3/			HOR02
1996 04 22.13		S	8.4	S	7.0	B		16	4	2			TAY
1996 04 22.77		M	8.6	S	12.5	L	6	23	9		10	270	TSU02
1996 04 23.06		S	7.9:	AA	11	L	7	56	& 4.5	3			BAR06
1996 04 23.07		B	8.9	HD	6	R	10	40		7			PAV
1996 04 23.09		S	8.3	AA	6.3	R	13	52	8	4			KOS
1996 04 23.27		S	8.0	AA	8.0	B		11	6.5	4			DES01
1996 04 23.79		S	7.8	AA	8.0	B		20	5.5	5			PEA
1996 04 23.97		B	8.1	VF	11.0	B		20	6	2			RED
1996 04 24.05		S	8.0	VF	8	R	10	60	5	3			ISH03
1996 04 24.06		S	7.6	AA	11	L	7	56	5.5	2			BAR06
1996 04 24.07		B	8.9	HD	6	R	10	40		7			PAV
1996 04 24.12		S	8.8	AA	10.0	B		14		6			L0001
1996 04 24.28		S	8.1	AA	8.0	B		11	6	4/			DES01
1996 04 24.46		M	8.0	SC	5.0	B		10	8				HAL
1996 04 24.75		B	7.4	AA	5.0	B		10	40	5	0.5	300	GAL
1996 04 24.75		M	7.9	AA	12.5	L	6	23					TSU02
1996 04 24.75		M	8.2	S	15.0	L	6	36	4	4	5 m	290	YOS02
1996 04 24.80		B	8.6	S	20.0	L	4	40	4	3			OHM
1996 04 25.04		B	8.7	HD	6	R	10	40	0.6	7	0.07		PAV
1996 04 25.12		M	8.3	SC	8.0	B		8		2			AND03
1996 04 25.13		S	7.4	AA	15.0	R		30	5	4			DIE02
1996 04 25.27		S	8.0	AA	8.0	B		11	5.5	4			DES01
1996 04 25.61		S	7.1	AA	5.0	B		10					SEA
1996 04 26.12		B	7.9	S	5.0	B		7	8	6			BIV
1996 04 26.25		S	8.0	AA	8.0	B		11	6	4			DES01
1996 04 26.44		J	8.0	SC	25.4	T	4		4.13	s5	1.83	348	ROQ
1996 04 26.65		S	7.1	AA	5.0	B		10					SEA
1996 04 26.77		S	7.4	S	15.0	R	5	25	6	4/			NAG02

Comet C/1995 O1 (Hale-Bopp) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 04 27.28		S	8.0	AA	8.0	B		11	6	4			DES01
1996 04 27.46		M	7.9	SC	5.0	B		10					HAL
1996 04 27.72		S	8.5	SC	7.8	R	7	30	2	1			JON
1996 04 27.76		S	7.4	S	15.0	R	5	25	6	5			NAG02
1996 04 28.05		B	8.7	AA	11	L	7	32	4	S4			VEL03
1996 04 28.05		S	8.3	AA	11	L	7	32					VEL03
1996 04 28.25		S	8.0	AA	8.0	B		11	6	4/			DES01
1996 04 29.25		S	7.8	AA	8.0	B		11	6.5	4/			DES01
1996 04 30.24		S	7.8	AA	8.0	B		11	7	3			DES01
1996 05 01.75		S	8.4	MS	7.8	R	7	30	3	1			JON
1996 05 02.78		S	7.3	S	15.0	R	5	25	6	5			NAG02
1996 05 03.44		J	8.1	SC	25.4	T	4		3.00	s5	0.27	41	ROQ
1996 05 04.17		M	8.5	AA	25.3	L	6	57					PER01
1996 05 04.17		S	8.3	AA	25.3	L	6	57	& 3	5			PER01
1996 05 06.41		J	7.7	SC	25.4	T	4		4.58	s5			ROQ
1996 05 10.07		S	8.1	AA	10	B		14	8	3			SHA02
1996 05 10.20		S	7.7	AA	8.0	B		11	8	4			DES01
1996 05 10.43		S	7.7	SC	5.0	B		10					HAL
1996 05 10.58		M	7.1	AA	5.0	B		10					SEA
1996 05 11.01		S	7.4	AA	11	L	7	56	5	3			BAR06
1996 05 11.02		S	7.0	SC	8.0	B		20	6	s3			OKS
1996 05 11.21		S	7.6	AA	8.0	B		11	8	4			DES01
1996 05 11.38		J	6.7	SC	25.4	T	4		5.05	s6	12.8s	348	ROQ
1996 05 11.50		B	7.8	AA	8.0	B		15	4	6			SEA01
1996 05 12.10		B	7.8	S	5.0	B		7	10	4			TRI
1996 05 12.14		S	7.6	AA	3.4	B		9	& 6	4			PER01
1996 05 12.20		S	7.6	AA	8.0	B		11	8	3/			DES01
1996 05 12.69		M	8.5	S	15.0	L	6	36	4	4			YOS02
1996 05 12.78		C	7.2	GA	8.0	R	6		16				NAK01
1996 05 12.78		S	7.1	S	15.0	R	5	25	5	6			NAG02
1996 05 13.06		S	8.1	S	10	B		14	4	3/			SHA02
1996 05 13.07		S	8.9	S	10	B		14	6	3			SHA02
1996 05 13.16		B	7.7	S	5.0	B		7	11	4			TRI
1996 05 13.21		S	7.6	AA	8.0	B		11	7.5	3/			DES01
1996 05 13.33		M	7.3	SC	5.0	B		10	12	5			HAL
1996 05 13.99		B	7.3	VF	8	R		60	8	3			RED
1996 05 14.01		S	7.3	AA	11	L	7	56	5.5	4			BAR06
1996 05 14.01		S	7.4	VF	8	R	10	60	10	3			ISH03
1996 05 14.18		B	7.7	S	5.0	B		7	10	3			TRI
1996 05 14.32					40.6	L	5	70	2.8	7	0.07	5	BOR
1996 05 14.32		S	7.3	AA	5.0	B		10	8	5			BOR
1996 05 14.58		S	7.2	A	5.0	B		10		1			WIL02
1996 05 14.77		S	7.0	S	15.0	R	5	25	5	5/	0.03		NAG02
1996 05 15.04		S	7.7	AA	10	B		14	6	S4	0.2	300	SHA02
1996 05 15.10		B	7.3	S	15.0	L	4		8	5	0.15		ROD01
1996 05 15.58		S	6.7	AA	2.5	B		2					SEA
1996 05 15.66		S	7.5	AA	10.5	R	7	23	6	4			HAS08
1996 05 15.69		B	7.9	S	20.0	L	4	40	5	6			OHM
1996 05 15.70		M	7.5	AA	5.0	B		7	10	4			KAT01
1996 05 15.70		S	8.2	MS	7.8	R	7	30	3.5	1			JON
1996 05 15.99		B	7.2	AA	11	L	7	56	6	4			BAR06
1996 05 16.01		S	7.1	AA	11	L	7	32	8	3			BAR06
1996 05 16.04		S	7.7	AA	20.0	L	4	42	4	6			SCH04
1996 05 16.08		S	7.5	AA	5.0	B		7	8	3			SHA02
1996 05 16.08		S	7.7	AA	10	B		14	7	S4	0.2	325	SHA02
1996 05 16.42		M	7.4	SC	5.0	B		10	11	5			HAL
1996 05 16.74		S	7.8	MS	7.8	R	7	30	4	1		0	JON
1996 05 16.81		S	7.4	AA	8.0	B		20	6.5	5			PEA
1996 05 16.81		S	7.5	AA	8.0	B		20	5	4	1 m	100	CAM03
1996 05 16.99		S	7.1	AA	11	L	7	54	6	4/			BAR06
1996 05 17.01		S	7.2	AA	11	L	7	32	6.5	4			BAR06
1996 05 17.03		M	6.7:	TI	8.0	B		10	12	3			HOR02
1996 05 17.04		S	7.3	SC	8.0	B		20	7.5	3			OKS
1996 05 17.58		S	6.8	AA	2.5	B		2					SEA

Comet C/1995 O1 (Hale-Bopp) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 05 17.73		S	7.3	SC	7.8	R	7	30	4	2			JON
1996 05 17.92		B	7.2	VF	6	R		30	15	3			RED
1996 05 17.95		E	8.6	AA	30	L	5	60	5	6			NEV
1996 05 17.97		B	7.2	VF	11.0	B		20	18	3			ISH03
1996 05 17.97		S	6.8	SC	11.0	B		20	20	3			BOR04
1996 05 18.54		M	7.2	SC	0.0	E		1					OME
1996 05 19.04		M	6.7:	TI	8.0	B		10	13	2			HOR02
1996 05 19.04		S	7.3	HD	6.0	B		20	8	5/			SAR02
1996 05 19.04		S	7.5	HD	8	R	3	10	6	7/			SZE02
1996 05 19.07		S	8.2	AA	10.0	B		14	5.5	5			LOO01
1996 05 19.15		S	7.4	S	20	L	8	83		4			C0002
1996 05 19.59		S	7.3	AA	20.3	L	7	56	3	7	5 m		CAM03
1996 05 19.98		B	7.2	AA	11	L	7	54	5.5	4/			BAR06
1996 05 20.01		B	7.0	AA	11	L	7	32	6	S6			BAR06
1996 05 20.03		S	7.3	AA	15.0	R		30	5	5			DIE02
1996 05 20.10		B	7.4	S	5.0	B		7	9	6			BIV
1996 05 20.38		J	7.1	SC	25.4	T	4		4.87	s3/			ROQ
1996 05 20.80		S	7.3	AA	8.0	B		20	5	4	10 m		CAM03
1996 05 21.04		M	6.7	TI	8.0	B		10	12	2/			HOR02
1996 05 21.05		B	7.4	AA	10	B		14	7	4			SHA02
1996 05 21.06		S	7.3	AA	5.0	B		7	6	4			SHA02
1996 05 21.07		S	7.4	AA	8.0	B		20	6	5	0.15	330	SHA02
1996 05 21.59		S	6.6	AA	2.5	B		2					SEA
1996 05 21.77		S	7.2	AA	5.0	B		10	5	4			SEA01
1996 05 21.77		S	7.3	AA	8.0	B		15	5	3			SEA01
1996 05 21.89		S	7.3	S	15	L	5	50		4			SMI08
1996 05 21.99		B	7.2	SC	11	L	7	32	6	5			BAR06
1996 05 21.99		S	7.0	SC	4	R		7	9	2/			BAR06
1996 05 22.00		B	7.3	SC	11	L	7	56	6	5			BAR06
1996 05 22.01		B	8.2:	AA	11	L	7	32	5.4	5			VEL03
1996 05 22.01		S	8.0:	AA	11	L	7	32					VEL03
1996 05 22.04		B	7.3	S	5.0	B		7	9	6			BIV
1996 05 22.05		S	7.3	AA	15.0	R		30	5	6			DIE02
1996 05 22.11		M	6.8	AA	3.4	B		9	&12	5			PER01
1996 05 22.11		S	6.7	AA	3.4	B		9	&12	5			PER01
1996 05 22.50		S	7.4	AA	8.0	B		15	3	4			SEA01
1996 05 22.59		S	7.5	AA	5.0	B		10	5	4			SEA01
1996 05 22.60		M	6.5	AA	5.0	B		10					SEA
1996 05 22.73		C	6.9	GA	8.0	R	6		15		27 m	227	NAK01
1996 05 22.75		S	6.9	AA	7.0	R		10	10	4			KOB01
1996 05 22.77		M	6.8	AA	3.5	B		7					TSU02
1996 05 22.99		M	6.8	AA	4	R	4	12	8	2			MAI
1996 05 23.11		S	7.1	AA	8.0	B		11	8.5	4			DES01
1996 05 23.30	a	S	7.0	AA	5.0	B		10	10	4			BOR
1996 05 23.41		M	7.2	SC	5.0	B		10	12	5			HAL
1996 05 23.72		S	7.6	MS	7.8	R	7	30	3		0.1		JON
1996 05 23.74		S	7.4	HS	25.4	T	6	60	6	6			YOS04
1996 05 23.77		S	7.3	AA	5.0	B		10	6	4			SEA01
1996 05 23.98		S	7.1:	SC	11	L	7	32	9	4			BAR06
1996 05 24.05		S	7.3	S	11	L	8	72	2	6			GEY
1996 05 24.06	!	V	6.9	YF	20.0	T	2		&10	6			MIK
1996 05 24.12		S	7.0	AA	8.0	B		11	10	4/			DES01
1996 05 24.59		S	6.6	AA	2.5	B		2					SEA
1996 05 24.65		S	7.4	AA	10.5	R	7	23	7	4			HAS08
1996 05 24.66		I	6.8	AA	0.7	E		1					CAM03
1996 05 24.66		S	6.8	AA	8.0	B		20	10		10 m	180	CAM03
1996 05 24.66		S	7.0	AA	20.3	L	7	56	8	7	10 m	180	CAM03
1996 05 24.75		S	7.8	S	15.0	R	5	25	5	4/			NAG02
1996 05 24.77		S	7.2	AA	5.0	B		10	6	5			SEA01
1996 05 24.80		S	7.1	AA	8.0	B		20	9	5	0.35	262	PEA
1996 05 24.90		S	7.6	S	20	L	8	83	2.5	5			C0002
1996 05 24.98		M	6.7	S	8.0	B		10	13	3			HOR02
1996 05 24.99		S	6.8	AA	11	L	7	32	6	5			BAR06
1996 05 24.99		S	7.1	SC	11	L	7	32	6	5			BAR06

Comet C/1995 O1 (Hale-Bopp) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 05 25.01		S	6.8	SC	6	R		20	7	3			BAR06
1996 05 25.02		M	7.8	TI	8.0	B		10	4				POD
1996 05 25.12		S	6.9	AA	8.0	B		11	10	4	0.15	260	DES01
1996 05 25.13		K	6.8	S	7.0	B		10	9	4			MAR02
1996 05 25.14		K	7.3	S	7.0	B		10	6	4			SAN04
1996 05 25.18		S	6.9	S	15.0	L	4	50	9	4			ROD01
1996 05 25.30	a	S	6.9	AA	5.0	B		10	9	6			BOR
1996 05 25.79		S	6.9	AA	8.0	B		20	9	6	0.33	229	PEA
1996 05 26.05		S	7.1	VB	10	B		14	8	S3	0.2	290	SHA02
1996 05 26.07		S	6.9	VB	5.0	B		7	7	3			SHA02
1996 05 26.10		K	6.6	S	7.0	B		10	9	5			MAR02
1996 05 26.11		S	6.8	S	44.5	L	5	100	9	4			SAN04
1996 05 26.13		S	6.8	AA	8.0	B		11	10	5	0.3	260	DES01
1996 05 26.18		S	6.9	AA	8.0	B		20	10	7	1.0	250	LOU
1996 05 26.38		M	7.2	SC	5.0	B		10					HAL
1996 05 26.69		S	7.6	MS	7.8	R	7	30	3	3			JON
1996 05 27.13		S	6.8	AA	8.0	B		11	12	5/	0.45	260	DES01
1996 05 27.39		J	6.9	SC	25.4	T	4		5.72	s4			ROQ
1996 05 28.04		S	7.3	VB	10	B		14	8	S3	0.2	290	SHA02
1996 05 28.06		S	6.8	AA	15.0	R		30	6	4			DIE02
1996 05 28.12		S	6.7	AA	8.0	B		11	12	5/	0.5	255	DES01
1996 05 28.17		B	6.8	S	5.0	B		7	10	4			TRI
1996 05 28.41		M	7.1	SC	5.0	B		10	11	5			HAL
1996 05 28.78		S	7.2	AA	5.0	B		10	7	4			SEA01
1996 05 28.82		M	6.5	AA	5.0	B		10					SEA
1996 05 29.06		S	7.2	S	6.3	B		9	8	3			KAM01
1996 05 29.08	!	V	7.0	YF	20.0	T	2		&20	7	&0.5	225	MIK
1996 05 29.15		B	6.7	S	5.0	B		7	10	4			TRI
1996 05 29.32		S	6.5	AA	8.0	B		11	12	5/	0.60	250	DES01
1996 05 30.00		M	6.5	S	8.0	B		10	12	3			HOR02
1996 05 30.07	!	V	6.9	YF	20.0	T	2		&20	7	&0.5	225	MIK
1996 05 30.13		S	7.0	S	20	L	8	83	4.1	4			C0002
1996 05 30.82		S	6.8	AA	8.0	B		20	10	5	10 m		CAM03
1996 05 31.14		S	7.3	S	5.0	B		20	6	6			GEY
1996 05 31.33		S	6.6	AA	8.0	B		11	12	6	0.60	245	DES01
1996 06 01.00		S	7.0	AA	11	L	7	32	> 5	3			BAR06
1996 06 01.32	!	J	7.3	SC	25.4	T	4		4.60	s5			ROQ
1996 06 01.33		S	6.5	AA	8.0	B		11	14	6	0.60	245	DES01
1996 06 01.98		S	7.0:	AA	11	L	7	32	> 4	4			BAR06
1996 06 05.70		S	6.7	SC	7.0	R		10	7	3			KOB01
1996 06 05.75		S	6.0	S	15.0	R	5	25	5	5	0.03		NAG02
1996 06 06.13		S	6.5	AA	8.0	B		11	12	6	0.60	245	DES01
1996 06 06.44		S	6.3	AA	5.0	B		10					SEA
1996 06 06.95		B	6.8	AA	11	L	7	56	10	S5			BAR06
1996 06 06.96		M	6.3	S	8.0	B		10	10	3/			HOR02
1996 06 06.98		S	6.5	AA	15.0	R		30	7	5			DIE02
1996 06 07.00		S	7.1	VB	10	B		14	5	4			SHA02
1996 06 07.12		S	6.6	AA	8.0	B		11	14	6/	0.70	245	DES01
1996 06 07.33	!	J	6.9	SC	25.4	T	4		6.80	s4			ROQ
1996 06 07.43		S	6.1	AA	5.0	B		10					SEA
1996 06 07.48		B	6.4	AA	5.0	B		10	8	6			SEA01
1996 06 07.86		S	7.2	S	20	L	8	83	& 3.0	5			C0002
1996 06 07.91		S	7.0	S	11	L	10	63	4	7		10	GEY
1996 06 07.94		B	7.0	AA	11	L	7	56	6	4			BAR06
1996 06 07.95		B	6.9	AA	11	L	7	32	7	4			BAR06
1996 06 07.95		M	7.0	AA	13.0	L	6	36	6	5			MEY
1996 06 07.97		B	6.4	VF	11.0	B		20	21	4			ISH03
1996 06 07.97		B	6.5	VF	11.0	B		20	20	4			RED
1996 06 07.97		M	6.4	S	8.0	B		10	12	3			HOR02
1996 06 07.97	!	V	6.5	YF	20.0	T	2		&20	7	&0.5	230	MIK
1996 06 08.12		S	6.5	AA	8.0	B		11	14	6	0.60	245	DES01
1996 06 08.32		M	7.0:	SC	5.0	B		10					HAL
1996 06 08.37		S	6.6	AA	10.0	R	5	27	6.5	6/			SPR
1996 06 08.42		K	7.2	S	5.0	B		10	20	7	0.33	45	GAL

Comet C/1995 O1 (Hale-Bopp) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 06 08.44		B	6.4	AA	5.0	B		10	9	5			SEA01
1996 06 08.81		S	6.9	VF	6.8	R	10	17	12	5			FIL05
1996 06 08.83		P	6.8	SC	6.7	A	4			D5	0.25	350	FIL05
1996 06 08.93		B	6.7	TI	5.0	B		7	12				APF
1996 06 08.94		S	6.7:	TI	10	B		25	12	3			ZN0
1996 06 08.95		B	6.9	AA	11	L	7	32	7	4/			BAR06
1996 06 08.95		B	7.0	AA	11	L	7	56	6	S5			BAR06
1996 06 08.96		B	6.3	VF	11.0	B		20	25	4			ISH03
1996 06 08.96		M	6.5	S	8.0	B		10	11	3			HOR02
1996 06 08.97		B	6.8	AA	5	R	7	20	8	3/			BAR06
1996 06 08.99		M	6.5	TI	8.0	B		10	10				POD
1996 06 09.03		K	6.3	S	7.0	B		10	5	6	0.16	315	MAR02
1996 06 09.04		K	6.5	S	7.0	B		10	7	6	0.16		SAN04
1996 06 09.11		S	6.5	AA	8.0	B		11	15	6	0.70	240	DES01
1996 06 09.40		K	7.6	S	5.0	B		10	20	6			GAL
1996 06 09.43		B	6.3	AA	8.0	B		15	7	6			SEA01
1996 06 09.57		S	6.4	AA	8.0	B		20	10	4			CAM03
1996 06 09.92	&	M	6.6	AA	4	R	4	12	9	2			MAI
1996 06 09.95		B	6.3	VF	11.0	B		20	21	5			ISH03
1996 06 09.95		M	6.9	AA	13.0	L	6	36	6	S6/			MEY
1996 06 09.96		B	6.4	VF	11.0	B		20	21	5			RED
1996 06 09.97		B	6.9	AA	11	L	7	56	8	S5			BAR06
1996 06 09.98		S	6.8	VB	10	B		14	10	S4	0.1	310	SHA02
1996 06 10.00		S	6.6	AA	5.0	B		7	9	4			SHA02
1996 06 10.12		S	6.5	AA	8.0	B		11	15	6	0.70	240	DES01
1996 06 10.14		B	6.3	S	5.0	B		7	14	3			TRI
1996 06 10.35		K	7.5	S	5.0	B		10	25	7			GAL
1996 06 10.45		S	6.4	AA	20.3	L	7	56	10	6			CAM03
1996 06 10.49		B	6.5	AA	5.0	B		10	8	5			SEA01
1996 06 10.65		S	8.0	MS	7.8	R	7	30	4	4			JON
1996 06 10.81		S	6.7	AA	8.0	B		20	9	6			PEA
1996 06 10.90	&	M	6.6	AA	4	R	4	12	9	2			MAI
1996 06 11.09		S	6.3	AA	8.0	B		20	14	6	0.8	240	LOU
1996 06 11.13		S	6.4	AA	8.0	B		11	15	6/	0.75	240	DES01
1996 06 11.81		S	6.3	AA	8.0	B		20	15	5			CAM03
1996 06 11.92		S	6.6	AA	5.0	B		7	13	D4			VEL03
1996 06 11.93		B	6.2	VF	11.0	B		20	21	5			RED
1996 06 11.94		B	6.1	VF	11.0	B		20	22	5			ISH03
1996 06 11.96		B	6.6	AA	5	R	7	20	15	3			BAR06
1996 06 12.02		S	6.8	SC	8.0	B		15	4	6/			SCH04
1996 06 12.11		S	6.3	AA	8.0	B		20	14	6/	0.5	240	LOU
1996 06 12.12		S	6.4	AA	8.0	B		11	15	6/	0.70	240	DES01
1996 06 12.30	!	J	7.4	SC	25.4	T	4		5.54	s4/			ROQ
1996 06 12.32		M	6.9	SC	5.0	B		10					HAL
1996 06 12.49		S	6.3	AA	20.3	L	7	56	10	5	15 m	10	CAM03
1996 06 12.90		B	6.6	AA	11	L	7	32	12.9	5			BAR06
1996 06 12.93		B	6.4	AA	4	R		6		4	0.2	310	BAR06
1996 06 12.96		S	6.8	SC	8.0	B		15	8	6			SCH04
1996 06 12.99		S	6.4	AA	5.0	B		7	9	4			BOU
1996 06 13.00		S	6.2	AA	5.0	B		7	10	4			DIE02
1996 06 13.01		B	7.1	VB	10	B		14	6	s5	0.07	340	SHA02
1996 06 13.02		S	6.6	AA	5.0	B		10	6	6			L0001
1996 06 13.02		S	6.7	AA	5.0	B		7	7	5			SHA02
1996 06 13.09		S	6.5	AA	8.0	B		20	8	6/	0.5	315	LOU
1996 06 13.12		S	6.4	AA	8.0	B		11	14	6/	0.8	265	DES01
1996 06 13.13		S	7.0	S	5.0	B		20					GEY
1996 06 13.57		M	6.0	AA	5.0	B		10					SEA
1996 06 13.81		S	6.3	AA	8.0	B		20	15	4			CAM03
1996 06 13.85		S	6.8	S	20	L	8	83		5			C0002
1996 06 13.92		B	6.2	AA	5.0	B		7					VEL03
1996 06 13.92		S	6.3	AA	5.0	B		7	13	D4			VEL03
1996 06 13.95		B	6.6	AA	11	L	7	32	11.2	5			BAR06
1996 06 13.95		M	6.3	S	8.0	B		10	11	3			HOR02
1996 06 13.95		S	6.3	AA	4	R		6		3			BAR06

Comet C/1995 O1 (Hale-Bopp) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 06 13.97		M	6.3	S	8.0	B		10	13	4			PLS
1996 06 13.97		S	6.4	AA	5	R	7	20	13	s3			BAR06
1996 06 13.98		S	6.7	SC	8.0	B		15	10	4			SCH04
1996 06 14.00		S	6.1	AA	5.0	B		7	10	4			DIE02
1996 06 14.01		S	6.7	AA	10	B		14	7	s5	0.1	340	SHA02
1996 06 14.03		S	6.5	AA	6.3	B		9	11	5			KAM01
1996 06 14.08		S	6.3	AA	8.0	B		20	8	6/	0.8	280	LOU
1996 06 14.13		S	6.3	AA	8.0	B		11	15	6	0.8	265	DES01
1996 06 14.53		S	6.3	AA	8.0	B		20	15	4			CAM03
1996 06 14.58		S	6.2	AA	2.5	B		2					SEA
1996 06 14.93		E	7.1	AA	13.3	R	5	33	6	6/			SC004
1996 06 14.94	!	V	6.7	YF	20.0	T	2		&18	7	&0.5	225	MIK
1996 06 14.98		B	6.6:	AC	20.3	T	10	50	&16				ANZ
1996 06 14.99		S	6.7	AA	10	B		14	&10	4			SHA02
1996 06 14.99		S	6.8	SC	8.0	B		80	11	4			SCH04
1996 06 15.00		S	6.3	AA	5.0	B		7	10	3			MER
1996 06 15.00		S	6.3	AA	5.0	B		10	11	4/			BOU
1996 06 15.01		S	6.0	AA	5.0	B		7	10	4			DIE02
1996 06 15.03		S	6.3	AA	6.3	B		9	11	5			KAM01
1996 06 15.05		B	6.8	AA	5.0	B		10		7			PUJ01
1996 06 15.09		S	6.3	AA	8.0	B		20	12	6/	0.8	245	LOU
1996 06 15.34		S	6.3	AA	10.0	R	5	17	9.5	6/			SPR
1996 06 15.56		S	6.2	AA	20.3	L	7	56	8	s6	20 m	360	CAM03
1996 06 15.58		S	6.4	AA	8.0	B		20	8	6			PEA
1996 06 15.59		M	6.3	AA	3.5	B		7					TSU02
1996 06 15.68		S	6.2	AA	7.0	R		10	10	4			KOB01
1996 06 15.71		S	6.2	S	15.0	R	5	25	7	5			NAG02
1996 06 15.71		S	6.6	AA	10.5	R	7	23	8	5			HAS08
1996 06 15.74		B	7.4	S	8.0	B		11	7	5			MIY01
1996 06 15.81		S	6.2	AA	8.0	B		20	15	4	30 m	360	CAM03
1996 06 15.83		E	7.0	AA	13.3	R	5	33	4.8	6	0.15	320	SC004
1996 06 15.92		S	6.4	AA	5.0	B		10	6	6			L0001
1996 06 15.92	&	M	6.5	AA	4	R	4	12	10	3	0.14	350	MAI
1996 06 15.96		S	6.3	AA	5.0	B		7	10	3			MER
1996 06 15.97		M	6.7	AA	13.0	L	6	36	7	D6			MEY
1996 06 15.98		S	6.3	AA	8.0	B		11	15	6/	0.8	270	DES01
1996 06 15.98		S	6.4	HD	6.0	B		20	12	5	0.7	320	SAR02
1996 06 15.98		S	6.6	AA	5.0	B		10		3/			MEY
1996 06 16.00		M	6.1	S	8.0	B		10	11	3/			HOR02
1996 06 16.00		S	6.8	SC	8.0	B		80	9	6			SCH04
1996 06 16.02		S	6.1	AA	5.0	B		7	10	4			DIE02
1996 06 16.05	!	V	6.7	YF	6.4	A	3		&18	7	&1	200	MIK
1996 06 16.07		S	6.2	AA	8.0	B		20	14	7	0.8	245	LOU
1996 06 16.35		M	6.5	SC	5.0	B		10	11				HAL
1996 06 16.90			6.6	VF	6.8	R	4	8		4			FIL05
1996 06 16.93		E	7.8:	AA	13.3	R	5	33	3.7	6	0.09	355	SC004
1996 06 16.93		M	6.7	AA	13.0	L	6	36	6.5	D6/			MEY
1996 06 16.93		S	6.5	AA	5.0	B		10		4			MEY
1996 06 16.94		M	6.5	AA	11	L	7	56	12.5	S5	0.09	355	BAR06
1996 06 16.99		M	6.4	TI	8.0	B		10	10				POD
1996 06 16.99		S	6.3	AA	8.0	B		11	15	7	0.8	270	DES01
1996 06 17.02		M	6.2	S	8.0	B		10	12	3			HOR02
1996 06 17.18		S	6.3	AA	8.0	B		11	15	7	0.80	275	DES01
1996 06 17.28	!	J	5.9	SC	25.4	T	4		6.67	s4			ROQ
1996 06 17.55		S	6.0	AA	2.5	B		2					SEA
1996 06 17.89		S	6.3	AA	5	R	7	20	14	s3			BAR06
1996 06 17.91		B	6.0	AA	5.0	B		7					VEL03
1996 06 17.91		S	6.3	AA	5.0	B		7	13	S5			VEL03
1996 06 17.93		B	6.7	TI	5.0	B		7	14				APF
1996 06 17.95		M	6.2	S	8.0	B		10	13	3/			HOR02
1996 06 17.95		M	6.4	AA	11	L	7	56	12	S5			BAR06
1996 06 17.95		S	6.2	AA	4	R		6		4/			BAR06
1996 06 17.98		B	6.5	AA	10	B		14	8	s4			SHA02
1996 06 17.99		S	6.3	AA	5.0	B		7	12	3			SHA02

Comet C/1995 O1 (Hale-Bopp) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 06 17.99	!	V	6.5	YF	6.4	A	3		&20	7			MIK
1996 06 18.10		S	6.2	AA	8.0	B		20	12	6/	0.5	280	LOU
1996 06 18.19		S	6.2	AA	8.0	B		11	17	7	0.90	275	DES01
1996 06 18.32		M	6.4	SC	5.0	B		10	11				HAL
1996 06 18.53		B	6.0	AA	5.0	B		10	12	6			SEA01
1996 06 18.53		S	5.8	AA	0.0	E		1					SEA
1996 06 18.53		S	5.8	AA	2.5	B		2					SEA
1996 06 18.58		M	6.0	AA	10.0	B		20	8	4			YOS02
1996 06 18.64		B	6.4	S	20.0	L	4	40	12	6			OHM
1996 06 18.67		S	6.5	SC	3.0	B		10	12	D4	14 m	305	SHI
1996 06 18.68		S	6.1	AA	5.0	B		7	14	4			KOB01
1996 06 18.68		S	6.3	AA	10.5	R	7	23	9	6			HAS08
1996 06 18.73		B	6.4	S	7.0	B		10	8	7			KIN
1996 06 18.75		S	5.8	S	15.0	R	5	25	7	5	0.05		NAG02
1996 06 18.78		B	6.2	AA	5.0	B		10	12	6			SEA01
1996 06 18.93		S	6.2	AA	5	R	7	20	16	s4			BAR06
1996 06 18.97		S	6.0	AA	5.0	B		7	12	4			DIE02
1996 06 19.07		S	6.4	AC	3.4	B		9	&10	3			PER01
1996 06 19.10		S	6.4	AA	8.0	B		20	10	7	0.5	280	LOU
1996 06 19.18		S	6.2	AA	8.0	B		11	17	6/	0.80	275	DES01
1996 06 19.48		B	6.0	AA	5.0	B		10	12	5			SEA01
1996 06 19.53		B	7.1	AA	8.0	B		11	8	5			MIY01
1996 06 19.59		S	6.3	SC	20	L	5	36	8	D4	12 m	300	SHI
1996 06 19.67		S	7.0	HS	25.4	T	6	60	8	7			YOS04
1996 06 19.75		B	6.0	AA	8.0	B		15	10	7			SEA01
1996 06 20.04		S	6.4	AC	3.4	B		9	>10	3			PER01
1996 06 20.18		S	6.2	AA	8.0	B		11	17	6/	0.80	275	DES01
1996 06 20.41		S	7.3	AA	21	L	6	46	3	4			KRY02
1996 06 20.53		S	5.8	AA	0.0	E		1					SEA
1996 06 20.53		S	5.9	VN	5.0	B		10		6			WIL02
1996 06 20.58		S	6.4	AA	8.0	B		20		6			PEA
1996 06 20.76		B	5.9	AA	5.0	B		10	10	6			SEA01
1996 06 20.92		B	6.4:	AC	20.3	T	10	50	&12				ANZ
1996 06 20.98		M	6.2	AA	8.0	B		15	10	6			BOU
1996 06 21.04		S	6.3	AC	3.4	B		9	&11	4			PER01
1996 06 21.09		S	7.0	AA	21	L	6	46	4	4			KRY02
1996 06 21.17		S	6.2	AA	8.0	B		11	18	6/	0.80	280	DES01
1996 06 21.32		M	6.2	SC	5.0	B		10	12	7			HAL
1996 06 21.56		S	6.3	VN	5.0	B		10		4			WIL02
1996 06 21.65		B	5.9	AA	5.0	B		10	12	5			SEA01
1996 06 21.94		E	7.5:	AA	13.3	R	5	33	7.5	7			SCO04
1996 06 22.04		S	6.3	AC	3.4	B		9	>10	3			PER01
1996 06 22.10		S	6.5	AA	8.0	B		20	8	5	0.5	280	LOU
1996 06 22.18		S	6.1	AA	8.0	B		11	18	7	0.80	280	DES01
1996 06 22.27	!	J	5.9	SC	25.4	T	4		8.38	s4/			ROQ
1996 06 22.32		S	6.1	AA	10.0	R	5	27	12	6/			SPR
1996 06 22.58		B	6.2	VG	8.0	B		11	&10	5			NAG08
1996 06 22.69		M	6.1	AA	10.0	B		20	7	4	6 m	340	YOS02
1996 06 22.70		S	6.3	AA	5.0	B		7	9	5			KOB01
1996 06 22.96		B	6.7	AA	5.0	B		10					PUJ01
1996 06 22.97		S	6.3	VB	10	B		14	7.5	s4			SHA02
1996 06 22.98		B	6.1	AA	5.0	B		7					DAR
1996 06 23.18		S	6.1	AA	8.0	B		11	18	7	0.85	280	DES01
1996 06 23.54		B	5.8	AA	5.0	B		10	13	6			SEA01
1996 06 23.89		E	7.0	AA	13.3	R	5	33	7.0	7	0.24	15	SCO04
1996 06 23.99		S	6.0	AA	5.0	B		10	13	5			BOU
1996 06 24.04		S	6.2	AC	3.4	B		9	& 8	3/			PER01
1996 06 24.17					40.6	L	5	70	5.5	7	0.10	350	BOR
1996 06 24.17	a	S	5.9	HP	5.0	B		10	12	6			BOR
1996 06 24.18		S	6.1	AA	8.0	B		11	18	6/	0.85	280	DES01
1996 06 24.39		M	6.2	SC	5.0	B		10	12				HAL
1996 06 24.52		S	5.9	VN	5.0	B		10		6			WIL02
1996 06 24.58		S	5.6	AA	0.0	E		1					SEA
1996 06 24.58		S	5.7	AA	2.5	B		2					SEA
1996 06 24.99		B	6.1	AA	10	B		14	7	5	0.17	0	SHA02

Comet C/1995 O1 (Hale-Bopp) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 06 25.00		M	5.7	S	8.0	B		10	14	4/	0.4	305	HOR02
1996 06 25.05		S	6.3	AC	3.4	B		9	&10	3			PER01
1996 06 25.06		M	7.0	AC	15.0	L	4	26	& 5	6/			PER01
1996 06 25.20		S	6.1	AA	8.0	B		11	15	6/			DES01
1996 06 25.45		S	6.0	SC	8.0	B		20	10	3			CAM03
1996 06 25.98		S	5.7	AA	5	R	7	20	16	4	0.24	15	BAR06
1996 06 26.02		M	5.8	S	5.0	B		10	13	4			HOR02
1996 06 26.04		S	6.2	AC	3.4	B		9	> 7	3			PER01
1996 06 26.21		S	6.0	AA	8.0	B		11	12	7			DES01
1996 06 26.21		S	6.1	HP	5.0	B		10	10	5/			BOR
1996 06 26.51		S	5.9	VN	5.0	B		10		6			WIL02
1996 06 26.71		B	5.8	AA	5.0	B		10	11	6			SEA01
1996 06 26.71		B	6.2	AA	10.5	R	7	23	9	7			HAS08
1996 06 26.78		B	5.8	AA	8.0	B		15	10	6			SEA01
1996 06 27.07		S	6.0	AC	3.4	B		9	> 9	5			PER01
1996 06 27.20		S	6.0	AA	8.0	B		11	12	7			DES01
1996 06 27.26	!	J	5.9	SC	25.4	T	4		11.27	s5	?		ROQ
1996 06 27.50		S	6.0	VN	5.0	B		10		6			WIL02
1996 06 27.72		B	5.8	AA	5.0	B		10	11	6			SEA01
1996 06 27.73			5.7	AA	0.0	E		1					SEA01
1996 06 27.91		B	6.0:	AA	11	L	7	32	10	S6			BAR06
1996 06 27.91		S	6.1:	AA	11	L	7	32	10	S6			BAR06
1996 06 27.95		S	6.6	AA	15.2	L	5	42	6	7			MOE
1996 06 28.05		S	6.1	AC	3.4	B		9					PER01
1996 06 28.78		B	5.8	AA	5.0	B		10	12	5			SEA01
1996 06 29.75		S	5.8	S	15.0	R	5	25	6	6	0.03		NAG02
1996 06 29.79		S	5.8	AA	5.0	B		10	9	5			SEA01
1996 06 29.95		S	6.2	VF	6.0	R	10	10		4/			OGA01
1996 07 03.49		B	6.5:	VG	8.0	B		11	& 8	5	?		NAG08
1996 07 03.92		B	5.8:	AA	11	L	7	56	8	5			BAR06
1996 07 04.17		S	6.1	SC	1	E		1					HAL
1996 07 04.38		M	6.0	SC	3.5	B		7					OME
1996 07 04.86		S	6.0	HD	6.0	B		20	12	5/			SAR02
1996 07 04.94		S	6.5	AA	15.2	L	5	42	6	4			MOE
1996 07 04.97		B	5.9:	AA	11	L	7	56	8	4			BAR06
1996 07 05.55		B	6.4	VG	8.0	B		11	8	6			NAG08
1996 07 05.57		M	5.7	AA	3.5	B		7					TSU02
1996 07 05.66		M	6.1	AA	3.5	B		10	&10				NAK01
1996 07 05.87		S	6.1	HD	6.0	B		20	14	s6			SAR02
1996 07 05.88		M	6.3	AA	11	L	7	56	10	D5/			BAR06
1996 07 05.98		S	6.1	AA	5	R	7	20	14	4	0.2	20	BAR06
1996 07 06.13		B	6.1	SC	6.3	B		9		7			CHE
1996 07 06.17					40.6	L	5	70	5	7	0.08	355	BOR
1996 07 06.17		B	6.0	HP	5.0	B		10					BOR
1996 07 06.17		S	5.9	HP	5.0	B		10	13	6			BOR
1996 07 06.27		S	5.9	AA	10.0	R	5	27	13	6/			SPR
1996 07 06.43		M	5.7	AA	5.0	B		10					SEA
1996 07 06.54		S	5.7	S	15.0	R	5	25	5	6			NAG02
1996 07 06.57		M	6.0	AA	6	R		20	10	4			KAT01
1996 07 06.58		B	6.3	VG	8.0	B		11	8	6	0.05		NAG08
1996 07 06.88		M	6.2	AA	5.0	B		7	&10	6			MIK
1996 07 06.88		M	6.3	AA	11	L	7	32	10	s4/			BAR06
1996 07 06.97		M	5.9	S	7.0	B		10	12	6			MAR02
1996 07 06.98		M	6.4	S	7.0	B		10	15	5			SAN04
1996 07 06.99		B	6.3	AA	5.0	B		10					PUJ01
1996 07 06.99		S	5.9	AA	5.0	B		7	13	4/			BOU
1996 07 06.99		S	6.5	AA	15.0	R		30	7	5			DIE02
1996 07 07.21		S	5.9	AA	8.0	B		11	15	7	0.9	285	DES01
1996 07 07.28		S	5.8	AA	10.0	R	5	17	12	6/			SPR
1996 07 07.38		M	5.5	SC	0.0	E		1					OME
1996 07 07.88		M	6.4	AA	5.0	B		7	&11	6			MIK
1996 07 07.94		B	5.4	VF	11.0	B		20	23	5	0.2		ISH03
1996 07 07.94		S	6.3	AA	15.2	L	5	42	7	4			MOE
1996 07 07.96		S	5.7	AA	5.0	B		7	14	5			BOU
1996 07 08.22		M	6.0	SC	5.0	B		10	11				HAL

Comet C/1995 O1 (Hale-Bopp) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 07 08.53		M	5.7	AA	3.5	B		7					TSU02
1996 07 08.93		S	6.2	AA	15.2	L	5	42	6	5			MOE
1996 07 08.95		B	5.4	VF	11.0	B		20	22	5			RED
1996 07 09.35		M	5.8	SC	3.5	B		7					OME
1996 07 09.98		B	5.7:	VF	8.0	B		12	18	4			BAR06
1996 07 09.99		B	5.7:	VF	11.0	B		20	20	5			ISH03
1996 07 10.04		S	5.7	AA	5.0	B		7	15	5			DIE02
1996 07 10.18		B	5.9	S	5.0	B		7	20	3			TRI
1996 07 10.25		S	5.9	AA	8.0	B		11	15	6	1	290	DES01
1996 07 10.29		M	5.8	SC	3.5	B		7					OME
1996 07 10.55		M	5.6	AA	3.5	B		7			1	170	TSU02
1996 07 10.56		S	5.4	S	15.0	R	5	25	5	6	0.11		NAG02
1996 07 10.59		M	6.0	AA	3.5	B		10	13	4			NAK01
1996 07 10.90		M	6.4	AA	5.0	B		7	&12	6			MIK
1996 07 10.95		B	5.8	VF	11.0	B		20	15	5			BAR06
1996 07 10.98		M	5.7	AA	5.0	B		7	14	5			BOU
1996 07 10.98		S	5.8	AA	5.0	B		7	15	5			DIE02
1996 07 10.99		B	5.8	VF	11.0	B		20	21	5			ISH03
1996 07 11.02		S	5.8	AA	8.0	B		20	6	7			LOU
1996 07 11.09		B	5.8	S	5.0	B		7	20	3			TRI
1996 07 11.16					40.6	L	5	70	5.5	7	0.09	350	BOR
1996 07 11.16		B	6.0	HP	5.0	B		10					BOR
1996 07 11.16		S	5.8	HP	5.0	B		10	11	6			BOR
1996 07 11.21		S	5.8	AA	8.0	B		11	15	6	1	290	DES01
1996 07 11.44		S	5.7	AA	5.0	B		10					SEA
1996 07 11.48		M	6.0	AA	6	R		20	10	4			KAT01
1996 07 11.51		S	5.3	S	15.0	R	5	25	5	6	0.08		NAG02
1996 07 11.53		B	6.3	AA	8.0	B		11	7	4			MIY01
1996 07 11.57		B	5.8	AA	5.0	B		7	10	6			SOW
1996 07 11.66		B	6.6	HS	25.4	T	6	60	11	6/			YOS04
1996 07 11.89		M	6.4	AA	5.0	B		7	&12	6			MIK
1996 07 11.92		S	6.0	AA	5.0	B		7	15	3			MER
1996 07 12.02		E	6.6	S	35.8	T	10	815		7	0.1	3	PAV
1996 07 12.15		B	6.1	HP	5.0	B		10					BOR
1996 07 12.15		S	5.7	HP	5.0	L	5	10	13	6			BOR
1996 07 12.21		S	5.8	AA	8.0	B		11	15	6	1	290	DES01
1996 07 12.28		M	5.9	SC	5.0	B		10	14	6			HAL
1996 07 12.60		S	6.1	VG	5.0	B		7	12	5			NAG08
1996 07 12.68		S	7.1	HS	25.4	T	6	60	7	5			YOS04
1996 07 12.93		B	5.7	VF	11.0	B		20	21	5			ISH03
1996 07 12.95		B	5.7	VF	8.0	B		12	17	4/			BAR06
1996 07 12.98		B	6.0:	AC	20.3	T	10	50	&14				ANZ
1996 07 13.00		M	6.2	HD	6.0	B		20	10		3.5	160	SAR02
1996 07 13.00		M	6.3	HD	6.0	B		20	15	5	5.2	160	BAK01
1996 07 13.01		S	5.7	AA	5.0	B		7	15	6			DIE02
1996 07 13.25		S	5.8	AA	8.0	B		11	15	6	1	290	DES01
1996 07 13.29		S	5.7	AA	8.0	B		11	12	5/			SPR
1996 07 13.55		M	5.8	AA	3.5	B		10	15	4/			NAK01
1996 07 13.59		S	5.7	AA	5.0	B		7	15		0.4	170	KOB01
1996 07 13.60		S	6.1	VG	5.0	B		7	15	6			NAG08
1996 07 13.86		M	6.5	S	8.0	B	10	10		7			PAV
1996 07 13.89		M	6.3	AA	5.0	B		7	&14	6			MIK
1996 07 13.91		S	5.8	S	2.0	B		4	10	5			SAN04
1996 07 13.94		S	6.0	AA	5.0	B		7	15	3			MER
1996 07 13.97		K	6.6	S	8.0	B	10	10		7			PAV
1996 07 13.98		S	5.6	AA	5.0	B		7	17	4/			BOU
1996 07 14.02		S	5.8	AA	8.0	B		20	15	7	1.5	350	LOU
1996 07 14.11		S	5.9	S	7.0	B		10	13	5			MAR02
1996 07 14.18		S	5.7	HP	5.0	B		10	13	5			BOR
1996 07 14.24		S	5.8	AA	8.0	B		11	17	6	1	290	DES01
1996 07 14.28		S	5.7	AA	8.0	B		11	12	5/			SPR
1996 07 14.47		M	5.6	AA	5.0	B		10					SEA
1996 07 14.63		M	6.3	AA	6	R		20	10	3			KAT01
1996 07 14.94		S	5.6	AA	6.3	B		9	14	4/			KAM01
1996 07 14.94		S	6.2	HD	6.0	B		20	12	5/	3	160	SAR02

Comet C/1995 O1 (Hale-Bopp) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 07 15.03		S	5.8	AA	8.0	B		20	15	6/	1.5	350	LOU
1996 07 15.24		S	5.8	AA	8.0	B		11	17	6/	1	290	DES01
1996 07 15.93		S	5.8	AA	8.0	B		11	18	6/	1	290	DES01
1996 07 16.02		S	5.8	AA	5.0	B		7	20	7			DIE02
1996 07 16.33		M	5.9	SC	3.5	B		7					OME
1996 07 16.38		S	5.6	AA	2.5	B		2					SEA
1996 07 16.91		S	5.6	AA	6.3	B		9	16	6			KAM01
1996 07 16.95		S	5.7	AA	8.0	B		11	18	6	1.2	295	DES01
1996 07 16.96		S	6.0	HD	6.0	B		20	12	5/	2	160	SAR02
1996 07 17.03		S	5.8	AA	8.0	B		20	20	6/	1.2	350	LOU
1996 07 17.58		S	5.5	AA	2.5	B		2					SEA
1996 07 17.90		M	6.3	AA	5.0	B		7	&14	6	&0.5	150	MIK
1996 07 17.92		S	6.0	S	7.0	B		10	14	6			MAR02
1996 07 17.97		S	5.7	AA	8.0	B		11	18	6	1.2	295	DES01
1996 07 18.33		M	6.0	SC	3.5	B		7					OME
1996 07 18.54		S	5.5	AA	2.5	B		2					SEA
1996 07 18.89		M	6.4	AA	5.0	B		7	&14	6	&0.5	150	MIK
1996 07 18.90		A	6.3	AA	0.0	E		1					MIK
1996 07 18.97		S	5.6	AA	8.0	B		11	18	6	1.2	295	DES01
1996 07 18.97		S	5.7	AA	5.0	B		7	20	7			DIE02
1996 07 18.98		S	5.6	AA	5.0	B		7	16	5/			BOU
1996 07 18.99		S	6.1	HD	6.0	B		20	12		1	120	KIS02
1996 07 19.00		S	5.9	HD	4.5	B		12	15	6	1.5	150	SAR02
1996 07 19.02		S	5.7	AA	8.0	B		20	18	6/	1.0	350	LOU
1996 07 19.33		M	5.9	SC	3.5	B		7			110 m	135	OME
1996 07 19.97		S	5.9	HD	5.0	B		7	15	5	1.5	140	SAR02
1996 07 20.03		S	5.7	AA	8.0	B		20	15	7	1.2	350	LOU
1996 07 20.04		S	5.7	S	7.0	B		10	14	5			MAR02
1996 07 20.97		M	5.5	AA	5.0	B		7	18	5/			BOU
1996 07 20.97		S	5.3	S	2.0	B		4	22	5			SAN04
1996 07 20.99		S	5.6	S	7.0	B		10	14	7	0.66	160	MAR02
1996 07 21.38		M	5.5	SC	0.0	E		1			2	135	OME
1996 07 21.97		S	5.6	AA	5.0	B		7	17	5			BOU
1996 07 22.02		S	5.6	AA	8.0	B		20	15	7	1.2	350	LOU
1996 07 22.28		S	5.6	AA	8.0	B		11	18	5/	0.20	120	SPR
1996 07 22.88	!	V	5.9	YF	20.0	T	2		&24	7	&1	140	MIK
1996 07 22.97		S	5.6	AA	5.0	B		7	25	6			DIE02
1996 07 23.17		B	7.0	S	5.0	B		12	&20	4			GRE
1996 07 23.19		S	5.7	AA	5.0	B		12	&20	4			GRE
1996 07 24.27		S	5.6	AA	8.0	B		11	20	4/			SPR

Comet C/1995 Q1 (Bradfield)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 08 20.32		S	5.8	SC	8.0	B		11		3			JON
1995 08 20.46		S	5.3	AA	5.0	B		7	& 2	5			CLA
1995 08 21.36		S	5.5	SC	8.0	B		20	2	6	0.5	200	CAM03
1995 08 22.46		S	5.2	AA	20.0	L	4	28	3	6	10 m		CLA
1995 08 23.38		S	5.5	SC	8.0	B		20	2	6	0.5	200	CAM03
1995 08 23.70		S	5.5	S	11	L	8	45		6			C0002
1995 08 24.37		S	5.5	SC	8.0	B		20	2	7	0.5	240	CAM03
1995 09 23.40		S	7.4	AC	15	R	5	42	3	5			MOR03
1995 09 27.40	s	S	8.1	AC	15	R	5	42	2.5				MOR03
1995 09 28.17		B	8.3	A	12	L	6	38	3.5	5/			REN
1995 09 28.38		S	7.5	SC	25.4	L	4	47	5	4			DID
1995 09 28.40	s	S	8.0	AC	15	R	5	42	3	5			MOR03
1995 09 29.39	s	S	8.2	AC	15	R	5	42	3.5	4			MOR03
1995 09 30.38		S	7.6	SC	25.4	L	4	47	5	3	0.41	175	DID
1995 09 30.43	s	S	8.7	GA	20.0	L	5	35	1.9	2/			MOD
1995 10 01.40	s	S	8.3	AC	15	R	5	42	4	4			MOR03
1995 10 02.40	s	S	8.4	AC	15	R	5	42	3.5	4			MOR03
1995 10 03.38		S	8.0	SC	25.4	L	4	47	4	3		170	DID
1995 10 06.17		B	8.8	A	12	L	6	38	3.5	5			REN
1995 10 10.15		M	7.3	S	10.0	B	4	25	6	2/			LEH
1995 10 12.14		M	7.9	S	10.0	B	4	25	4	3			LEH

Comet C/1995 Q1 (Bradfield) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 10 12.40		S	8.7	AC	15	R	5	42	5	3			MOR03
1995 10 15.54		S	9.1	S	20	T	10	63	3.0	4			PRY
1995 10 17.35		S	8.5	GA	25.4	L	4	47	4	1/			DID
1995 10 18.35		S	8.5	GA	25.4	L	4	47	4	1/			DID
1995 10 21.48		S	9.2	NP	5.0	B		10					HAL
1995 10 23.18		B	9.1	A	12	L	6	38	3	4			REN
1995 10 23.31		S	9.5	GA	25.4	L	4	47	4	2			DID
1995 10 23.38		S	9.4	AC	15	R	5	42	5	3			MOR03
1995 10 23.42		M	9.8	GA	20.0	L	5	35	2.2	2			MOD
1995 10 24.35		S	9.5	GA	25.4	L	4	47	4	0/			DID
1995 10 24.43		S	9.6	AC	15	R	5	42	5.5	3			MOR03
1995 10 26.04		E	10.1	NP	25	L	4	40	5	3			NEV
1995 10 26.42		S	9.5	AC	15	R	5	42	7	2			MOR03
1995 10 26.50		S	9.5	NP	5.0	B		10					HAL
1995 10 27.09		S	10.0	NP	18.7	L	5	38	5.5	2			SHU
1995 10 27.12		E	10.2	NP	25	L	4	40	5	3			NEV
1995 10 27.31		S	9.8	GA	25.4	L	4	47	4	0			DID
1995 10 28.02		E	10.2	NP	25	L	4	40	4	2			NEV
1995 10 29.34		S	9.8	GA	25.4	L	4	47	4	0			DID
1995 10 29.42		S	9.8	AC	15	R	5	42	5.5	2			MOR03
1995 11 01.51		S	9.7	CA	41	L	4	72					HAL
1995 11 02.54		S	10.2:	S	20	T	10	63	3.1	1			PRY
1995 11 18.06		B	10.8	VF	12	L	6	38	2.5	2			REN
1995 11 18.31		S	10.6	NP	41	L	4	72	6	1			HAL
1995 11 20.99		E	10.6	NP	25	L	4	40	4	1			NEV
1995 11 30.49		S	11.0	NP	41	L	4	72	6	0/			HAL
1996 01 14.25		I	[12.5:		41	L	4	183					HAL
1996 02 16.19		k	21.0	EB	154.9	L	3						HER02
1996 02 16.20		k	21.0	EB	154.9	L	3						HER02

Comet C/1995 Y1 (Hyakutake)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 12 27.52		S	10.2	AC	41	L	4	72	4				HAL
1996 01 03.54		M	10.2	AC	41	L	4	72	3.5	4			HAL
1996 01 18.53		M	9.8	AC	41	L	4	72					HAL
1996 01 18.64		S	9.9	GA	31.7	L	5	64	2.5	2			JON
1996 01 19.64		S	9.5	VN	31.7	L	5	64	3	2			JON
1996 01 20.38		S	9.4	GA	25.2	L	4	46	3	1			DID
1996 01 20.44	w	S	9.8	AC	15	R	5	42	3.5	2			MOR03
1996 01 21.37		S	9.4	GA	25.2	L	4	46	3	1			DID
1996 01 21.64		S	9.3	VN	31.7	L	5	64	3	1			JON
1996 01 24.52		S	9.4	NP	5.0	B		10					HAL
1996 01 24.65		S	9.2	VN	31.7	L	5	64	2.5	1			JON
1996 01 25.15		S	9.2	VN	31.7	L	5	64	2.5	2			JON
1996 01 25.72		S	9 :	AA	10.0	B		25					SEA
1996 01 26.30		S	8.8	AA	7.0	B		10	3.7	4			DEA
1996 01 26.38		S	9.2	GA	25.2	L	4	46	4	1			DID
1996 01 26.73		S	8.8	AA	10.0	B		25	6	5			SEA
1996 01 27.29		S	8.7	AA	7.0	B		10	3.7	4			DEA
1996 01 27.73		S	8.7	AA	10.0	B		25					SEA
1996 01 28.29		S	8.6	AA	7.0	B		10	2.8	6			DEA
1996 01 28.45		S	9.1	AC	15	R	5	42	4	2			MOR03
1996 01 28.64		S	9.5	VN	31.7	L	5	64	2.5	2			JON
1996 01 29.30		S	8.5	AA	7.0	B		10	3.7	4			DEA
1996 01 29.40		S	8.6	GA	25.2	L	4	46	5	3	?0.5	200	DID
1996 02 01.39		S	8.5	GA	25.2	L	4	46	5	5			DID
1996 02 01.70		S	8.8	AA	10.0	B		25	8	4			SEA
1996 02 02.46		S	8.9	AC	15	R	5	42	4	4			MOR03
1996 02 10.35		S	8.5	GA	25.2	L	4	46	5	5			DID
1996 02 10.82		S	8.4	AA	15	L	6	75	5	3			CLA
1996 02 12.47		S	8.6	AC	15	R	5	42	4				MOR03
1996 02 14.45		M	8.3	NP	5.0	B		10	8	4/			HAL
1996 02 15.76		S	8.5	AA	8.0	B		20	2	4			CAM03
1996 02 16.41		S	8.0	AC	15	R	5	42	4	4			MOR03

Comet C/1995 Y1 (Hyakutake) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 02 16.51		S	8.4	NP	5.0	B		10	7				HAL
1996 02 18.81		S	8.3	AA	43	L	4	60	7	6			CLA
1996 02 20.13		M	8.9	S	5.0	B		10		2			AND03
1996 02 21.20		S	7.9	AA	10.0	B		14	3	5			L0001
1996 02 21.22		S	8.8	AC	20.0	L	4	42	3				SCH04
1996 02 22.21		S	8.8	AC	20.0	L	4	42	5	7			SCH04
1996 02 23.51		M	8.6	NP	5.0	B		10	5	5			HAL
1996 02 24.87		S	8.3	AA	43	L	4	92	7	5			CLA
1996 02 28.22		B	8.9	AA	11	L	7	32	3	4			VEL03
1996 03 02.25		S	8.8	AA	15.0	L	4	26	& 3	3/			PER01
1996 03 03.43	w	S	8.7	AC	15	R	5	42	3				MOR03
1996 03 14.51		M	8.7	NP	41	L	4	72	4	4			HAL
1996 03 16.41		S	9.0	AC	15	R	5	42	3.5	3			MOR03
1996 03 17.09		E	9.7	AA	30	L	5	60	3.5	3			NEV
1996 03 17.14		S	9.6	AA	18.7	L	5	38	3	3			SHU
1996 03 17.41		S	9.0	AC	15	R	5	42	4	4			MOR03
1996 03 18.09		S	9.5	AA	18.7	L	5	38	4.5	3			SHU
1996 03 18.12		S	9.8	AA	11	L	7	32	2.0	4			VEL03
1996 03 19.07	!	S	9.3	AA	18.7	L	5	38	4	3			SHU
1996 03 19.11		S	9.8	AA	11	L	7	32	2.6	4			VEL03
1996 03 20.04		E	9.6	AA	30	L	5	60	4	3			NEV
1996 03 20.10		S	9.3:	AA	18.7	L	5	38	3	3			SHU
1996 03 21.09		S	9.5	AA	18.7	L	5	38	3	3			SHU
1996 03 22.08		S	9.4	AA	18.7	L	5	38	4	3			SHU
1996 03 23.09		S	9.2	AA	18.7	L	5	38	3	3			SHU
1996 03 23.48		S	9.1	AC	41	L	4	72	3				HAL
1996 03 24.08		E	9.8	AA	30	L	5	60	3	1			NEV
1996 03 24.08		S	9.1	AA	18.7	L	5	38	3	3			SHU
1996 03 24.41		S	9.4	AC	15	R	5	42	3	2			MOR03
1996 03 25.11		S	8.7	AA	25.2	L	4	53	4.5	3			L0001
1996 03 26.11		S	8.9	AC	13.0	L	6	36	3	4			MEY
1996 03 27.41		S	9.5	AC	15	R	5	42	3	2			MOR03
1996 03 28.11		S	8.9	AC	13.0	L	6	36	3.5	3			MEY
1996 03 31.40		S	9.5	AC	15	R	5	42	4	3			MOR03
1996 04 07.04		S	10.0	AA	11	L	7	32	5	0			BAR06
1996 04 16.09		S	10.5	TI	11	L	7	32	3.5	2/			KYS
1996 04 17.10		S	10.6:	AC	20.0	L	4	80	2	0			SCH04
1996 04 17.47		S	10.9	AC	41	L	4	72	3	1/			HAL
1996 04 18.07		M	10.7	TI	25	L	6	75	2.5	0			KUB
1996 04 19.12		M	10.4	TI	30	L	5	40	2.0	2			POP
1996 04 20.09		M	10.4	TI	35	L	5	92	3.5	2/			HOR02
1996 04 21.07		M	10.3	TI	35	L	5	92	3	2/			HOR02
1996 04 22.08		M	10.4	TI	35	L	5	92	4	2			HOR02
1996 04 24.78		M	11.0	HS	12.5	L	6	60					TSU02
1996 05 19.06		S	12.7	HS	44.5	L	5	146	0.5	3			SZE02
1996 05 24.74	a	C	14.7	GA	60.0	Y	6		1.7		3.7m	290	NAK01
1996 06 14.01		O	[13.2	HS	35	L	5	158	! 1				HOR02

Comet C/1996 B1 (Szczepanski)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 01 28.45		M	8.2	NP	5.0	B		10	11	4			HAL
1996 01 30.20		S	8.3	A	28.0	T	10	88	9	1			COM
1996 01 30.23		S	8.6	NP	20.0	L	4	42	7	2/			SCH04
1996 01 31.19		S	8.5	A	28.0	T	10	88	& 7	1/			COM
1996 01 31.23		S	8.4	NP	20.0	L	4	42	9	3			SCH04
1996 02 01.21		S	8.4	A	28.0	T	10	88	& 8	1/			COM
1996 02 01.23		S	8.3	A	20.0	L	4	42	9	3			SCH04
1996 02 01.53		S	8.5	AC	10.0	B		14	4	3			L0001
1996 02 10.24		M	8.1	NP	5.0	B		10	15	4			HAL
1996 02 10.30		S	8.9	GA	24.5	L	4	46	5.5	3/			DID
1996 02 13.40		S	8.9	GA	24.5	L	4	46	8	3			DID
1996 02 16.37		M	7.9	SC	5.0	B		10	15	4			HAL
1996 02 16.45		S	8.0	AC	3.5	B		7	13				MOR03
1996 02 17.73		S	8.7	AA	43	L	4	92	5	6			CLA

Comet C/1996 B1 (Szczepanski) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 02 18.35		S	7.9	AC	3.5	B		7	20				MOR03
1996 02 18.75		S	8.5	AA	43	L	4	60	7	6			CLA
1996 02 19.08		B	8.5	AC	10.0	B	4	20	10				NOW
1996 02 20.10		M	8.5	S	5.0	B		10		5			AND03
1996 02 20.91		S	8.6	AC	20.0	L	4	42	6	4/			SCH04
1996 02 21.04		S	8.0:	AA	6.3	B		11	10	2			LAN03
1996 02 21.07		M	8.7	S	5.0	B		10		4			AND03
1996 02 21.53		S	8.1	AC	10.0	B		14	7	4			L0001
1996 02 22.20		S	8.3	AC	20.0	L	4	42	8	3			SCH04
1996 02 23.28		S	8.2	NP	5.0	B		10	13	3			HAL
1996 02 24.72		S	8.6	AA	43	L	4	92	6	6			CLA
1996 02 27.13		S	7.0:	AA	6.3	B		11	14	3			LAN03
1996 02 28.08		S	8.8	AA	11	L	7	32	7	3			VEL03
1996 03 08.81		M	8.8	TI	5.6	R	14	40	2	2			DEM
1996 03 08.82		S	9.5	AA	11	L	7	32	5	4			VEL03
1996 03 08.92		S	8.8	A	28.0	T	10	88	& 2	2			COM
1996 03 09.77		E	10.0	AA	30	L	5	60	5	6			NEV
1996 03 09.85		S	8.6	A	28.0	T	10	88	& 3	2			COM
1996 03 09.85		S	8.7:	A	20.0	L	6	37	& 7	0/			GIL01
1996 03 10.00		S	9.7	AA	18.7	L	5	38	1.5	1			SHU
1996 03 10.19		S	8.6	NP	5.0	B		10	9				HAL
1996 03 10.82		S	8.7:	A	20.0	L	6	48	& 7	0/			GIL01
1996 03 10.84		S	8.7	A	28.0	T	10	88	& 3	2			COM
1996 03 11.10		S	8.0:	AA	6.3	B		11	12	2			LAN03
1996 03 11.22		S	9.5	AA	10.0	B		14	4	1			L0001
1996 03 11.47		S	8.4	AA	10.0	B		25					SEA
1996 03 11.84		S	9.8	AA	18.7	L	5	38	4	2			SHU
1996 03 11.87		S	8.3	A	8.0	B		15		2			COM
1996 03 11.90		S	9.2	AC	30.0	L	5	60	6	4/			SCH04
1996 03 12.12		B	9.0	AC	10.0	B	4	20	10	1			NOW
1996 03 12.46		S	8.7	AA	10.0	B		25					SEA
1996 03 12.78		E	10.1	AA	30	L	5	60	6	4			NEV
1996 03 12.82		S	9.7	AA	18.7	L	5	38	3	3			SHU
1996 03 12.87		S	8.7	A	28.0	T	10	88	> 2	2			COM
1996 03 13.00		E	10.3	AA	30	L	5	60	6	4			NEV
1996 03 13.85		S	9.8	AA	18.7	L	5	38	3	3			SHU
1996 03 14.85		S	8.6	A	28.0	T	10	88	> 3	1			COM
1996 03 15.88		S	9.8	AA	18.7	L	5	38	4.5	3			SHU
1996 03 16.14		S	9.1	AC	15	R	5	42	5	2			MOR03
1996 03 16.41		S	11.3	GA	31.7	L	5	64	1	1			JON
1996 03 16.54		S	8.3	AA	8.0	B		20	6	1			CAM03
1996 03 16.55		S	8.3	AA	20.3	L	7	56	3	2			CAM03
1996 03 16.78		E	10.5	PA	30	L	5	60	6	4			NEV
1996 03 16.95		S	9.9	AA	18.7	L	5	38	4.5	4			SHU
1996 03 17.14		S	8.9	AC	15	R	5	42	6	2			MOR03
1996 03 17.17		B	9.5	AC	10.0	B	4	20	8	1			NOW
1996 03 17.28		M	8.8	AC	41	L	4	72	5	4/			HAL
1996 03 17.43		S	8.5	AA	20.3	L	7	56	4	2			CAM03
1996 03 17.45		S	8.3	AA	8.0	B		20	6	1			CAM03
1996 03 17.84		S	9.2	AA	11	L	7	32	7	3			VEL03
1996 03 17.86		S	9.9	AA	18.7	L	5	38	4	3			SHU
1996 03 18.48		S	8.5	AA	20.3	L	7	56	3	3			CAM03
1996 03 18.49		S	8.3	AA	8.0	B		20	5	2			CAM03
1996 03 18.79		S	9.1	AA	11	L	7	32	6	3			VEL03
1996 03 18.80		S	10.0	AA	18.7	L	5	38	3.5	2			SHU
1996 03 19.77		E	10.7	PA	30	L	5	60	5	3			NEV
1996 03 19.97		S	10.4	AA	18.7	L	5	38	3	1			SHU
1996 03 20.58		S	9.4	AA	15	L	6	28	4	3			CLA
1996 03 21.76		E	10.8	PA	30	L	5	60	4	1			NEV
1996 03 21.87		S	10.6	NP	18.7	L	5	38	4	2			SHU
1996 03 22.88		S	10.5	NP	18.7	L	5	38	3.5	2			SHU
1996 03 23.93	!	E	11.0	NP	30	L	5	60	3	0			NEV
1996 03 24.08		S	10.1	AC	15	R	5	42	4	1			MOR03
1996 04 05.80		S	9.5	AA	6.3	R	13	52	7	1			KOS
1996 04 06.77		S	10.5	AA	11	L	7	32	2.5	3			BAR06

Comet C/1996 B1 (Szczepanski) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 04 06.85		S	10.7:	AC	13.0	L	6	36	3	1			MEY
1996 04 07.80	1	S	[10.5	GA	11	L	7	32	! 3				BAR06
1996 04 07.86		M	9.7:	TI	5.6	R	14	40	1	8			DEM
1996 04 08.18		S	10.9	AC	41	L	4	72	2	2			HAL
1996 04 13.19		S	9.3	AA	20.0	T	10	101	4.5	1			SPR
1996 04 15.84		S	10.3	TI	20	L	4	34	3	2			KYS
1996 04 15.85		S	10.3	AC	13.0	L	6	36	5	0			MEY
1996 04 17.21		S	12.1	AC	41	L	4	72	2	0			HAL
1996 04 27.16		J	13.9	SC	25.4	T	4		0.86	s5			ROQ

Comet C/1996 B2 (Hyakutake)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 02 01.49		M	10.1:	AC	41	L	4	72	2.5				HAL
1996 02 01.73		M	8.9	AA	10.0	B		25	4	5			SEA
1996 02 10.33		S	9.3	GA	25	L	4	49	3	4			DID
1996 02 10.78		S	8.8	AA	15	L	6	75	2	4			CLA
1996 02 13.42		S	7.5:	AA	20.0	T	10	50	1.6	4	&0.5	45	SHA04
1996 02 14.38		S	8.0	GA	11	L		50	5	3			DID
1996 02 14.45		M	8.3	NP	5.0	B		10	8	4/			HAL
1996 02 14.66		S	9.5	GA	31.7	L	5	64	2	3			JON
1996 02 15.77		S	8.3	AA	8.0	B		20	5	3			CAM03
1996 02 16.41		S	8.4	AC	15	R	5	42	4.5	4			MOR03
1996 02 16.56		M	7.7	AA	10.0	B		25		5			SEA
1996 02 17.21		B	8.7	SC	5.0	B		10		1			RAD01
1996 02 17.22		B	8.5	SC	5.0	B		10		1			VEL02
1996 02 17.22		B	8.6	SC	5.0	B		10		1			JOR
1996 02 17.60		M	7.6	AA	10.0	B		25					SEA
1996 02 17.76		M	8.4	AA	43	L	4	92	7	7	20	m 293	CLA
1996 02 18.36		S	8.2	AC	3.5	B		7	9				MOR03
1996 02 18.61		M	7.6	AA	10.0	B		25					SEA
1996 02 18.78		M	8.3	AA	43	L	4	60	7	7	0.9	295	CLA
1996 02 19.42		S	7.5	SC	25	L	4	49	5	4			DID
1996 02 19.45		S	7.4	AC	3.5	B		7	14				MOR03
1996 02 20.12		M	8.3	SC	5.0	B		10		3			AND03
1996 02 20.68		M	8.2	AA	43	L	4	60	7	7	50	m 301	CLA
1996 02 21.18		S	7.6	AA	10.0	B		14	3	5			LOO01
1996 02 21.48		S	7.5:	SC	5.0	B		10	16				HAL
1996 02 21.63		S	7.8	SC	31.7	L	5	64	4				JON
1996 02 22.76		S	7.5	AA	8.0	B		20	6	5	0.17	280	CAM03
1996 02 22.76		S	7.5	AA	20.3	L	7	56	5	s7	0.2	280	CAM03
1996 02 23.44		M	7.4	SC	5.0	B		10	14	5			HAL
1996 02 23.58		M	7.0	AA	10.0	B		25		6			SEA
1996 02 23.65		S	7.7	SC	7.8	R	7	30	5				JON
1996 02 23.74		S	6.8	AA	8.0	B		20	8	5		280	CAM03
1996 02 23.75		S	6.8	AA	20.3	L	7	56	4	7	0.30	280	CAM03
1996 02 24.36		S	7.2	AC	3.5	B		7	20	3			MOR03
1996 02 24.65					31.7	L	5	64	2	6	0.1	280	JON
1996 02 24.65		S	7.7	SC	7.8	R	7	30	2	2			JON
1996 02 24.73		S	6.6	AA	20.3	L	7	56	5	7	0.35	280	CAM03
1996 02 24.74		S	6.6	AA	8.0	B		20	8	6		280	CAM03
1996 02 24.75		M	7.9	AA	43	L	4	92	6	7	40	m 284	CLA
1996 02 24.76		M	7.4	AA	7.0	B		10	11				CLA
1996 02 25.42		S	7.1	AA	20.0	T	10	50	3.0	7	&0.5	30	SHA04
1996 02 25.43		S	7.0	SC	25	L	4	49	8	4			DID
1996 02 25.58		M	7 :	AA	10.0	B		25					SEA
1996 02 25.63					31.7	L	5	64	4	6	0.1	275	JON
1996 02 25.63		S	7.4	SC	7.8	R	7	30	4				JON
1996 02 25.67		B	7.6	SC	5.0	B		10	10	6			SEA01
1996 02 26.15		M	7.4	SC	5.0	B		10		2			AND03
1996 02 26.40		S	7.0	SC	25	L	4	49	8	4			DID
1996 02 26.42		S	7.1	AC	3.5	B		7	16	4			MOR03
1996 02 26.44		S	7.0	AA	20.0	T	10	50	2.5	7	&1	345	SHA04
1996 02 27.11		S	7.5:	AA	6.3	B		11	10	2			LAN03
1996 02 27.24		S	6.4	AA	8.0	B		11	10	3			HUR

Comet C/1996 B2 (Hyakutake) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 02 27.38		S	6.7	SC	25	L	4	49	8	4	0.08	280	DID
1996 02 27.41		S	6.7	SC	5.0	B		10	20	3			DID
1996 02 27.64					31.7	L	5	64	1	6	0.1	275	JON
1996 02 27.64		S	6.7	SC	5.0	B		7	3.5				JON
1996 02 27.86		M	7.0	SC	10.0	R	5	22	3	6	0.13		SAN03
1996 02 27.86		M	7.0	SC	10.0	R	5	22	3	6	0.13		SAN03
1996 02 28.10		B	7.2	AA	11	L	7	32	5	D6			VEL03
1996 02 28.63					31.7	L	5	64	2.5	7	0.1	270	JON
1996 02 28.63		S	7.0	SC	5.0	B		7					JON
1996 02 29.11		B	6.5	AA	3.0	O		8	18	2			SER
1996 02 29.23		S	6.1	AA	8.0	B		11	10	4			HUR
1996 02 29.38		S	6.0	SC	25	L	4	49	10	5			DID
1996 02 29.51		S	6.0	SC	5.0	B		10	15				HAL
1996 02 29.65		S	6.9	SC	5.0	B		7	7	1			JON
1996 03 01.11		M	7.3	SC	5.0	B		10		4			AND03
1996 03 01.39		S	6.0	SC	25	L	4	49	12	5			DID
1996 03 01.40		S	5.8	SC	5.0	B		10	20	6			DID
1996 03 02.50		M	6.0	SC	5.0	B		10	15		0.33	270	HAL
1996 03 03.39		S	5.8	AC	3.5	B		7	14				MOR03
1996 03 04.13		M	6.6	SC	5.0	B		10	3	4			AND03
1996 03 04.42		S	6.6	AA	20.0	T	10	50	2.1	7	&2	330	SHA04
1996 03 05.68		S	6.3	SC	7.8	R	7	30	4	2			JON
1996 03 06.12		M	6.3	SC	5.0	B		10	3.5	4			AND03
1996 03 07.48		S	5.6	SC	5.0	B		10	15				HAL
1996 03 09.30		S	5.0	SC	5.0	B		10	15				DID
1996 03 09.43		S	4.5:	AA	20.0	T	10	50	2.0	9	&2	325	SHA04
1996 03 09.67		S	4.8	SC	8.0	B		20	10	6	2		CAM03
1996 03 10.75		S	4.6	SC	8.0	B		20	10	6	2		CAM03
1996 03 10.85		S	5.5	S	20	L	7	67					VAN13
1996 03 11.38		S	4.6	SC	5.0	B		10	20	5			DID
1996 03 11.43		S	5.4	Y	5	R		7	7				JON
1996 03 11.50		S	4.6	AA	0.0	E		1					SEA
1996 03 11.67					31.7	L	5	64	4	6	0.3	270	JON
1996 03 11.67		S	5.4	Y	4.9	B		3					JON
1996 03 12.01		S	4.0	AA	4.0	B		12	10	5			FEI
1996 03 12.02		S	4.6	AA	5.0	B		10	&15	5			COM
1996 03 12.03		S	4.6	A	11	L	7	32	5.0	6			POM
1996 03 12.03		S	5.0	AA	8.0	B		15	&12	6/			SCH04
1996 03 12.07		S	4.7	A	11	L	7	32	4.5	6			POM
1996 03 12.15		S	5.2	AA	5.0	B		10	17	5			ZAN01
1996 03 12.19		S	5.7	AA	10.0	B		14	6	4			LOO01
1996 03 12.35		S	4.7:	AA	20.0	T	10	50	2.0	9	&5	255	SHA04
1996 03 12.47		B	4.5	SC	1	E		1	45				HAL
1996 03 12.50		S	4.3	AA	0.0	E		1					SEA
1996 03 12.60		M	4.7	AA	5.0	B		7	16	7	1	272	CLA
1996 03 12.61		S	4.6	AA	0.0	E		1					CLA
1996 03 12.80		S	4.6	SC	8.0	B		20	8	7	2	280	CAM03
1996 03 13.02		S	5.8	AA	30	L	5	60	10	6	0.4	275	NEV
1996 03 13.04		S	4.9	AA	18.7	L	5	38	17	6			SHU
1996 03 13.06		S	4.8	AA	5.0	B		10		5			COM
1996 03 13.07		S	4.7	A	11	L	7	32	5.3	5/			POM
1996 03 13.11		B	5.2	AA	3.0	O		8	19	4			SER
1996 03 13.15		S	4.8	AA	5.0	B		10	17	5			ZAN01
1996 03 13.25		B	5.3	AC	6.3	B	4	9	12	5	30 m	315	NOW
1996 03 13.34		S	4.6	SC	25	L	4	49	15	D6			DID
1996 03 13.35		S	4.6	SC	5.0	B		10	15	5			DID
1996 03 13.42		S	4.0:	AA	20.0	T	10	50	5.0	9	&3	300	SHA04
1996 03 13.51		S	4.0	AA	0.0	E		1					SEA
1996 03 13.64			5.4	SC	0.0	E		1	40	3	0.4		SEA01
1996 03 14.08		S	4.3	AA	8.0	B		15	&20	5			COM
1996 03 14.20		B	5.1	AA	5.0	B		7	3.5	3			SIM01
1996 03 14.20		B	5.1	AA	5.0	B		7	4	4/			SIM
1996 03 14.42		S	3.9:	AA	20.0	T	10	50	5.8	9	&3	300	SHA04
1996 03 14.44		B	3.7	SC	1	E		1	45				HAL
1996 03 14.71					31.7	L	5	64	6	7	0.3	275	JON

Comet C/1996 B2 (Hyakutake) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 03 14.71		S	4.2	Y	2.3	B		2					JON
1996 03 14.85		S	5.0	S	20	L	7	67					VAN13
1996 03 14.96		S	4.6	A	11	L	7	32	12				CHI
1996 03 15.31		S	4.2	AA	3.5	B		7	31	S5	0.6	300	MOR03
1996 03 15.38		S	3.7:	AA	20.0	T	10	50	5.3	9	&3	248	SHA04
1996 03 15.53		S	3.2	AA	0.0	E		1					SEA
1996 03 15.68		S	3.9	Y	2.3	B		2					JON
1996 03 15.69		B	4.3	AA	5.0	B		10	15	5			SAN03
1996 03 15.86		S	4.2	S	5	R	8	10		6			C0002
1996 03 15.97		S	4.0	A	11	L	7	32	14				CHI
1996 03 15.97		S	4.1	A	11	L	7	32	15		30 m		SHA06
1996 03 16.08		S	4.0	A	11	L	7	32	7.3	5/			POM
1996 03 16.15		S	4.2	AA	5.0	B		10	18	5	0.5		L0001
1996 03 16.23		S	3.4:	AA	20.0	T	10	50	3.5	9	&3	263	SHA04
1996 03 16.34		S	3.9	AA	3.5	B		7	29	S5	1.8	290	MOR03
1996 03 16.36		B	3.1	SC	1	E		1	50				HAL
1996 03 16.39		S	3.6	SC	5.0	B		10	30	D5/	3	275	DID
1996 03 16.46		S	3.7	Y	2.3	B		2	20				JON
1996 03 16.52	r	S	2.9	AA	2.5	B		2					SEA
1996 03 16.60		I	3.1	SC	0.7	E		1	&45		3		CAM03
1996 03 16.62		S	3.3	AA	0.0	E		1					CLA
1996 03 16.63		M	3.3	AA	5.0	B		10	22	7	2.1	274	CLA
1996 03 16.64		S	3.3	Y	2.3	B		2					JON
1996 03 16.64		S	3.5	Y	5	R		7					JON
1996 03 16.70		S	3.0	SC	8.0	B		20	&30	s7	7	280	CAM03
1996 03 16.71		S	2.9	Y	2.3	B		2	25				JON
1996 03 16.93		S	4.4	A	5	R	5	20					LAB
1996 03 16.95		B	3.9	AA	6.0	B		20		7			KOS04
1996 03 16.95		S	4.1	AA	18.7	L	5	38	20	5	1.2	272	SHU
1996 03 16.97		S	3.5	AA	11.0	B		20	20	7	2.5	280	NEV
1996 03 16.98		S	3.7	A	5	R	5	20	25				CHI
1996 03 16.99		S	3.9	AA	6	R	10	24	40	6	2		ROM
1996 03 17.25		B	3.0	AC	10.0	B	4	20	60	8	5	270	NOW
1996 03 17.26		S	3.6	SC	6.0	R		16	30	D5/	3	280	DID
1996 03 17.27		S	3.1:	AA	20.0	T	10	50	4.4	9	&3	270	SHA04
1996 03 17.27		S	3.6	AA	3.5	B		7	33	S5	2.7	280	MOR03
1996 03 17.37		B	2.9	SC	1	E		1	50				HAL
1996 03 17.55		S	2.8	SC	8.0	B		20	&45	s7	8	280	CAM03
1996 03 17.61		S	2.7	AA	0.0	E		1			&3.5		SEA
1996 03 17.72			3.3	AE	0.0	E		1					BER04
1996 03 17.87	!	M	3.8:	HD	3.5	O	4	7	18	6			BRU
1996 03 17.89		S	3.7	AA	3	R	5	6	20	5	1	266	SHU
1996 03 17.89		S	3.7	AA	18.7	L	5	38	25	6	2	266	SHU
1996 03 17.93		S	3.9	A	5	R	5	20	6				LAB
1996 03 17.93		S	4.0	A	6.0	B		20	20				SHA06
1996 03 17.95		S	3.5	AA	3.0	O		8	25	5	2.3		NEV
1996 03 17.95		S	3.7	AA	6	R	10	24	50	7	4		ROM
1996 03 18.02		S	3.9	Y	6.5	L	8	33		8			MOS03
1996 03 18.03		B	4.2:	AA	5.0	B		7		8		270	HOM
1996 03 18.04		S	3.7	AA	0.0	E		1	45	D4			VEL03
1996 03 18.06	!	M	3.7	HD	5	R	4	7	22	7	0.4		BRU
1996 03 18.11		S	3.5	AA	5.0	B		7	45	S3	5	264	VEL03
1996 03 18.15		B	3.3	AC	5.0	B	4	10	90	7	8	280	NOW
1996 03 18.22		S	2.8:	AA	20.0	T	10	50	5.7	9	&3	270	SHA04
1996 03 18.38		S	3.6	SC	6.0	R		16	30	D5/	3	275	DID
1996 03 18.45		S	3.6	Y	2.3	B		2					JON
1996 03 18.58		I	2.5	SC	0.7	E		1	&50		10	280	CAM03
1996 03 18.59		S	2.5	SC	8.0	B		20	&60	s7	8	280	CAM03
1996 03 18.62		S	2.7	AA	0.0	E		1			2.5	267	CLA
1996 03 18.63		M	2.7	AA	5.0	B		10	34	7	3.4	267	CLA
1996 03 18.70		M	3.2	AA	3.0	B		7	40	6	4		SAN03
1996 03 18.87		S	3.2	S	5	R	8	10		7			C0002
1996 03 18.90		S	3.0	A	5	R	5	20	27		2.0	290	CHI
1996 03 18.93		S	3.5	A	6.0	B		20					SHA06
1996 03 18.94		G	2.7	AA	0.0	E		1	25	5	3.5	259	GOL

Comet C/1996 B2 (Hyakutake) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 03 18.94		S	2.7	HD	5	R		20	15				SAN07
1996 03 19.00		M	3.5	AA	3	R	5	6	20	5	2	270	SHU
1996 03 19.00		M	3.5	AA	18.7	L	5	38	25	6	3.9	270	SHU
1996 03 19.04	!	G	3.4	HD	0.0	E		1	31	6	0.7	250	BRU
1996 03 19.06					5.0	B		7	34	S3	4	272	VEL03
1996 03 19.06		G	3.1	AA	0.0	E		1					VEL03
1996 03 19.07					11.0	L	7	32	18	S3	2.5	268	VEL03
1996 03 19.07	!	M	3.4	HD	11	L	7	32	20	7	0.3	270	BRU
1996 03 19.38		B	2.5	SC	1	E		1	72		15	273	HAL
1996 03 19.53	r	S	2.2	AA	2.5	B		2			6	265	SEA
1996 03 19.59		S	2.4	AA	0.0	E		1			2.5	264	CLA
1996 03 19.60		M	2.5	AA	8.0	B		15	35	7	4.5	264	CLA
1996 03 19.65		S	2.7	Y	2.3	B		2	30				JON
1996 03 19.73			2.5	AE	0.0	E		1					BER04
1996 03 19.87		S	2.8	S	5	R	8	10		7			C0002
1996 03 19.88		I	2.6	AA	0.0	E		1			15	270	TSU02
1996 03 19.89		S	3.5	A	5	R	5	20	10				LAB
1996 03 19.91		S	2.6	AA	11.0	B		20	23	8	3.5	268	NEV
1996 03 19.94		G	2.5	AA	0.0	E		1	30	5	1.5	264	GOL
1996 03 19.94		S	2.4	A	5	R	5	20	35		3.33	285	CHI
1996 03 19.95		S	3.1	AA	6	R	10	24	55	9	5		ROM
1996 03 19.97		M	3.1	Y	5.0	B		7	60		3		POP
1996 03 20.03	!	G	3.1	HD	0.0	E		1		7			BRU
1996 03 20.08		M	3.0	AA	18.7	L	5	38	30	6	3	265	SHU
1996 03 20.09					5.0	B		7	20	S4	3	256	VEL03
1996 03 20.09		G	2.5	AA	0.0	E		1					VEL03
1996 03 20.09	!	M	3.2	HD	3.5	O	4	7	28	7	0.4	242	BRU
1996 03 20.10		S	1.7	S	10	B	4	25	20	8	0		HAL04
1996 03 20.16		B	4.1	AA	5.0	B		7	15	6			SIM01
1996 03 20.17		B	3.8	AA	5.0	B		7	20	5/	40 m		SIM
1996 03 20.19			3.3	AA	0.0	E		1	30	2	40 m	260	SIM
1996 03 20.24		M	2.8	Y	5.0	B		7	60		3.5		POP
1996 03 20.43		S	2.2:	AA	20.0	T	10	50	6.9	9	&5	270	SHA04
1996 03 20.60		S	2.1	AA	0.0	E		1			2.8	258	CLA
1996 03 20.60	r	S	1.7	AA	2.5	B		2		8			SEA
1996 03 20.61		M	2.2	AA	8.0	B		15	41	6	6	258	CLA
1996 03 20.63			3.9	SC	0.0	E		1	60		1.0		SEA01
1996 03 20.64		S	1.9	Y	2.3	B		2	45				JON
1996 03 20.79		I	1.8	SC	0.7	E		1			10	280	CAM03
1996 03 20.83		S	2.2	A	6.0	B		20	40				SHA06
1996 03 20.88		I	2.1	AA	0.0	E		1			19	258	TSU02
1996 03 20.89			3.0:	A	0.0	E		1					LAB
1996 03 20.90		S	2.0	AA	6	R	10	24	60	9	15		ROM
1996 03 20.91		B	2.6	SC	8.0	B		8		6			GRA07
1996 03 20.91		S	2.5	S	5	R	8	10		8	3		C0002
1996 03 20.92					8.0	B		11	60	6	9	225	STO
1996 03 20.92		S	2.2	AA	0.0	E		1					STO
1996 03 20.93		B	2.6	SC	0.0	E		1		7			RAD01
1996 03 20.94		M	3.1	SC	5.0	B		10		7	5		AND03
1996 03 20.95		B	2.4	SC	0.0	E		1			5		VEL02
1996 03 20.96	!	G	2.5	HD	5	R	4	7	40	7	1.2	240	BRU
1996 03 20.97		B	2.5	SC	0.0	E		1					JOR
1996 03 20.98		B	2.9	SC	5.0	B		8					KOL05
1996 03 20.99		B	2.7	SC	8.0	B		8	60	7	9		RAD01
1996 03 20.99		M	2.8	SC	0.0	E		1	48	5	3		AND03
1996 03 20.99		S	2.5	AA	5.0	B		10	25	4			ZAN01
1996 03 21.01		B	2.6	SC	5.0	B		10	60	7	6		GRA07
1996 03 21.03		S	2.0	AA	5.0	B		7	35	S5	6	242	KOS
1996 03 21.04		B	2.8	SC	5.0	B		10	90	6	5		JOR
1996 03 21.05		S	2.5	A	6.0	B		20	90	6	8	260	POM
1996 03 21.06		S	1.6	S	10	B	4	25	30	8	&0.5		HAL04
1996 03 21.08		S	1.6	S	10	B	4	25	30	8	&0.5		HAL04
1996 03 21.17			3.0	AA	0.0	E		1		7			SIM01
1996 03 21.17			3.3	AA	0.0	E		1		2	1.5	260	SIM
1996 03 21.24		S	4 :	AA	5.0	B		7	&30	7	5	270	WAR

Comet C/1996 B2 (Hyakutake) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 03 21.28		B	2.0	SC	1	E		1	72		19	258	HAL
1996 03 21.29		S	1.5:	AA	20.0	T	10	50	16.5	9	10	320	SHA04
1996 03 21.52	r	S	0.7	AA	2.5	B		2					SEA
1996 03 21.66			2.2	AE	0.0	E		1	30		1		BER04
1996 03 21.75		I	1.3	SC	0.7	E		1	&60		30	280	CAM03
1996 03 21.80		S	1.4:	AA	3.5	O		7	30	8	3		KOL04
1996 03 21.87			2.7	A	0.0	E		1					LAB
1996 03 21.87		I	1.0	AA	0.0	E		1			22	247	TSU02
1996 03 21.88		G	1.9	AA	0.0	E		1	30	6	2	277	GOL
1996 03 21.88	!	S	2.3	HD	5	R	4	7	35	6	1.5	245	BRU
1996 03 21.90		S	1.8	HD	0.0	E		1	30				SAN07
1996 03 21.92		S	1.6	AA	11.0	B		20	40	8	12	257	NEV
1996 03 21.92		S	2.5	A	6.0	B		20	50		3		SHA06
1996 03 21.96		M	2.8	AA	3	R	5	6	34	5	6	235	SHU
1996 03 21.96		M	2.8	AA	18.7	L	5	38	40	6	4.5	235	SHU
1996 03 21.97		M	2.2	Y	8.0	B		10	90		10		POP
1996 03 22.00		B	1.7	AA	6.0	B		20		7			KOS04
1996 03 22.05		S	1.5	AA	5.0	B		7	44	S5	7	238	KOS
1996 03 22.16		S	1.8	AA	6	R	10	24	70	9	20		ROM
1996 03 22.18			2.0	AA	0.0	E		1	10	6			SIM01
1996 03 22.19			1.6	AA	0.0	E		1	21	3	7		SIM
1996 03 22.22		S	1.0:	AA	20.0	T	10	50	23.2	9	10	355	SHA04
1996 03 22.24		M	2.0	Y	8.0	B		10	90		12		POP
1996 03 22.39		S	0.5	AA	0.7	E		1	48	S5	8.5	220	MOR03
1996 03 22.42		B	0.5	AA	0.0	E		1					SCH12
1996 03 22.54	r	S	0.3	AA	2.5	B		2					SEA
1996 03 22.68		I	0.3	SC	0.7	E		1	&70		40	280	CAM03
1996 03 22.84			1.7	SC	0.0	E		1	60				SEA01
1996 03 22.84		B	1.5	SC	5.0	B		10	60				SEA01
1996 03 22.85		G	1.2	AA	0.0	E		1	48	D4			VEL03
1996 03 22.87		B	1.2	AA	3.0	O		10		7	2.5		ORE
1996 03 22.88		S	1.6	HD	0.0	E		1	30	6			SAN07
1996 03 22.88	!	M	2.3	HD	3.5	O	4	7	56	7	4.8	235	BRU
1996 03 22.90		G	1.0	AA	0.0	E		1	40	7	2		GOL
1996 03 22.91			1.0:	A	0.0	E		1					LAB
1996 03 22.91		I	1.0	SC	0.0	E		1	120	5	20	250	MOR04
1996 03 22.96		S	1.2	AA	5.0	B		7	46	S6	6	230	KOS
1996 03 22.98		S	1.3:	AE	5.0	B		7	20				VET
1996 03 23.00		S	0.8:	AA	3.5	O		7	60	8	10		KOL04
1996 03 23.00		S	1.3	AA	5.0	B		10	28	4			ZAN01
1996 03 23.02		S	1.0	S	0.7	E		1			5	245	THO03
1996 03 23.09					5.0	B		7	54	S5	13.5	248	VEL03
1996 03 23.09		G	0.9	AA	0.0	E		1					VEL03
1996 03 23.13		S	1.5	SC	6.0	R		16	60	7		255	DID
1996 03 23.16			1.5	AA	0.0	E		1	40	5	10		SIM
1996 03 23.17		S	0.7:	AA	10.0	T	10	42	11.1	9	15	12	SHA04
1996 03 23.19		B	0.9	AA	0.0	E		1			12	210	SCH12
1996 03 23.27		S	2 :	AA	5.0	B		7	&45	7	8		WAR
1996 03 23.41		B	0.8	SC	1	E		1	90		30	238	HAL
1996 03 23.64		I	0.2	AA	0.0	E		1			32	238	TSU02
1996 03 23.66		S	0.2	AA	0.0	E		1	72	5	39		CLA
1996 03 23.68		M	1.2	SC	3.0	B		7	50	6	8		SAN03
1996 03 23.70		I	0.1	SC	0.7	E		1	&90		50	280	CAM03
1996 03 23.75			0.2	SC	0.0	E		1	60	2	12		SEA01
1996 03 23.75		B	0.4	SC	5.0	B		10	60	2	6		SEA01
1996 03 23.76	!	M	1.1	HD	3.5	O	4	7	58	7	4.9	245	BRU
1996 03 23.80		S	0.2:	AA	3.5	O		7	80	8	15		KOL04
1996 03 23.85		O	2.0:	Y	0.0	E		1			12	230	DEM
1996 03 23.86		S	1.0	HD	0.0	E		1	45		>4	230	SAN07
1996 03 23.87		B	0.6	AA	3.0	O		10	60	7	10		ORE
1996 03 23.87		B	1.2	SC	8.0	B		8					RAD01
1996 03 23.87		B	1.3	SC	0.0	E		1					RAD01
1996 03 23.88		G	0.5	AA	0.0	E		1	60	7	10	220	GOL
1996 03 23.89			0.5	A	0.0	E		1	30		10		LAB
1996 03 23.90		S	0.7	AA	11.0	B		20	70	8	18	225	NEV

Comet C/1996 B2 (Hyakutake) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 03 23.94					8.0	B		11	90	7	5	237	STO
1996 03 23.94		M	1.4	SC	0.0	E		1		5	4		AND03
1996 03 23.94		S	0.8	AA	0.0	E		1					STO
1996 03 23.95		S	1.4	S	5	R	8	10		8	14		C0002
1996 03 23.96		G	0.7	SP	0.7	E		1	78	5	4	205	MCK
1996 03 23.96		M	1.5	Y	8.0	B		10	90		10		POP
1996 03 23.96		S	0.8	S	0.7	E		1			8	235	TH003
1996 03 23.99	!	G	1.0	HD	0.0	E		1	63	7	7.8		BRU
1996 03 24.11		M	1.6	SC	5.0	B		10	36	7	14.10		AND03
1996 03 24.12		G	-0.3	SP	0.7	E		1	60	8	7	220	MCK
1996 03 24.12		S	1.0	AA	6	R	10	24	80	9	25		ROM
1996 03 24.13					5.0	B		7	65	S5	10	226	VEL03
1996 03 24.13		G	0.6	AA	0.0	E		1					VEL03
1996 03 24.13		M	1.4	SC	0.0	E		1		5	10		AND03
1996 03 24.18			0.5	AA	0.0	E		1	20	5	14		SIM
1996 03 24.18			1.0	AA	0.0	E		1	15	8	10		SIM01
1996 03 24.22		B	0.2	SC	1	E		1	60		31	225	HAL
1996 03 24.23		B	0.0	AC	0.0	E		1					NOW
1996 03 24.39		S	0.4	AA	0.7	E		1	66	S5	19	225	MOR03
1996 03 24.79		S	-0.2	AA	0.0	E		1	66	5	57		CLA
1996 03 24.80		B	1.7	Y	10	B	4	25					ROT01
1996 03 24.80		M	0.8	SC	0.0	E		1	60	5	30		AND03
1996 03 24.81		S	1.6	S	10	B	4	25	50	8	0		HAL04
1996 03 24.82		P	0.1	AE	3.6	A	1		20		25		VET
1996 03 24.83			0.5	A	0.0	E		1	30		15		LAB
1996 03 24.87		B	0.3	AA	3.0	O		10	80	8	16		ORE
1996 03 24.87		G	0.3	AA	0.0	E		1	50	6	25	227	GOL
1996 03 24.89		G	0.2	SP	0.7	E		1	60	8			MCK
1996 03 24.90		M	0.5	SC	0.0	E		1		7			RAD01
1996 03 24.90		M	1.2	SC	0.0	E		1					KOL05
1996 03 24.90		S	-0.8	AA	2.5	R	8	8	36	6	41		L0001
1996 03 24.96		M	1.2	Y	8.0	B		10	90		10		POP
1996 03 24.98		M	0.7	AA	3	R	4	7		6			MAI
1996 03 24.99		B	0.8	SC	0.0	E		1	60	7	35		JOR
1996 03 24.99		M	0.7	SC	0.0	E		1	60	5	35		AND03
1996 03 25.00		B	0.0	AA	3.0	O		10	80	8	40		ORE
1996 03 25.01		B	0.8	SC	0.0	E		1		7			RAD01
1996 03 25.02		S	0.0	AA	2.5	R	8	8	60	6	41		L0001
1996 03 25.03		M	0.9	SC	5.0	B		10	54	7	32		AND03
1996 03 25.04		S	0.0	AE	0.7	E		1	25		45		VET
1996 03 25.07		S	-0.2:	AA	0.0	E		1	&90	5/	&6	220	SCH04
1996 03 25.10		B	0.6	AA	0.0	E		1			27	170	SCH12
1996 03 25.12			0.5	AA	0.0	E		1	23	5	24		SIM
1996 03 25.19		S	0.2:	AA	20.0	T	10	50	15.0	9	20	210	SHA04
1996 03 25.28		B	0.1	SC	1	E		1	78		54	215	HAL
1996 03 25.75		M	0.5	SC	3.0	B		7	90	4	40		SAN03
1996 03 25.75	!	G	1.0	HD	0.0	E		1	67	7	12	226	BRU
1996 03 25.80		S	-0.2	SC	0.0	E		1		S6			DER02
1996 03 25.82		M	-0.6	AA	0.6	E		1	64	7	37		MEY
1996 03 25.83		M	-0.3	S	0.0	E		1	95	5	33	165	HOR02
1996 03 25.84		M	-0.3	AA	5.0	B		10		S8			MEY
1996 03 25.84		S	0.8	HD	0.0	E		1	30	6	>4	230	SAN07
1996 03 25.85		S	0.5	AA	5.0	B		10		4	&1		GRA06
1996 03 25.85		S	1.0:	AA	0.0	E		1	&40	7			FEI
1996 03 25.86					5.0	B		7	42	S5	6	216	VEL03
1996 03 25.86		G	0.3:	AA	0.0	E		1	40	D4	6	207	VEL03
1996 03 25.86		O	1.3:	Y	0.0	E		1	60				DEM
1996 03 25.89		S	1.2	S	10	B	4	25	45	8	2.5	210	HAL04
1996 03 25.90		G	0.0	AA	0.0	E		1	60	4	10	210	GOL
1996 03 25.92		O	1.5	S	0.8	E		1		7	5.5		VET01
1996 03 25.95		S	0.0	AA	3.5	O		7	80	8	40		KOL04
1996 03 25.96		B	-0.5	AA	0.0	E		1	120	6	20		JOH01
1996 03 25.96		S	-0.3	AA	0.0	E		1	&90	4	13	210	SCH04
1996 03 25.97		G	0.5	AA	0.0	E		1	85	6	43	195	NEV
1996 03 25.99		M	0.6	S	0.0	E		1	66				KUB

Comet C/1996 B2 (Hyakutake) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 03 25.99		S	-0.5:	AA	0.0	E		1	95	4	42	204	LAN01
1996 03 26.00		B	0.0	AA	5.0	B		10	50	4	4	220	ZAN01
1996 03 26.10		M	0.0	AA	5.0	B		10	57	S7			MEY
1996 03 26.10		M	-0.3	AA	0.6	E		1	64	S7	54		MEY
1996 03 26.10		S	1.0	S	10	B	4	25	60	8	3.5	220	HAL04
1996 03 26.12		B	-0.5	AC	0.0	E		1					NOW
1996 03 26.15		B	0.1	SC	1	E		1	78		56	204	HAL
1996 03 26.75		B	0.8	AA	3.0	O		10	70	7	35		ORE
1996 03 26.75		S	0.2	AA	3.5	O		7	70	8	15		KOL04
1996 03 26.79		S	-0.1	AA	5.0	B		7	50	s6	17.5	180	KOS
1996 03 26.81	!	G	0.9	HD	0.0	E		1	48	6	32	222	BRU
1996 03 26.82					5.0	B		7	40	S4	5	168	VEL03
1996 03 26.83		B	0.5	AA	5.0	B		10	50	4	10	180	ZAN01
1996 03 26.84		M	0.5	Y	8.0	B		10	180		12		POP
1996 03 26.85		S	0.5	AA	5.0	B		10		3/	20		GRA06
1996 03 26.85		S	0.5	HD	0.0	E		1	75	6	15	180	SAN07
1996 03 26.88		G	0.5	AA	0.0	E		1	20	4	&3		GOL
1996 03 26.88		S	0.6	AA	0.0	E		1		7	45		FEI
1996 03 26.88		S	2.0	LN	0.7	E		1	30				HEA02
1996 03 26.91		S	-1.2	SC	5.0	B		10	35	6	15	214	CLE
1996 03 26.95		B	0.4	SC	0.0	E		1		7	30		RAD01
1996 03 26.96		S	0.7	S	0.7	E		1			10	155	THO03
1996 03 26.98		B	1.4	SC	5.0	B		10	90	7	30		JOR
1996 03 26.98		M	1.0	SC	0.0	E		1	48	5	45		AND03
1996 03 26.99		B	1.0	SC	0.0	E		1		6	35		KOL05
1996 03 27.00		B	0.8	SC	0.0	E		1	60	6	55		JOR
1996 03 27.01		B	0.9	SC	0.0	E		1	48	6	50		VEL02
1996 03 27.01		S	-1.2	SC	5.0	B		10	35	6	17	170	CLE
1996 03 27.02		B	0.5	AA	5.0	B		10	110	4	35	170	ZAN01
1996 03 27.02		B	1.0	SC	0.0	E		1	42	6	45		KOL05
1996 03 27.03		B	0.9	SC	0.0	E		1			50		BOJ01
1996 03 27.03		M	1.4	SC	5.0	B		10		7			AND03
1996 03 27.04		B	-0.5	AA	0.0	E		1	&90	6	45		JOH01
1996 03 27.05		S	0.5	SC	6.0	R		16	60	6		180	DID
1996 03 27.05		S	-0.2	AA	0.0	E		1	&90	4	65	142	SCH04
1996 03 27.06		B	1.2	SC	0.0	E		1		6			RAD01
1996 03 27.06		M	-0.2:	AA	0.0	E		1	60	3	78	130	LAN01
1996 03 27.07		S	-0.3	AA	4.8	R	3	7	100	7	65	135	BUS01
1996 03 27.08		M	1.5	AA	10	R	5	25	45	5			SHU
1996 03 27.08		M	-0.2	AA	0.0	E		1	&60	7	60	185	COM
1996 03 27.08		S	0.9	SP	0.7	E		1	50		40	130	ALD01
1996 03 27.08		S	1.0:	AA	0.0	E		1	60	2/	23	180	GIL01
1996 03 27.10		S	0.8:	AA	8.0	R	7	16		7	6		WAR
1996 03 27.11		M	-0.2	SC	0.7	E		1	&90	6	10	117	DAH
1996 03 27.12		B	-0.2	AC	0.0	E		1					NOW
1996 03 27.18		S	0.6	AA	2.5	R	8	8	39	6	27		LOO01
1996 03 27.33		S	0.2:	AA	20.0	T	10	50		9	15	345	SHA04
1996 03 27.35		B	-0.2	AC	0.0	E		1					NOW
1996 03 27.36		S	0.8	AA	0.7	E		1	55	S6	23	85	MOR03
1996 03 27.43		B	1.0	SC	1	E		1	60		70	74	HAL
1996 03 27.81		M	1.2	SC	3.0	B		7	60	6	30		SAN03
1996 03 27.83		B	1.2	Y	10	B	4	25					ROT01
1996 03 27.83		O	1.6	S	0.8	E		1		6	4		VET01
1996 03 27.84		M	0.7	Y	8.0	B		10	180		15		POP
1996 03 27.85		S	0.5	AA	5.0	B		10	50	4	8	70	ZAN01
1996 03 27.87		S	1.0	S	0.7	E		1			6	61	THO03
1996 03 27.88		B	0.0	AA	0.0	E		1	&60	7	20		JOH01
1996 03 27.88		S	1.0	AE	0.7	E		1			5		VET
1996 03 27.89		B	1.6	AA	4.0	B		8					TAY
1996 03 27.89		S	1.0:	AA	0.7	E		1	60	5			LAN03
1996 03 27.92		S	1.5	SC	8.0	B		11			5		GAI
1996 03 27.92		S	1.5:	AA	6.3	B		11	180	6	6		LAN03
1996 03 27.96	!	G	1.4	HD	0.0	E		1	39	6	17		BRU
1996 03 27.98					5.0	B		7	31	S4	4	59	VEL03
1996 03 27.98		G	1.0	AA	0.0	E		1					VEL03

Comet C/1996 B2 (Hyakutake) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 03 28.04		I	0.9	SC	0.0	E		1	30	5	55	52	MOR04
1996 03 28.06		O	0.8	S	0.0	E		1	120	8	50	60	HAL04
1996 03 28.08		M	0.8	AA	0.6	E		1	52	S7	63		MEY
1996 03 28.08		M	1.2	AA	5.0	B		10	48	S8			MEY
1996 03 28.09		S	0.8	AA	2.5	R	8	8	32	7			L0001
1996 03 28.09		S	1.2	AA	6	R	10	24	65	7	25		ROM
1996 03 28.10					5.0	B		7	36	S4	10	55	VEL03
1996 03 28.10		G	1.2	AA	0.0	E		1			37	55	VEL03
1996 03 28.17		M	0.9	Y	8.0	B		10	180		32		POP
1996 03 28.19		M	0.5	SC	0.7	E		1	57	7/	50	59	DAH
1996 03 28.22		B	1.3	SC	1	E		1	48		34	55	HAL
1996 03 28.27		B	1.3	AC	0.0	E		1					NOW
1996 03 28.36		S	1.2	AA	0.7	E		1	40	S6	10	55	MOR03
1996 03 28.78					5.0	B		7	40	S4	10	51	VEL03
1996 03 28.79		B	1.6	AA	3.0	O		10		5	3		ORE
1996 03 28.80					8.0	B		11	60	6	20	24	STO
1996 03 28.80		G	1.4	AA	0.0	E		1			17	51	VEL03
1996 03 28.80		S	1.0	AA	0.0	E		1					STO
1996 03 28.88		G	1.5	AA	0.0	E		1	20	4	3		GOL
1996 03 28.89		G	0.7	SP	0.7	E		1	43	6	5.5	70	MCK
1996 03 28.92		O	1.0	S	0.0	E		1		8	15		HAL04
1996 03 28.95		S	0.1	LN	0.7	E		1					HEA02
1996 03 28.95		S	0.5	SC	5.0	B		10	23	6		65	CLE
1996 03 29.02		S	1.0	SC	8.0	B		11			6.5		GAI
1996 03 29.03	!	G	1.5	HD	0.0	E		1	41	7	29		BRU
1996 03 29.07		S	1.4	AA	0.7	E		1	32	S7	7	45	MOR03
1996 03 29.13		S	0.0:	AA	0.0	E		1	&60	4/	35	47	SCH04
1996 03 29.15		S	0.5:	SC	0.7	E		1	34	7	8	58	DAH
1996 03 29.18		B	2.4	AA	4.0	B		8	13	6	1.3	53	TAY
1996 03 29.80		M	1.7	Y	8.0	B		10	120		10		POP
1996 03 29.83		B	0.5	AA	0.0	E		1	&30	7	10		JOH01
1996 03 29.85		S	1.5	HD	0.0	E		1	30	5	4		SAN07
1996 03 29.86		G	1.0	SP	0.7	E		1	30	5	5.5	70	MCK
1996 03 29.86		S	0.5	SC	8	R	7	20	23	6	4.6	45	CLE
1996 03 29.88		S	1.0	S	0.7	E		1			2.5	55	THO03
1996 03 29.89		B	1.7	AA	4.0	B		8	22	6/	2.6	53	TAY
1996 03 29.89		G	1.0	SC	0.7	E		1	20	8			GAI
1996 03 29.91		S	0.5	AA	5.0	B		10		4	>20		GRA06
1996 03 29.96		B	1.0	AA	5.0	B		10	50	3	4	45	ZAN01
1996 03 29.96		M	2.6	SC	5.0	B		10	20	5	10		AND03
1996 03 30.04		S	1.5	AA	0.7	E		1	25	S7	4	50	MOR03
1996 03 30.12		B	1.2	SC	1	E		1	30		10	48	HAL
1996 03 30.14		S	0.5:	AA	0.0	E		1	40	5	13	40	LAN01
1996 03 30.14		S	2.1	AA	2.5	R	8	8	22	7	32		L0001
1996 03 30.15		S	0.7:	AA	20.0	T	10	50	9.8	9	10	40	SHA04
1996 03 30.16		M	1.3	SC	0.7	E		1	28	6	11	55	DAH
1996 03 30.75		S	1.6	AA	5.0	B		7					KOS
1996 03 30.81		S	2.2	AA	2.5	R	8	8	30	8	5		L0001
1996 03 30.82					5.0	B		7	17	S5	6	45	VEL03
1996 03 30.82		G	1.6	AA	0.0	E		1					VEL03
1996 03 30.83		B	2.7	SC	5.0	B		10	60	2	6		RAD01
1996 03 30.83	a	S	1.2	AA	4.8	R	3	7	65	7	25	45	BUS01
1996 03 30.84		S	1.6	HD	0.0	E		1	20	5	3		SAN07
1996 03 30.85		B	1.6	SC	0.0	E		1					VEL02
1996 03 30.85		B	2.1	SC	5.0	B		10		4			JOR
1996 03 30.85		B	2.4	SC	5.0	B		10	20		1.5		VEL02
1996 03 30.85		O	1.8	S	0.0	E		1	50	5/	3		KON06
1996 03 30.86		M	2.1	SC	5.0	B		10	20	6	2.3		AND03
1996 03 30.88		B	1.3	AA	5.0	B		10	37	3	8	40	ZAN01
1996 03 30.88		S	0.4	AA	0.0	E		1	30	6	12	46	SCH04
1996 03 30.88		S	1.0	AA	5.0	B		10	&30	4	>4		GRA06
1996 03 30.88		S	1.0	S	0.7	E		1			1.5	53	THO03
1996 03 30.90		B	0.8	AA	0.0	E		1	&20	7	8		JOH01
1996 03 30.90		S	1.2	AE	0.7	E		1			6		VET
1996 03 30.90		S	2.5:	AA	0.7	E		1	15	5			LAN03

Comet C/1996 B2 (Hyakutake) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 03 30.91		G	1.0	SP	0.7	E		1	25	5	5.5	40	MCK
1996 03 31.09		S	2.6	AA	2.5	R	8	8	8	8	5		L0001
1996 03 31.11		M	1.9	AA	3.5	B		7	19	S6	2.5	40	MOR03
1996 03 31.12		B	1.9	AC	8.0	B	4	11	120	9	10	0	NOW
1996 03 31.80		S	2.9	AA	5.0	B		7	30	8		50	COL03
1996 03 31.83		S	2.1	AA	5.0	B		7	22	S6	9	52	KOS
1996 03 31.85		S	1.7	AA	4.8	R	3	8	20	8			FEI
1996 03 31.85		S	1.8	AA	6.0	B		20	12	8	5		L0001
1996 03 31.86		S	2.2	AA	4.0	B		8	20	6	4	46	SCH04
1996 03 31.87		B	2.0	AA	4.0	B		8	15	6	2.2	51	TAY
1996 03 31.88		S	1.5	S	0.7	E		1			2	48	THO03
1996 03 31.89		S	1.5	AA	5.0	B		10	&30	4	>5		GRA06
1996 03 31.90		S	1.0	AE	0.7	E		1			8		VET
1996 03 31.91		B	1.6	AA	5.0	B		10	37	3	8	48	ZAN01
1996 04 01.06					5.0	B		10	15	6	4.5	55	BOR
1996 04 01.06	a	I	2.1	HP	0.0	E		1					BOR
1996 04 01.06	a	S	1.7	HP	0.0	E		1	36	6	3.0	55	BOR
1996 04 01.14		B	1.8	SC	1	E		1	30		8	55	HAL
1996 04 01.21		S	2.1	AA	0.0	E		1	&20	7/	1.5	35	SPR
1996 04 01.50		B	2.2	AA	3.0	B		7	30	6	3		SAN03
1996 04 01.74		B	3.2	SC	8.0	B		8					VEL02
1996 04 01.76		S	2.5	AA	5.0	B		7	12	S5	4	52	VEL03
1996 04 01.80		M	2.2	Y	8.0	B		10	90		5.3		POP
1996 04 01.81		B	2.5	SC	11	B		20	&30	5			ISH03
1996 04 01.82		S	2.5	AA	5.0	B		7	15	S6	7	52	KOS
1996 04 01.83					11	L	7	32	9	S4	2.5	57	VEL03
1996 04 01.83		G	2.3	SP	0.7	E		1	25	4	6	50	MCK
1996 04 01.83		O	2.4	S	0.0	E		1	50	6	3		KON06
1996 04 01.83		S	2.0	AA	4.8	R	3	8	15	8			FEI
1996 04 01.84		M	2.8	SC	5.0	B		10	15	6	3		AND03
1996 04 01.85		B	2.9	SC	5.0	B		10		6	3		JOR
1996 04 01.85		S	2.0	S	3.4	R	4	7	24	7	>8	45	BUS01
1996 04 01.86		S	0.1	SC	5.0	B		10	15	6	3	45	CLE
1996 04 01.87		S	2.1	AA	2.5	R	8	8		8	2		L0001
1996 04 01.87		S	2.7	SC	8.0	B		11			>5		GAI
1996 04 01.88		B	2.5	AA	5.0	B		10	25	3	4	50	ZAN01
1996 04 01.89		S	2.2	AA	4.0	B		8	18	6/	2.5	50	SCH04
1996 04 01.91		S	2.0:	AA	5.0	B		10	&30	4	>5		GRA06
1996 04 01.94		S	1.5	AE	0.7	E		1			12		VET
1996 04 02.11		M	2.7	AA	3.5	B		7	10	S7	3.5	50	MOR03
1996 04 02.73		G	2.5:	AA	0.0	E		1		6			KOS04
1996 04 02.83		G	2.1	SP	0.7	E		1	25	4	4.5	55	MCK
1996 04 02.83		S	2.2	AA	2.5	R	8	8	9	8	2		L0001
1996 04 02.85		P	2.5:	SC	2.5	A	4			4			FIL05
1996 04 02.85		S	2.0	AA	0.0	E		1	&25	6	&5	250	COM
1996 04 02.86		S	2.5	AA	5.0	B		10	9	7/	1.7	49	ABB
1996 04 03.02		S	3.8	AA	3.5	B		7			2.5		L0001
1996 04 03.03			4.4	AA	5.0	B		7	5	7	2		SIM
1996 04 03.05					5.0	B		10	10	6/	3.6	53	BOR
1996 04 03.05		B	2.8	AA	2.0	B		8	15			130	SCH12
1996 04 03.05	a	B	2.0	HP	0.0	E		1					BOR
1996 04 03.05	a	I	2.1	HP	0.0	E		1					BOR
1996 04 03.05	a	S	1.7	HP	0.0	E		1	30	5/	7.0	53	BOR
1996 04 03.13		S	1.5	AA	20.0	T	10	50	7.8	9		10	SHA04
1996 04 03.74		M	2.4	AA	3	R	4	7	15	5	1		MAI
1996 04 03.84		G	2.0	SP	0.7	E		1	20	4	4	40	MCK
1996 04 03.85		S	3.6	AA	5.0	B		10	12	5	2.0	53	TAY
1996 04 03.86		S	2.1	AA	4.0	B		8	&12	6/	1.5	45	SCH04
1996 04 03.91		S	2.6	AA	5.0	B		10	9	7	1.1	40	ABB
1996 04 03.99		B	2.2	AA	5.0	B		10	40	4	6	50	ZAN01
1996 04 03.99		S	3.0:	SC	0.7	E		1			2.5		GAI
1996 04 04.00		S	2.1	AA	0.0	E		1	&25	6	&8	270	COM
1996 04 04.01		S	2.1	AA	5.0	B		10	9	7	3.6	49	ABB
1996 04 04.05		B	2.7	AA	2.0	B		8			3	140	SCH12
1996 04 04.08		S	1.7	AA	20.0	T	10	50	6.1	9	10	45	SHA04

Comet C/1996 B2 (Hyakutake) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 04 04.09		B	2.4	SC	1	E		1			3	43	HAL
1996 04 04.23		S	2.7	AA	5.0	B		7	15	6/	3.5	40	SPR
1996 04 04.46		B	2.7	AA	3.0	B		7	20	8	4		SAN03
1996 04 04.74		M	2.4	AA	3	R	4	7	15	5	3		MAI
1996 04 04.84		G	2.1	SP	0.7	E		1	20	7	5	45	MCK
1996 04 04.85		B	3.0	AA	5.0	B		10	12	5	1.7	50	TAY
1996 04 04.85		S	2.1	AA	4.0	B		8	18	5/	2.5	45	SCH04
1996 04 04.86		G	2.7	SC	0.7	E		1	20	5	4		GAI
1996 04 04.87		B	2.5	AA	5.0	B		10	30	3	6	50	ZAN01
1996 04 04.89		S	3.0	AA	7.0	B		16	16	5	1.2	50	TAY
1996 04 04.90		S	3.0	AA	4.8	R	3	8	10	8			FEI
1996 04 04.95		S	2.0	SC	25	T	10	96	7	6	3	35	CLE
1996 04 05.01		S	2.5	S	6.3	B		11	15	5			LAN03
1996 04 05.03			3.3	AA	5.0	B		7		5	2		SIM
1996 04 05.05		B	2.3	AA	5.0	B		7		4			SIM01
1996 04 05.11		S	1.8	AA	20.0	T	10	50	4.7	9		305	SHA04
1996 04 05.44		M	2.8	AA	3.5	B		7					TSU02
1996 04 05.73		M	2.4	AA	3	R	4	7	15	5	5		MAI
1996 04 05.76		B	2.2	SC	8.0	B		12	30	S5	30	39	BAR06
1996 04 05.76		I	2.3	SC	0.0	E		1	30	S5	30	41	BAR06
1996 04 05.77		I	2.5	SC	0.0	E		1	50	5	7	40	MOR04
1996 04 05.77		S	2.6	AA	5.0	B		7	18	s5	11	48	KOS
1996 04 05.77		S	3.0	AA	5.0	B		7	12	S6	5	47	VEL03
1996 04 05.78	!	M	3.0	HD	3.5	O	4	7	12	7	5.4		BRU
1996 04 05.79					8.0	B		11	40	5	8	45	STO
1996 04 05.79		S	2.3	AA	0.0	E		1					STO
1996 04 05.80			2.9	AA	3.5	R	10	1			&6		MIK
1996 04 05.81		G	2.1	AA	0.0	E		1	20	5	5	41	GOL
1996 04 05.81		O	2.4	Y	0.0	E		1	30				DEM
1996 04 05.82		G	2.4	SP	0.7	E		1					MCK
1996 04 05.82		S	3.2	AA	5.0	B		10	27	8			LOO01
1996 04 05.84		O	2.5	S	0.0	E		1	30	6	3		KON06
1996 04 05.86		S	2.8	AA	5.0	B		10	18	5	5.0	48	TAY
1996 04 05.87		S	2.7	SC	8.0	B		11		6	5	30	GAI
1996 04 05.90		S	1.9	AE	0.7	E		1			15		VET
1996 04 05.90		S	2.3	SC	25	T	10	96	7	6	3	50	CLE
1996 04 05.91		S	3.0:	AA	3.5	O		7	&20	8	5		KOL04
1996 04 05.94		S	3.4	AA	5.0	B		10	8	4	0.5		TAY
1996 04 05.95		S	1.9	AA	12.5	R	5	20	20	7	7	40	BEA
1996 04 06.05		B	2.9	AA	2.0	B		8	&12		5	150	SCH12
1996 04 06.07		M	3.0	AA	3.5	B		7	6	S7	9	50	MOR03
1996 04 06.75		I	2.2	SC	0.0	E		1	30	S5	12	39	BAR06
1996 04 06.75		M	3.2	SC	5.0	B		10	25	6	3		AND03
1996 04 06.76		M	2.5	AA	3	R	4	7	18	5	5		MAI
1996 04 06.76		S	2.5	AA	5.0	B		7	15	s5	20.5	45	KOS
1996 04 06.79		B	3.0:	AA	6.0	B		20	10	7	4.5	45	KOS04
1996 04 06.79		B	3.2:	AA	5.0	B		7			6		HOM
1996 04 06.79		I	2.4	SC	0.0	E		1	50	5	7	45	MOR04
1996 04 06.80		B	2.3	S	0.0	E		1	18	7	13	50	HOR02
1996 04 06.80		B	2.8:	SC	6.8	R	10	17	12	5			FIL05
1996 04 06.80		I	2.7:	SC	0.0	E		1			6		FIL05
1996 04 06.80		O	2.5	S	0.8	E		1		5	1		VET01
1996 04 06.81					5.0	B		10	11	8	11	44	HAV
1996 04 06.81		B	2.6	AA	0.6	E		1		8	>14		MEY
1996 04 06.81		B	2.8	AA	5.0	B		10	9.5	S8	4.5		MEY
1996 04 06.81		P	2.7	SC	2.5	A	4		8	5	14	312	FIL05
1996 04 06.81		S	2.3	SC	8.0	B		12	30	6	13	35	ISH03
1996 04 06.81		S	2.8	AA	0.0	E		1			7	45	VEL03
1996 04 06.81		S	3.1	AA	5.0	B		7	10	S6	7	45	VEL03
1996 04 06.81	!	S	2.0	AA	0.0	E		1	15	7	14	44	HAV
1996 04 06.82					11.0	L	7	32	9.6	S5	5.5	45	VEL03
1996 04 06.82		O	2.2	Y	0.0	E		1	25		8	45	DEM
1996 04 06.83		B	2.9	AA	5.0	B		10	15	4	2	40	ZAN01
1996 04 06.83		G	2.2	AA	0.0	E		1	18	5	4	42	GOL
1996 04 06.83		S	2.5	S	10	B	4	25	10	9	2	40	HAL04

Comet C/1996 B2 (Hyakutake) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 04 06.84			3.1	A	0.0	E		1					LAB
1996 04 06.84		G	2.7	AA	0.0	E		1	11	7	7		SER
1996 04 06.84		M	2.8	Y	5.0	B		7	90		6		POP
1996 04 06.84		S	2.5	AA	11.0	B		20	15	7	6.3	41	NEV
1996 04 06.84	!	B	2.8	HD	5	R	4	7	11	7	5.9		BRU
1996 04 06.84	!	V	2.8	YF	1.9	R	4						MIK
1996 04 06.85		O	2.5	S	0.0	E		1	20	6	2.5		KON06
1996 04 06.85		S	2.7	AA	5.0	B		10		7	2.5		L0001
1996 04 06.88		S	2.9	HD	0.0	E		1	10	8	4	40	SAN07
1996 04 06.92					8.0	B		11	20	7	2	48	TH003
1996 04 06.92		S	2.0	S	0.7	E		1					TH003
1996 04 06.96		G	2.5	SP	0.0	E		1	10	4	&2		BAL03
1996 04 07.04		S	3.0	S	6.3	B		11	13	5			LAN03
1996 04 07.11		B	2.4	SC	1	E		1			7.5	45	HAL
1996 04 07.13		B	2.7	AA	2.0	B		8	10		3	150	SCH12
1996 04 07.44		M	2.4	AA	3.5	B		7					TSU02
1996 04 07.75		B	3.5:	AA	6.0	B		20	10	7	4.0	40	KOS04
1996 04 07.78		S	2.5	AA	5.0	B		7	15	s5	22.5	45	KOS
1996 04 07.78	!	B	2.6	HD	5	R	4	7	16	7	7.4		BRU
1996 04 07.79		I	2.4	SC	0.0	E		1	20	S5	14	41	BAR06
1996 04 07.79		S	2.4	SC	11	B		20	25	S5	8	42	ISH03
1996 04 07.81		G	2.9	Y	0.0	E		1		7			MOS03
1996 04 07.82					5.0	B		7	8	S4	12	49	VEL03
1996 04 07.82		M	2.3	Y	2.4	B		6	15		13	50	DEM
1996 04 07.82		O	2.8	Y	0.0	E		1	20		5	45	DEM
1996 04 07.82		S	2.7	AA	0.0	E		1			10	50	VEL03
1996 04 07.83		B	2.3	S	0.0	E		1	15	8	11	47	HOR02
1996 04 07.83		G	2.3	AA	0.0	E		1	20	5	4	43	GOL
1996 04 07.83		G	2.6	AA	0.0	E		1	13	8	9	46	SER
1996 04 07.83		M	2.6	Y	8.0	B		10	90		3		POP
1996 04 07.84			3.1	A	0.0	E		1					LAB
1996 04 07.85		S	2.6	S	10	B	4	25	10	9	2.5	45	HAL04
1996 04 07.85		S	3.1	AA	5.0	B		7					VEL03
1996 04 07.86		S	2.5	HD	0.0	E		1	15	8	10	40	SAN07
1996 04 07.89		S	3.9	AA	7.0	B		16	11	3			TAY
1996 04 07.90		B	2.5	AA	3.5	O		7	&20	8	5		KOL04
1996 04 07.93		S	2.0	AA	12.5	R	5	20	15	6	3	35	BEA
1996 04 07.96		G	2.4	SP	0.0	E		1	10	5	&3		BAL03
1996 04 08.04		B	3.1	AA	2.0	B		8	10		3	130	SCH12
1996 04 08.08		S	3 :	YF	5.0	B		7		4	1.5	105	WAR
1996 04 08.18		S	2.7	AA	5.0	B		7	15	6/	7	40	SPR
1996 04 08.78		B	3.4	AA	6.0	B		20	10	7	2.5	40	KOS04
1996 04 08.79		G	2.0	AA	0.0	E		1	20	6	3	44	GOL
1996 04 08.79		S	2.3	AA	5.0	B		7	12	s5	35	47	KOS
1996 04 08.79	!	B	2.5	HD	5	R	4	7	11	6	7.1		BRU
1996 04 08.81					5.0	B		10	10	8	12	42	HAV
1996 04 08.81	!	S	1.9	AA	0.0	E		1	12	7	15	42	HAV
1996 04 08.82		B	2.4:	S	0.0	E		1	10	7	5	47	HOR02
1996 04 08.83		B	2.6	AA	3.0	O		8	12	7	10	45	SER
1996 04 08.83		S	2.4	S	10	B	4	25	20	9	1	45	HAL04
1996 04 08.83		S	2.8	AA	5.0	B		10	&20	5	>4		GRA06
1996 04 08.84		M	2.6	Y	5.0	B		7	90		5.3		POP
1996 04 08.84		S	2.6	AA	11.0	B		20	14	7	6.8	43	NEV
1996 04 08.85		S	1.8	AE	0.7	E		1					VET
1996 04 08.86		M	2.6	HD	5	R		20	10	8			SAN07
1996 04 08.88		G	2.6	SP	0.0	E		1	10	4	3		BAL03
1996 04 08.90		B	2.5	AA	3.5	O		7	&20	8	5		KOL04
1996 04 08.90	a	S	2.3	AA	4.0	B		8	10	7	&0.5	48	SCH04
1996 04 08.96		G	2.8	SP	0.0	E		1	8	3	&1.5		BAL03
1996 04 09.06	a	B	2.3	HP	0.0	E		1	18	6	3.7	49	BOR
1996 04 09.06	a	B	2.4	HP	5.0	B		10	9	7/	3.5	49	BOR
1996 04 09.06	a	B	2.5	HP	5.0	R		1					BOR
1996 04 09.06	a	I	2.4	HP	0.0	E		1					BOR
1996 04 09.07		S	3 :	YF	5.0	B		7		4	1.5	105	WAR
1996 04 09.12		B	2.4	SC	1	E		1			9	45	HAL

Comet C/1996 B2 (Hyakutake) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 04 09.80		G	2.3	AA	0.0	E		1	15	5	2.5	45	GOL
1996 04 09.81		M	3.2	S	5.0	B		7	10	8	7		DVO
1996 04 09.84		M	2.5:	Y	5.0	B		7	60		2		POP
1996 04 09.88		O	2.5	S	0.0	E		1	20	6			KON06
1996 04 09.88		S	1.8	AE	0.7	E		1					VET
1996 04 09.88		S	3.2	AA	5.0	B		10	5.5	6/	4	47	ABB
1996 04 09.89					8.0	B		11	15	6	2.5	48	TH003
1996 04 09.89		S	2.5	S	0.7	E		1					TH003
1996 04 09.93					5.0	B		10	30	5	7	15	KIE01
1996 04 10.05		B	3.2	AA	2.0	B		8					SCH12
1996 04 10.09		S	2.6	AA	20.0	T	10	50	6.3	9	&5	350	SHA04
1996 04 10.49		M	2.8	AA	3.0	B		7	5	8	10		SAN03
1996 04 10.78		S	2.9	AA	5.0	B		7	8	D6	15	46	VEL03
1996 04 10.79		O	2.8	S	0.0	E		1	20	5	2		KON06
1996 04 10.80		B	3.2:	AA	3.0	O		8	11	6	10	44	SER
1996 04 10.80		S	2.7	AA	0.0	E		1			23	47	VEL03
1996 04 10.83		M	2.5	Y	5.0	B		7	90		3		POP
1996 04 10.85		S	3.4	AA	7.0	B		16	8	6	0.8	51	TAY
1996 04 10.86		S	3.1	SC	8.0	B		11			>2		GAI
1996 04 10.89		G	2.4	SP	0.7	E		1	20	6	18	50	MCK
1996 04 10.89		S	2.0	AA	12.5	R	5	20	15	7	2	35	BEA
1996 04 10.90		S	2.6	AA	11.0	B		20	12	7	7	46	NEV
1996 04 10.96		S	2.6	S	0.7	E		1					TH003
1996 04 11.05		B	3.3	AA	2.0	B		8					SCH12
1996 04 11.06		S	3.3	AA	3.5	B		7	4	S8	10	45	MOR03
1996 04 11.08		S	2.7	AA	20.0	T	10	50	7.1	9	&5	45	SHA04
1996 04 11.15		B	2.6	SC	1	E		1			17	47	HAL
1996 04 11.45		M	2.5	AA	3.5	B		7					TSU02
1996 04 11.79		S	2.7	AA	5.0	B		7	12	s5	26.5	45	KOS
1996 04 11.83	a	B	3.0	AA	5.0	B		10	15	7	15	47	ZAN01
1996 04 11.85		S	2.3	S	5.7	R	4	10	15	5	10		BUS01
1996 04 11.86	a	M	2.2	AA	0.0	E		1	&20	6	&8	270	COM
1996 04 11.88		M	3.0	HD	5	R		20	10	8	2	40	SAN07
1996 04 11.89		S	2.2	Y	5.0	B		7		7/	16		SKI
1996 04 11.89		S	2.3	Y	0.7	E		1	10	7/	15	45	SKI
1996 04 12.07		S	2.9	AA	20.0	T	10	50	6.9	9	&5	30	SHA04
1996 04 12.81	!	S	1.9	AA	0.0	E		1	10	8	17	40	HAV
1996 04 12.85		S	2.3	AA	4.0	B		8	9	6/	4.8	41	SCH04
1996 04 12.85		S	2.6	S	5.7	R	4	10	&15	5/	>10		BUS01
1996 04 12.85		S	3.1	AA	4.0	B		12		8			FEI
1996 04 12.87	a	B	2.7	AA	5.0	B		10	11	7	10	39	ZAN01
1996 04 12.91		S	2.4	Y	0.7	E		1	<10	8	6.5		SKI
1996 04 12.91		S	2.4	Y	5.0	B		7		8	10	41	SKI
1996 04 13.04		B	3.4	AA	2.0	B		8					SCH12
1996 04 13.04		S	3.0:	AA	20.0	T	10	50	7.6	9	&8	45	SHA04
1996 04 13.13		B	2.5	SC	1	E		1			16	45	HAL
1996 04 13.20		M	2.0	AA	0.0	E		1	8	6/	10	40	SPR
1996 04 13.44		S	1.9	S	15.0	R	5	25	5	7	3		NAG02
1996 04 13.45		I	2.3	AA	0.0	E		1					TSU02
1996 04 13.77		S	2.8	AA	5.0	B		7	5.4	D8	4.2	42	VEL03
1996 04 13.79		O	2.5	S	0.0	E		1	30	6	3		KON06
1996 04 13.80		M	2.8	SC	5.0	B		10	10	4	1.5		AND03
1996 04 13.82		B	3.4	AA	3.0	R		6	12	S7	8	40	BAR06
1996 04 13.83		B	3.5	AA	11	L	7	32	10	D6	4	40	BAR06
1996 04 13.85		G	2.7	SP	0.7	E		1	20	6	>5	45	MCK
1996 04 13.85		S	2.7	AA	4.0	B		8	10	7	3.0	41	SCH04
1996 04 13.85		S	3.2	SC	8.0	B		11			3		GAI
1996 04 13.85	a	B	3.0	AA	5.0	B		10	9	7	2	38	ZAN01
1996 04 13.88		G	3.3	SP	0.0	E		1	10	2			BAL03
1996 04 13.88		M	2.5	HD	5	R		20	10	7/	5.5	40	SAN07
1996 04 13.89		S	2.4	Y	0.7	E		1	& 5	8	7.5	40	SKI
1996 04 13.89		S	2.4	Y	5.0	B		7		8	15	41	SKI
1996 04 13.90		S	3.7	AA	5.0	B		10					ABB
1996 04 13.90		S	3.7	AA	5.0	B		10	5.3	6	1.92	27	ABB
1996 04 13.93		S	1.1	SP	3.0	B		8	30	4	5	20	KIE01

Comet C/1996 B2 (Hyakutake) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 04 14.79		G	2.9	AA	0.0	E		1		7	2		RYZ
1996 04 14.79		S	3.1	AA	5.0	B		7	5.4	D8	7.5	44	VEL03
1996 04 14.80					11	L	7	32	6.5	s4	5	44	VEL03
1996 04 14.80		B	3.1	AA	3.0	R		6	10	S7	8		BAR06
1996 04 14.81					5.0	B		10	7	8/	15	38	HAV
1996 04 14.81	!	S	2.1	AA	0.0	E		1	10	8	19	38	HAV
1996 04 14.82		I	2.5	AA	0.0	E		1	25	4	7		BAR06
1996 04 14.82		S	2.6	AA	5.0	B		7	10	s5	14	32	KOS
1996 04 14.83		M	2.5:	Y	5.0	B		7	40		4		POP
1996 04 14.84		S	3.5	AA	5.0	B		10		8			LOO01
1996 04 14.85			3.1	AA	0.0	E		1					LOO01
1996 04 14.85		S	2.0	AA	0.0	E		1	10	6	10		MER
1996 04 14.85		S	2.7	AA	4.0	B		8	10	7	3.5	40	SCH04
1996 04 14.85	a	S	2.5:	AA	5.0	B		7	10	4	5	41	LAN01
1996 04 14.85	a	S	2.6	S	3.0	B		8	&10	6	&6		BUS01
1996 04 14.88	a	B	3.0	AA	5.0	B		10	11	7	5	40	ZAN01
1996 04 14.88	a	M	2.9	AA	5.0	B		10	&20	6	&8	140	COM
1996 04 14.90		B	2.1	AA	3.5	O		7	10	8	5		KOL04
1996 04 14.90		S	2.5	YG	5.0	B		7		8	10	42	SKI
1996 04 15.04		S	2.7	AA	20.0	T	10	50	6.8	9	&5	34	SHA04
1996 04 15.07	w	S	3.2	AA	3.5	B		7		S9	5	45	MOR03
1996 04 15.12		B	2.7	SC	1	E		1			13	45	HAL
1996 04 15.75		M	1.5	AA	3	R	4	7	4	8	4		MAI
1996 04 15.76		O	2.0	S	0.0	E		1	30	5	5		KON06
1996 04 15.78		G	1.2	AA	0.0	E		1	10	9	5	41	SER
1996 04 15.80		M	2.8	S	5.0	B		7		8	5		DVO
1996 04 15.81		O	2.6	S	0.0	E		1		9			KUB
1996 04 15.82		B	2.1	AA	0.6	E		1		S8	20		MEY
1996 04 15.83		B	2.4	AA	5.0	B		10	5	S8	8		MEY
1996 04 15.84		S	1.8	AA	0.0	E		1	9	7	20		MER
1996 04 15.85		S	1.9	AA	4.0	B		8	10	7	3.8	39	SCH04
1996 04 15.86		S	2.7	AA	5.0	B		10		9	5	26	LOO01
1996 04 15.87			2.2	AA	0.0	E		1		9			LOO01
1996 04 15.88		S	2.0	S	10	B	4	25	15	8	2.5	40	HAL04
1996 04 15.88		S	2.4	SP	0.7	E		1	15	7	15	45	MCK
1996 04 15.89	!	S	2.1	Y	0.7	E		1			5	40	HIL02
1996 04 15.89	a	B	2.8	AA	5.0	B		10	7	8	6.5	43	ZAN01
1996 04 15.90	a	S	2.3	AA	4.0	B		12	4	8			FEI
1996 04 16.79		G	0.7	AA	0.0	E		1	14	9	5	34	SER
1996 04 16.79		S	2.6:	AA	5.0	B		7	7	D8	5	39	VEL03
1996 04 16.79	!	G	1.1	HD	0.0	E		1	15	8	7.2		BRU
1996 04 16.82		S	1.9	S	10	B	4	25	20	8	3	40	HAL04
1996 04 16.83		S	1.7	AA	0.0	E		1	8	7			MER
1996 04 16.85		S	2.3	AA	4.0	B		12	3	8			FEI
1996 04 16.86	a	M	1.6:	AA	5.8	R		8	8	3	6	37	LAN01
1996 04 16.87	a	S	2.5:	AA	8.0	B		20	10	2/	&3	330	GIL01
1996 04 16.88		S	3.1	AA	5.0	B		10		9	5	26	LOO01
1996 04 16.89		S	3.2	AA	0.0	E		1					BRO04
1996 04 16.89	!	S	2.0	Y	0.7	E		1			4	43	HIL02
1996 04 17.04		B	2.8	AA	2.0	B		8					SCH12
1996 04 17.04		S	2.1	AA	20.0	T	10	50	12.4	9	15	42	SHA04
1996 04 17.12		B	2.4	SC	1	E		1			13	40	HAL
1996 04 17.75		B	2.3	AA	6.0	B		20	10	7	3	40	KOS04
1996 04 17.76		O	2.0	S	0.0	E		1	35		5		KON06
1996 04 17.78		B	2.6	AA	3.0	R		6	11	S8	10		BAR06
1996 04 17.80		G	0.5	AA	0.0	E		1	6	9	5	31	SER
1996 04 17.80		I	1.9	AA	0.0	E		1	30	4	10		BAR06
1996 04 17.83		M	2.1	Y	8.0	B		10	60		18		POP
1996 04 17.84		S	1.9	S	10	B	4	25	15	7	4	45	HAL04
1996 04 17.84	s	B	1.5	AA	0.6	E		1		7	20		MEY
1996 04 17.84	s	B	1.7	AA	5.0	B		10	4.5	S8	8		MEY
1996 04 17.86		S	2.5	SP	0.7	E		1	9	8	10	35	MCK
1996 04 17.88					5.0	B		10	4	8	8	39	GRA04
1996 04 17.88	w	S	2.0	YG	0.7	E		1					GRA04
1996 04 17.89		S	2.2	AA	5.0	B		10			7.3		ABB

Comet C/1996 B2 (Hyakutake) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 04 17.89		S	2.2	AA	5.0	B		10	4.4	8	7.3	42	ABB
1996 04 17.89	w	B	1.9	YG	5.0	B		7		7/	12	37	SKI
1996 04 17.89	w	S	1.8	YG	0.7	E		1	<10	8	10		SKI
1996 04 17.90	!	S	1.9	Y	0.7	E		1			2		HIL02
1996 04 17.94		S	1.6	SP	3.0	B		8	40	5	9	15	KIE01
1996 04 18.07	w	S	2.6	AA	0.7	E		1		S9	9	40	MOR03
1996 04 18.79		S	2.5	AA	5.5	R		20	8	S6	&7		BAR06
1996 04 18.80		S	2.5:	AA	5.0	B		7	4.3	D8	16	36	VEL03
1996 04 18.82	!	V	2.6	YF	1.2	A	3		& 8	8/	>15		MIK
1996 04 18.83		S	2.0	S	10	B	4	25	10	6	2.5	40	HAL04
1996 04 18.86		B	3.0	AA	7.0	B		16	4	4	2.4	40	TAY
1996 04 18.88	s	S	2.2	YG	0.7	E		1					HIL02
1996 04 19.04	a	B	2.8	HP	5.0	B		10	3.5	8	16.5	35	BOR
1996 04 19.04	a	I	2.5	HP	0.0	E		1					BOR
1996 04 19.04	a	S	2.6	HP	0.0	E		1	1.5	8	5.5	35	BOR
1996 04 19.12		B	2.3	SC	1	E		1			23	38	HAL
1996 04 19.79		S	2.6	AA	5.0	B		7	10	s4	44	37	KOS
1996 04 19.79	!	M	1.8	HD	3.5	O	4	7	8	6	4.3		BRU
1996 04 19.80					11	L	7	32	3.9	S8	4	36	VEL03
1996 04 19.80		S	2.9:	AA	5.0	B		7	4.3	D8	19	36	VEL03
1996 04 19.81		G	1.2:	AA	0.0	E		1	3	9	3.6	40	SER
1996 04 19.81	!	S	1.9	AA	0.0	E		1	<10	8/	17	33	HAV
1996 04 19.81	!	V	2.8	YF	1.2	A	3		& 8	8/	>15		MIK
1996 04 19.82		B	2.3	S	0.0	E		1	12	7/			HOR02
1996 04 19.82	!	S	1.9	AA	5.0	B		10	5	8/	13	33	HAV
1996 04 19.83		S	3.2	S	10	B	4	25	10	6	2	40	HAL04
1996 04 19.83	s	B	3.4:	AA	5.0	B		10		S8	1.5		MEY
1996 04 19.85		S	1.5	AA	0.0	E		1	6.5	7			MER
1996 04 19.87		S	1.8	AA	12.5	R	5	20	15	7	5	30	BEA
1996 04 19.89		S	2.0	AE	0.7	E		1					VET
1996 04 19.90					5.0	B		10	3	8	19	36	GRA04
1996 04 19.90	w	S	1.5	YG	0.7	E		1			29	38	HIL02
1996 04 19.90	w	S	1.5:	YG	0.7	E		1					GRA04
1996 04 19.95	w	S	2.1:	YG	0.7	E		1			35		HIL02
1996 04 20.00		S	2.3:	AA	20.0	T	10	50	5.6	9		45	SHA04
1996 04 20.07	w	S	2.6	AA	3.5	B		7		S9	3.5	40	MOR03
1996 04 20.79		S	2.9:	AA	5.0	B		7	4	D8	13	36	VEL03
1996 04 20.80		S	3.9	AA	5.0	B		7	30	8	3	35	COL03
1996 04 20.81		S	1.5	AA	8.0	B		20	5	7	3	30	BAR
1996 04 20.81		S	3.2	AA	5.0	B		7					KOS
1996 04 20.81	!	V	2.7	YF	1.2	A	3		& 8	8/	>15		MIK
1996 04 20.82		M	2.5	S	8.0	B		10	3	8/	7	35	HOR02
1996 04 20.82		S	3.2	S	10	B	4	25	8		1.7	40	HAL04
1996 04 20.83	s	M	3.0	AA	5.0	B		10		8	3.5		MEY
1996 04 20.84		S	3.0	AA	5.0	B		10		9	4		LOO01
1996 04 20.84	s	M	2.6	AA	0.6	E		1		7			MEY
1996 04 20.85	&	S	2.3	S	8.0	B	5	10			7		TIC
1996 04 20.85	a	S	2.0	AA	4.0	B		8	8	7/	3.3	33	SCH04
1996 04 20.93	w	S	2.2:	YG	0.7	E		1			29	37	HIL02
1996 04 21.19		M	1.8	AA	5.0	B		7	8	6/	10	35	SPR
1996 04 21.79		G	2.7	AA	0.0	E		1			2		RYZ
1996 04 21.80		B	2.9:	AA	3.0	R		6	8	S8	&6	35	BAR06
1996 04 21.80		O	2.9	SP	0.0	E		1	5	7	8	35	ZNO
1996 04 21.80		S	3.5	AA	5.0	B		7	8	s4	30	35	KOS
1996 04 21.81		M	2.8	S	8.0	B		10	2	9	6	32	HOR02
1996 04 21.81	!	V	2.7	YF	1.2	A	3		& 6	8/	>15		MIK
1996 04 21.82		B	3.1	S	8.0	B		10	5	8/	3	25	PLS
1996 04 21.83		S	4.0	S	10	B	4	25	7	5	1.3	45	HAL04
1996 04 21.84		S	1.5	AA	5.0	B		7	5	7			MER
1996 04 21.85		M	2.9	Y	5.0	B		7	30		12		POP
1996 04 21.85	a	S	2.6	AA	0.0	E		1	6	8	3	31	SCH04
1996 04 21.85	a	S	2.6	AA	5.0	B		10	6	7	5	31	ZAN01
1996 04 21.85	a	S	2.7	S	6.7	R	5	14	& 5	7	&5		BUS01
1996 04 21.86		M	2.7:	AA	6.3	B		9	4	8	5	33	LAN01
1996 04 21.89		S	3.1	AA	5.0	B		10		9	2		LOO01

Comet C/1996 B2 (Hyakutake) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 04 22.03	a	B	3.0	HP	5.0	B		10					BOR
1996 04 22.03	a	E	3.0	HP	5.0	B		10					BOR
1996 04 22.03	a	I	2.6	HP	0.0	E		1	1.5				BOR
1996 04 22.03	a	S	3.0	HP	5.0	B		10	3	9			BOR
1996 04 22.06		S	3 :	YF	5.0	B		7		6		95	WAR
1996 04 22.07	s	S	2.8	AA	0.7	E		1		S9	2	35	MOR03
1996 04 22.11		S	3.0:	SC	5.0	B		10			4	43	HAL
1996 04 22.79		B	2.5:	AA	3.0	R		6	7	S8	&8	31	BAR06
1996 04 22.80		S	3.8	AA	5.0	B		7	7	s4	32	33	KOS
1996 04 22.81		M	3.0	S	8.0	B		10	2	8/	5	25	HOR02
1996 04 22.81		M	3.0	S	8.0	B		10	4.5	8/	5	20	PLS
1996 04 22.83		M	3.0	Y	5.0	B		7	30		10		POP
1996 04 23.79		S	4.3	AA	5.0	B		7					KOS
1996 04 23.81		S	2.5	S	10	B	4	25	5	4	2.5	35	HAL04
1996 04 23.82		M	3.3:	S	5.0	B		10	2	8/	3	25	HOR02
1996 04 24.10		S	2.8:	SC	5.0	B		10					HAL
1996 04 24.85	a	S	3.0:	AA	8.0	B		20	& 7	6/	&3		LAN01
1996 04 24.85	a	S	3.2	S	6.7	R	5	14	& 3	7	>4		BUS01
1996 04 25.03					8.0	B		15	1	8/	2.5	20	BOR
1996 04 25.03	a	I	3.2	HP	5.0	B		10	1	9	1.5	20	BOR
1996 04 25.18		M	1.8	AA	8.0	B		11	6	6/	1.5	30	SPR
1996 04 25.84	a	S	2.9	S	6.7	R	5	14	& 2	7	1.5		BUS01
1996 04 26.83		B	3.2:	SC	25.6	L	5	42	1	8	0.6		BIV
1996 04 26.86	w	B	2.0:	YG	5.0	B		7	< 5	8	1.2	20	SKI
1996 04 26.87	w	S	2.5	YG	5.0	B		10	1	8	0.5	23	GRA04
1996 04 27.86	w	B	2.2	YG	5.0	B		7	< 5	8/	1	23	SKI
1996 04 28.02		I	2.8:	HP	8.0	B		15	0	9			BOR
1996 05 01.15		I	[-1 :		11	L	4	17					HAL
1996 05 01.76		I	[-1 :		41	L	4	72					HAL
1996 05 02.58			[-1 :		5.0	R	15	26					BOR
1996 05 12.77		S	4.2	SC	5	R		7	& 3.5		0.5		JON
1996 05 14.76		S	4.3	SC	5	R		7	3.5				JON
1996 05 14.81		S	3.8:	AA	10.0	B		25			>0.5	220	SEA
1996 05 15.76		S	4.0	SC	2.3	B		2			1	220	JON
1996 05 15.81		S	3.8	AA	0.0	E		1					SEA
1996 05 16.75		S	4.2	SC	2.3	B		2			1.5		JON
1996 05 16.82		S	3.5	SC	8.0	B		20	1	8	7	270	CAM03
1996 05 17.75		S	4.2	SC	2.3	B		2			1.5	220	JON
1996 05 17.81		S	3.7	SC	8.0	B		20	1	7	7	250	CAM03
1996 05 17.81		S	3.9	AA	0.0	E		1			>1	220	SEA
1996 05 19.16		S	4.0	S	5.0	B		10		8	1.2		C0002
1996 05 19.81		S	4.0	SC	8.0	B		20	1	6	7	260	CAM03
1996 05 20.78			4.6	AA	0.0	E		1	2.0	5	2.3	225	SEA01
1996 05 20.78		B	4.5	AA	5.0	B		10	1.0	9	2.3	225	SEA01
1996 05 21.79			4.8	AA	0.0	E		1	2.0	5	1.2		SEA01
1996 05 21.79		B	5.0	AA	5.0	B		10	1.0	9	2.3		SEA01
1996 05 21.79		B	5.2	AA	8.0	B		15	1.0	8	1.4		SEA01
1996 05 21.80		S	4.1	AA	0.0	E		1					SEA
1996 05 22.79		S	4.3	AA	0.0	E		1			2	225	SEA
1996 05 23.75		S	5.1	SC	2.3	B		2	4.5				JON
1996 05 23.77		B	5.2	AA	5.0	B		10	2.0	8	1.5		SEA01
1996 05 23.77		B	5.2	AA	8.0	B		15	2.0	8	1.8		SEA01
1996 05 23.78			4.9	AA	0.0	E		1			1.0		SEA01
1996 05 23.81		S	4.3	AA	0.0	E		1					SEA
1996 05 24.77		B	5.2	AA	5.0	B		10	2.0	8	1.5		SEA01
1996 05 24.78			5.0	AA	0.0	E		1					SEA01
1996 05 24.80					10.0	B		25	4.0	D8	2.5	120	SEA
1996 05 24.80		S	4.3	AA	0.0	E		1					SEA
1996 05 24.80		S	4.3	SC	8.0	B		20	2	6	3.5	250	CAM03
1996 05 24.81		S	4.2	AA	0.0	E		1					PEA
1996 05 24.81		S	4.2	AA	8.0	B		20	4	D8	2.8	217	PEA
1996 05 25.11		S	4.3	S	5.0	B		10		8			C0002
1996 05 25.34		B	4.6	AA	7.0	B		10	0.42	9	2.0	217	DEA
1996 05 25.81		S	4.4	AA	0.0	E		1					PEA
1996 05 25.81		S	4.4	AA	8.0	B		20	4	D8	2.4	226	PEA

Comet C/1996 B2 (Hyakutake) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 05 26.33			4.8	AA	0.0	E		1					DEA
1996 05 26.75		S	5.1	SC	2.3	B		2					JON
1996 05 26.79		S	4.4	AA	0.0	E		1			3.3	215	SEA
1996 05 27.33			4.6	AA	0.0	E		1					DEA
1996 05 27.75		S	5.4	SC	5.0	B		7	5		2.5	220	JON
1996 05 27.75		S	5.5	SC	2.3	B		2					JON
1996 05 28.34			4.8	AA	0.0	E		1					DEA
1996 05 28.77			4.8	AA	0.0	E		1			0.7		SEA01
1996 05 28.77		B	5.2	AA	5.0	B		10	2.0	8	1.5	240	SEA01
1996 05 28.79		S	4.5	AA	0.0	E		1					SEA
1996 05 29.79		I	4.6	AA	0.0	E		1					SEA
1996 05 30.16		S	4.5	S	5.0	B		10		7	2.2		C0002
1996 05 30.34			5.0	AA	0.0	E		1					DEA
1996 05 30.76		S	5.5	SC	5.0	B		7	4				JON
1996 05 30.79					10.0	B		25	5.0	8	2.3	213	SEA
1996 05 30.79		I	4.8	AA	0.0	E		1					SEA
1996 05 30.81		S	4.8	SC	8.0	B		20	2	6	3	250	CAM03
1996 05 31.75		S	5.0	SC	5.0	B		7	3			210	JON
1996 06 07.74		S	5.6	SC	5.0	B		7	4		1.2	215	JON
1996 06 09.79		I	5.3	AA	0.0	E		1					SEA
1996 06 10.75		S	6.0	SC	4.5	R	6	13	4		0.5	200	JON
1996 06 11.80		S	5.2	SC	8.0	B		20	4	5	3		CAM03
1996 06 13.80		S	5.3	SC	8.0	B		20	5	5	3		CAM03
1996 06 15.81		S	5.3	SC	8.0	B		20	5	4	3		CAM03
1996 06 18.77		S	6.4	AA	5.0	B		10	8	8	1.5	145	SEA01
1996 06 19.74		B	6.6	AA	8.0	B		15	7	7	1.7	150	SEA01
1996 06 19.78		B	6.5	AA	5.0	B		10	9	8	1.5	150	SEA01
1996 06 19.81		S	6.4	AA	8.0	B		20	5.5	6	0.8	203	PEA
1996 06 19.82		S	5.8	AA	0.0	E		1					SEA
1996 06 20.76		B	6.8	AA	5.0	B		10	8	7	1.4	150	SEA01
1996 06 20.78		B	6.6	AA	8.0	B		15	9	6	1.4	150	SEA01
1996 06 20.82		S	6.4	AA	8.0	B		20	5.5	6	0.9	201	PEA
1996 06 24.77		B	6.8	AA	5.0	B		10	8	8	1.0	150	SEA01
1996 06 24.77		B	7.0	AA	8.0	B		15	9	8	1.2	150	SEA01
1996 06 24.77		S	6.3	AA	10.0	B		25	6.0	6	1.0	210	SEA
1996 06 24.81		S	5.8	SC	8.0	B		20	10	4	1.5	230	CAM03
1996 06 26.72		B	7.3	AA	5.0	B		10	8	7	0.7	160	SEA01
1996 06 26.78		B	7.2	AA	8.0	B		15	8	7	1.3	160	SEA01
1996 06 26.82		S	6.0:	SC	8.0	B		20	10	4	1.5	230	CAM03
1996 06 27.73		B	7.3	AA	8.0	B		15	8	7	1.2	160	SEA01
1996 06 28.78		B	7.4	AA	5.0	B		10	9	7	0.6		SEA01
1996 06 29.79		B	7.3	AA	5.0	B		10	7	7	0.5	165	SEA01

Comet C/1996 E1 (NEAT)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 03 19.23		S	[14.0	AC	41	L	4	183	0.5				HAL
1996 03 22.52		C	15.9	GA	60.0	Y	6		0.6		1.0m	145	NAK01
1996 04 05.47		C	16.4	GA	60.0	Y	6		0.45		0.9m	135	NAK01
1996 04 07.50		C	16.6	GA	60.0	Y	6		0.35		1.3m	133	NAK01
1996 04 15.21		I	[13.5:		41	L	4	183					HAL
1996 04 22.48		C	17.0	GA	60.0	Y	6		0.3		1.3m	134	NAK01
1996 05 15.48		C	16.2	GA	60.0	Y	6		0.6		1.3m	122	NAK01
1996 05 18.88		S	13.7	HS	44.5	L	5	146	0.8	3			SAR02
1996 05 18.88		S	13.9	HS	44.5	L	5	146	0.3	2/			SZE02
1996 05 22.15		I	[13.5:		41	L	4	183					HAL
1996 07 21.97		S	11.5	AC	25.4	J	6	88	1.8	1/			BOU

Comet C/1996 J1 (Evans-Drinkwater)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 05 13.55	a	C	13.8	GA	60.0	Y	6		1.4				NAK01
1996 05 15.20		S	13.6	AC	41	L	4	183					HAL
1996 05 15.53	a	C	14.1	GA	60.0	Y	6		0.95				NAK01
1996 05 16.18		S	13.5	AC	41	L	4	183	1	3/			HAL

Comet C/1996 J1 (Evans-Drinkwater) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 05 18.87		S	14.9	HS	44.5	L	5	146	0.1	D7			SZE02
1996 05 18.87		S	14.9	HS	44.5	L	5	146	0.2	D6			SAR02
1996 05 21.22	!	S	13.6	AC	41	L	4	183					HAL
1996 05 22.48	a	C	14.0	GA	60.0	Y	6		1.3				NAK01
1996 06 06.48	a	C	13.7	GA	60.0	Y	6		1.1				NAK01
1996 06 16.16	!	S	13.3:	AC	41	L	4	183					HAL
1996 06 19.17	!	S	13.3	AC	41	L	4	183					HAL

Comet C/1996 N1 (Brewington)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 07 06.19		S	9.7	NP	20	L	6	49	6	1/			HAL
1996 07 06.36		S	9.4	AA	10.0	B		25	5	4			SEA
1996 07 06.48		S	9.0	S	15.0	R	5	25	6	4			NAG02
1996 07 06.91		M	8.9	NP	44.5	L	5	100	4	5			MAR02
1996 07 06.92		S	9.1	NP	44.5	L	5	100	6	4			SAN04
1996 07 08.18	!	M	9.6	AC	41	L	4	72	3.5	5			HAL
1996 07 10.48		C	10.2:	GA	8.0	R	6		7.0				NAK01
1996 07 10.50		M	8.7	S	12.5	L	6	23	5	3			TSU02
1996 07 11.09		S	9.2	AC	40.6	L	5	70	2.5	3			BOR
1996 07 11.51		S	10.2	HS	31.7	L	6	152	2	2			MIY01
1996 07 12.09	a	S	9.4	AC	40.6	L	5	70	2.5	2			BOR
1996 07 12.85		S	8.8	S	11.0	B		20	8	2/			BAR06
1996 07 12.86		B	8.6:	S	11.0	B		20	7	2			ISH03
1996 07 13.49		S	8.9	AC	41.0	L	6	80	4	4			KOB01
1996 07 16.90		S	8.5	S	20.3	T	10	50	2.5	4			KAM01
1996 07 17.87		S	9.2	AA	6.0	B		20	& 4	3			MIK
1996 07 18.87		S	9.1	AA	6.0	B		20	& 4	3			MIK
1996 07 19.86		S	8.9	HD	6.0	B		20	6	4			SAR02
1996 07 20.94		S	8.6	NP	7.0	B		10	5	3			MAR02
1996 07 20.95		S	8.6	NP	44.5	L	5	100	5	5			SAN04
1996 07 21.94		S	9.3	AA	25.4	J	6	58	5	2			BOU
1996 07 25.86	!	V	9.7	YF	20.0	T	2		& 5	7			MIK

Comet 2P/Encke

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1994 01 04.39		S	8.5	S	25	L	4	45	6	3			KAK01
1994 01 04.40		M	9.3	AA	12.0	B		20	4	4			MIT
1994 01 09.40		M	9.1	AA	12.0	B		20	4	4			MIT
1994 01 09.41		B	9.2	S	20.3	T	10	48	3	4	3 m	260	NAG04
1994 01 15.38		S	7.6	S	25.4	T	6	62	4	4			ONO
1994 01 15.40		M	8.7	AA	12.0	B		20	3.5	5			MIT
1994 01 22.39		S	7.8	S	25.4	T	6	62	3	4			ONO
1994 01 23.39		S	7.4	S	15	L	5	38	4	4			ONO

Comet 6P/d'Arrest

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 06 27.04		B	[13.7	SD	40	L	4	180					REN
1995 06 27.73		S	9.8	AA	31.0	L	6	126	3	6			CLA
1995 06 28.76		S	9.8	AA	31.0	L	6	126	3	6			CLA
1995 06 30.03		B	13.7	SD	40	L	4	96	0.75	3			REN
1995 07 04.66		S	9.5	AA	20.0	L	4	75	4	5			CLA
1995 07 21.00		B	12.3	VF	40	L	4	96	> 2	4			REN
1995 07 23.02		B	12.1	VF	40	L	4	90	3	4/			REN
1995 07 24.57		S	9.0	AA	8.0	B		15	4	2			SEA01
1995 07 25.56		S	8.9	AA	8.0	B		15	3	4			SEA01
1995 07 26.73		S	11.7	L	31.7	L	5	64	0.5	1			JON
1995 07 27.57		S	9.0	AA	8.0	B		15	4	4			SEA01
1995 07 27.73		S	11.3	L	31.7	L	5	64	0.8	1			JON
1995 07 28.32		S	10.4	AC	15	R	5	42	3				MOR03
1995 07 28.75		S	11.2	L	31.7	L	5	64	1	2			JON
1995 07 29.74		S	11.3	L	31.7	L	5	64	1	2			JON
1995 07 30.00		S	7.8	AA	11	L	7	32	15	3			VEL03

Comet 6P/d'Arrest [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 07 30.33		S	10.0	AC	15	R	5	42	6	1			MOR03
1995 07 30.74		S	11.3	L	31.7	L	5	64	0.8	2			JON
1995 07 31.58		S	8.9	AA	20.3	L	7	56	4	0			CAM03
1995 08 01.00		S	8.0:	AA	11	L	7	32	15	2			VEL03
1995 08 01.33		S	10.1	AC	15	R	5	42	5.5	1			MOR03
1995 08 02.57		S	8.7	AA	8.0	B		15	10	2			SEA01
1995 08 02.74		S	7.3	AA	31.0	L	6	72	6	3			CLA
1995 08 03.54		S	8.9	AA	8.0	B		15	8	2			SEA01
1995 08 03.75		S	7.3	AA	31.0	L	6	72	6	3			CLA
1995 08 04.63		S	8.5	AA	8.0	B		20	3	0			CAM03
1995 08 04.63		S	8.5	AA	20.3	L	7	56	3	1			CAM03
1995 08 19.31		S	8.9	AC	15	R	5	42	7.5	1			MOR03
1995 08 19.65		S	7.3	AA	43.0	L	4	65	12	2			CLA
1995 08 20.47		S	10.2	VN	31.7	L	5	64	2	1			JON
1995 08 21.27		S	9.1	AC	15	R	5	42	7	1			MOR03
1995 08 22.66		S	7.3	AA	43.0	L	4	65	12	2			CLA
1995 08 23.65		S	7.4	AA	43.0	L	4	65	12	2			CLA
1995 08 24.37	s	S	9.1	AC	15	R	5	42	6	1			MOR03
1995 08 24.45		S	10.4	GA	31.7	L	5	64	2	1			JON
1995 08 25.48		S	10.4	GA	31.7	L	5	64	2	2			JON
1995 08 26.64		S	7.4	AA	43.0	L	4	65	12	2			CLA
1995 08 28.22	s	S	9.2	AC	15	R	5	42	5.5	2			MOR03
1995 08 29.70		S	10.4	GA	31.7	L	5	64	1	5			JON
1995 08 29.71		S	9.2	S	7.8	R	7	30					JON
1995 08 30.36	s	S	8.9	AC	15	R	5	42	6	2			MOR03
1995 08 30.64		S	7.5	AA	43.0	L	4	65	12	2			CLA
1995 09 03.04		B	8.5	A	8.0	B		12	10	2			REN
1995 09 18.23		S	9.3	AC	15	R	5	42	5	1			MOR03
1995 09 21.67		S	8.5	AA	20.0	L	4	28	13	3			CLA
1995 09 22.47		S	9.3	GA	7.8	R	7	30	2.5	3			JON
1995 09 22.48		S	10.3	GA	31.7	L	5	64	2	3			JON
1995 09 24.20	s	S	9.2	AC	15	R	5	42	4.5	0			MOR03
1995 09 29.20	s	S	9.2	AC	15	R	5	42	6	1			MOR03
1995 09 30.64		S	8.8	AA	20.0	L	4	28	12	2			CLA
1995 10 14.56		S	9.2	AA	20.0	L	4	28	11	1			CLA
1995 10 15.23	!	S	9.7	AC	41	L	4	72					HAL
1995 10 19.27		S	9.6	AC	41	L	4	72	6				HAL
1995 10 19.68		S	9.3	AA	43.0	L	4	95	14	2			CLA
1995 10 21.59		S	9.5	AA	15.0	L	6	75	10	2			CLA
1995 10 23.18		S[	11.0	GA	20.0	L	5	68	! 2.0				MOD
1995 10 24.57		S	9.7	AA	20.0	L	4	75	10	3			CLA
1995 10 27.20		S	10.2	AC	41	L	4	72	6	1/			HAL
1995 11 14.18		S	11.0	AC	41	L	4	72	9				HAL
1995 11 20.26		S	11.3	AC	41	L	4	72		0/			HAL
1995 11 22.44		S	11.0	GA	20.3	L	7	56	3	0			CAM03
1995 11 25.24		S	11.4	AC	41	L	4	72	4	0			HAL

Comet 9P/Tempel 1

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1994 05 06.51		S	10.3	AC	20	L	6	67	1.5	6			YAS
1994 05 06.54		M	9.8	AA	12.0	B		20	5	4			MIT
1994 05 09.54		M	10.1	AA	12.0	B		20	6	3			MIT
1994 05 12.59		B	9.8	AA	31	L	6	56	5	5			KAN03
1994 05 12.64		B	8.9	S	20.3	T	10	48	2	6			NAG04
1994 05 18.66		B	8.7	S	20.3	T	10	48	2.7	3/			NAG04
1994 05 28.52		B	9.4	S	20.3	T	10	48	1.7	3			NAG04
1994 07 04.54		M	9.3	S	16.0	W	4	49					TSU02

Comet 10P/Tempel 2

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1988 08 04.88		S	9.4	A	11.0	L	6		5	1/			FEI

Comet 15P/Finlay

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 12 22.48		k	20.2	EB	154.9	L	3		0.17	4	0.4m	300	HER02
1995 12 22.49		k	20.1	EB	154.9	L	3						HER02
1995 12 22.50		k	20.4	EB	154.9	L	3						HER02

Comet 18P/Perrine-Mrkos

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 10 25.22		I[	13.5:		41	L	4	183					HAL
1995 11 20.23		I[	13.5:		41	L	4	183					HAL
1996 01 10.08		I[	13.5:		41	L	4	183					HAL

Comet 19P/Borrelly

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1994 09 04.16		B	11.1	VF	12	L	6	40	2.5	4			REN
1994 10 06.12		B	10.3	VF	40	L	4	51	2	6	0.05	90	REN
1994 10 08.15		B	10.1	VF	12	L	6	40	4.5	5			REN
1994 10 13.13		B	9.8	VF	12	L	6	40	3.5	5			REN
1994 10 14.81		B	8.6	S	20.3	T	10	48	1.3	3			NAG04
1994 10 31.63		S	8.4	AA	15	L	5	38	3	4			ONO
1994 11 01.63		S	8.6	AA	15	L	5	38	3	4			ONO
1994 11 01.72		S	8.8	S	15	L	6	36	5	5			YOS02
1994 11 02.66		S	8.9	AA	15	L	5	38	3	4			ONO
1994 11 03.64		S	8.9	AA	15	L	5	38	3	4			ONO
1994 11 03.75		S	8.7	AA	15	L	6	28	3	3			YOS03
1994 11 03.77		M	8.9	AA	12.0	B		20	3.5	5			MIT
1994 11 07.76		S	8.8	S	15	L	6	36	5	6	3 m	280	YOS02
1994 11 09.59		M	8.9	AA	12.0	B		20	6	4			MIT
1994 11 16.44		S	8.7	AC	6	R	15	50	4	3			MOR03
1994 11 26.46		S	9.0	AC	15	R	5	42	4	3			MOR03
1994 11 27.63		S	8.5	S	10.0	B		14	10	3			IWA01
1994 12 02.01		B	7.7	A	8.0	B		12	6	5			REN
1994 12 03.19		S	8.8	AC	15	R	5	42	5	4			MOR03
1994 12 03.61		M	9.5	NP	12.0	B		20	3	4			MIT
1994 12 04.58		M	9.5	NP	12.0	B		20	4	4			MIT
1994 12 06.59		S	8.6	AA	15	L	5	38	4	3/			ONO
1994 12 07.56		M	9.7	NP	12.0	B		20	3	4	4 m		MIT
1994 12 07.97		B	8.1	A	8.0	B		12	5	4			REN
1994 12 08.14		S	9.5	AC	15	R	5	42	3.5	4			MOR03
1994 12 10.46		S	8.9	AC	15	R	5	42	4.5	4			MOR03
1994 12 25.15		S	10.0	AC	15	R	5	42	3	5			MOR03
1994 12 26.17		S	10.0	AC	15	R	5	42	4	4			MOR03
1994 12 29.47		M	8.8	S	16.0	W	4	49					TSU02
1995 01 04.43		S	10.3	AC	15	R	5	42	3	4			MOR03
1995 01 12.20		B	10.3	VF	12	L	6	40	3.5	4/			REN
1995 01 23.76		B	11.3	VF	40	L	4	73	2.33	5/	0.07	240	REN
1995 01 23.89		B	11.2	VF	12	L	6	40	2.5	4			REN
1995 01 28.47		S	11.1	AC	44.5	L	4	80	2.4	4			MOR03
1995 02 03.03		S	11.5	AC	44.5	L	4	80	1.8	4			MOR03
1995 02 08.41		S	11.6	AC	44.5	L	4	80	1.7	4			MOR03
1995 02 22.00		B	12.3	VF	40	L	4	73	2.25	5			REN
1995 02 25.09		S	12.0	AC	44.5	L	4	80	1.5	2			MOR03
1995 02 26.41		S	12.8	AC	44.5	L	4	167	1.0	3			MOR03
1995 03 03.05		S	12.5	AC	44.5	L	4	167	1.2	3			MOR03
1995 03 07.08		B	12.6	VF	40	L	4	73	3	4			REN
1995 04 30.06		[	13.5:		40	L	4	90					REN

Comet 22P/Kopff

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 01 21.50		S[	13.1	AC	41	L	4	183	3				HAL
1996 01 21.50		S[	13.5	AC	41	L	4	183	1				HAL
1996 01 27.50		I[	13.5:		41	L	4	183					HAL
1996 02 19.51		S	12.4	AC	41	L	4	72	2.5	2/			HAL
1996 02 23.46		S	12.2	AC	41	L	4	72	4	1/			HAL

Comet 22P/Kopff [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 02 24.78		S	12.9	VN	43	L	4	160	2	2			CLA
1996 02 26.40		S	[12.0	AC	40.6	L	5	90					BOR
1996 03 17.45		M	11.3	AC	41	L	4	72	3	3/			HAL
1996 03 26.48		S	12.3:	AC	41	L	4	183					HAL
1996 03 28.12		S	11.5:	AC	13.0	L	6	36	& 3.5	1			MEY
1996 03 30.45		S	10.3	AC	41	L	4	72	4	2/			HAL
1996 04 14.59		S	9.7	AA	10.0	B		25	6.0	1			SEA
1996 04 15.46		M	10.2	AC	41	L	4	72	5				HAL
1996 04 16.04		S	10.7:	AA	11	L	7	56	2	2			BAR06
1996 04 16.10		O	10.9	TI	11	L	7	54	1.2	3			KYS
1996 04 17.05		S	10.6:	AA	11	L	7	56	2	3			BAR06
1996 04 18.04		S	10.8:	AA	11	L	7	56	2.5	3			BAR06
1996 04 18.06		M	9.6	TI	25	L	6	75	5.0	1			KUB
1996 04 18.08		S	9.8	AC	13.0	L	6	36	4	2			MEY
1996 04 19.03		S	10.9:	AA	11	L	7	56	2.2	3			BAR06
1996 04 19.56		S	9.9	AA	10.0	B		25					SEA
1996 04 20.07		S	10.2	TI	35	L	5	104	1.6	2			HOR02
1996 04 21.06		S	9.9	TI	35	L	5	92	2	2			HOR02
1996 04 21.08		S	9.2	AA	25.2	L	4	53	2.5	2			LOO01
1996 04 21.08		S	9.9	AC	13.0	L	6	36	3.5	2			MEY
1996 04 22.06		M	9.4	TI	35	L	5	92	3.5	1/			HOR02
1996 04 24.71		M	10.1	HS	12.5	L	6	60	2.5	3			TSU02
1996 04 25.10		M	8.5	SC	5.0	B		10		3			AND03
1996 04 26.08		B	10.9	HS	25.6	L	5	84	1.5	4			BIV
1996 04 27.46		S	10.2	AC	41	L	4	72	3.5				HAL
1996 05 09.54		S	9.5	AA	10.0	B		25					SEA
1996 05 10.06		S	8.9	AA	10	B		14	4.1	3			SHA02
1996 05 10.99		S	9.7:	AA	11	L	7	56	3	3			BAR06
1996 05 11.00		S	8.8:	VB	8.0	B		20	2	1			OKS
1996 05 12.12		B	8.7	S	17.8	L	6	42	4	4			TRI
1996 05 12.71		S	9.3	S	15.0	L	6	36	6				YOS02
1996 05 12.77		S	9.1	S	15.0	R	5	25	7	3			NAG02
1996 05 13.18		B	8.9	S	17.8	L	6	42	4	4			TRI
1996 05 13.99		S	9.9:	AA	11	L	7	56	3	2			BAR06
1996 05 14.12		B	8.6	S	17.8	L	6	42	3	3			TRI
1996 05 14.76		S	9.1	S	15.0	R	5	25	6	3			NAG02
1996 05 15.06		S	9.2	AA	10	B		14	5	s2			SHA02
1996 05 15.10		B	9.0	AA	15.0	L	4		3	3			ROD01
1996 05 15.68		S	9.6:	AA	10.5	R	7	23	3	2			HAS08
1996 05 16.00		S	8.9	AA	11	L	7	32	7	2			BAR06
1996 05 16.07		S	8.9	AA	10	B		14	6	s2			SHA02
1996 05 16.41		S	8.8	NP	5.0	B		10					HAL
1996 05 16.80		S	10.0	GA	8.0	B		20	3	1			CAM03
1996 05 16.99		S	8.9	AA	11	L	7	32	6	1/			BAR06
1996 05 17.02		S	9.0:	VB	8.0	B		20					OKS
1996 05 17.05		S	8.6	TI	8.0	B		10	7	2			HOR02
1996 05 17.72		S	10.2	MS	31.7	L	5	64	1	3			JON
1996 05 17.93	!	E	11.3	CD	30	L	5	100	2	1			NEV
1996 05 18.55		M	8.8	AC	3.5	B		10	& 9				OME
1996 05 19.02		S	8.5	HD	6.0	B		20	8	2			SAR02
1996 05 19.57		S	9.8	GA	20.3	L	7	56	3	2			CAM03
1996 05 19.80		S	9.5	GA	8.0	B		20	3	1			CAM03
1996 05 19.97		S	9.5:	AA	11	L	7	32	& 5	0			BAR06
1996 05 20.01		B	9.5	S	25.6	L	5	42	4	3			BIV
1996 05 20.05		S	8.7	AA	15.0	R		30	4	1			DIE02
1996 05 20.41		J	6.8	SC	25.4	T	4		2.16	S7	?		ROQ
1996 05 20.79		S	9.5	GA	8.0	B		20	4	1			CAM03
1996 05 21.05		S	8.0	TI	8.0	B		10	8	2			HOR02
1996 05 21.06		S	8.5	AA	8.0	B		20	6	2			SHA02
1996 05 21.06		S	8.5	AA	10	B		14	7	2			SHA02
1996 05 21.78		S	8.3	AA	5.0	B		10	2.5	2			SEA01
1996 05 21.78		S	8.4	AA	8.0	B		15	2.5	2			SEA01
1996 05 21.97		S	9.1	AA	11	L	7	54	4.5	3			BAR06
1996 05 21.99		S	9.2	AA	11	L	7	32	2.7	d2			VEL03
1996 05 22.01		B	9.6	S	25.6	L	5	42	5	4			BIV

Comet 22P/Kopff [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 05 22.01		S	8.9	AA	11	L	7	32	8	2			BAR06
1996 05 22.75		M	8.6	S	12.5	L	6	23					TSU02
1996 05 23.31		S	8.6	AA	8.0	B		20	4.7	3			BOR
1996 05 23.40		S	8.7	NP	5.0	B		10					HAL
1996 05 23.74		S	9.5:	HS	25.4	T	6	60	3	3/			YOS04
1996 05 23.74		S	10.1	MS	31.7	L	5	64	1	3			JON
1996 05 23.78		S	8.6	AA	8.0	B		15	3	5			SEA01
1996 05 24.07	!	V	10.3	YF	20.0	T	2		3.5	5			MIK
1996 05 24.67		S	9.0	GA	20.3	L	7	56	6	3			CAM03
1996 05 24.67		S	9.4	AA	10.5	R	7	23	4	2			HAS08
1996 05 24.74		S	8.9	S	15.0	R	5	25	6	3/			NAG02
1996 05 24.78		S	8.3	AA	8.0	B		15	3	4			SEA01
1996 05 24.78		S	8.8	AA	8.0	B		20	5	3			PEA
1996 05 24.99		S	8.8	AA	11	L	7	56	5.5	2			BAR06
1996 05 25.00		S	8.7	AA	11	L	7	32	6	2			BAR06
1996 05 25.06		S	8.7	S	7.0	B		10	6	2			MAR02
1996 05 25.07		S	8.4	S	44.5	L	5	100	6	4			SAN04
1996 05 25.18		S	8.9	S	15.0	L	4	50	5	3			ROD01
1996 05 25.31	a	S	8.3	AA	8.0	B		20	6.4	4			BOR
1996 05 25.79		S	8.6	AA	8.0	B		20	6.5	4			PEA
1996 05 26.06		S	8.5	VB	10	B		14	6	1			SHA02
1996 05 26.71		S	10.1	MS	31.7	L	5	64	2	2			JON
1996 05 27.33		J	9.1	SC	25.4	T	4		4.05	s3			ROQ
1996 05 28.05		S	8.6	VB	10	B		14	6	s2			SHA02
1996 05 28.16		B	7.7	S	5.0	B		7	5	3			TRI
1996 05 28.43		S	8.8:	NP	5.0	B		10					HAL
1996 05 28.78		S	8.4	AA	8.0	B		15	3	2			SEA01
1996 05 28.79		S	8.4	AA	5.0	B		10	3	2			SEA01
1996 05 29.05		S	9.0	S	20.3	T	10	50	2.5	2			KAM01
1996 05 29.14		B	7.9	S	5.0	B		7	5	3			TRI
1996 05 30.12		S	9.2	S	20	L	8	83		1			COO02
1996 06 01.29	!	J	9.5	SC	25.4	T	4		2.21	4			ROQ
1996 06 06.95		M	8.0	TI	8.0	B		10	6	2			HOR02
1996 06 06.96		B	8.3	VF	11.0	B		20	11	2			ISH03
1996 06 06.96		S	8.0	AA	11	L	7	56	14	1			BAR06
1996 06 07.29	!	J	9.6	SC	25.4	T	4		3.74	s3/			ROQ
1996 06 07.44		S	8.1	AA	5.0	B		10					SEA
1996 06 07.48		S	8.0	AA	5.0	B		10	6	2			SEA01
1996 06 07.87		S	8.2	S	20	L	8	83		2			COO02
1996 06 07.95		B	8.1	VF	11	B		20	12	2			ISH03
1996 06 07.95		S	7.9	AA	11	L	7	56	12	1/			BAR06
1996 06 07.96		S	8.2	AC	13.0	L	6	36	& 4.5	0			MEY
1996 06 07.98		S	8.0:	TI	8.0	B		10	6	2			HOR02
1996 06 08.14		S	8.5	AA	8.0	B		11	7	4			DES01
1996 06 08.37		S	8.4	AA	10.0	R	5	27	5.5	3/			SPR
1996 06 08.45		S	8.0	AA	8.0	B		15	7	2			SEA01
1996 06 08.46		S	9.8	NP	90.0	R	20	450					GAL
1996 06 08.95		B	8.1	VF	11	B		20	13	2			ISH03
1996 06 08.95		S	8.0	AA	11	L	7	56	9	1/			BAR06
1996 06 08.97		S	7.8	TI	8.0	B		10	7	2			HOR02
1996 06 09.01		K	7.2	S	7.0	B		10	7	1			MAR02
1996 06 09.02		K	7.2	S	7.0	B		10	6	3			SAN04
1996 06 09.15		S	8.6	AA	8.0	B		11	7	4/			DES01
1996 06 09.57		S	8.4	AA	8.0	B		20	5	3			CAM03
1996 06 09.96		S	8.4	AC	13.0	L	6	36	4.5	2			MEY
1996 06 10.00		S	8.4	AA	10	B		14	10	2			SHA02
1996 06 10.14		S	8.9	AA	8.0	B		11	8	4/			DES01
1996 06 10.55		S	8.4	AA	20.3	L	7	56	5	4			CAM03
1996 06 11.10		S	9.4	AA	8.0	B		20	9.4	3			LOU
1996 06 11.14		S	8.9	AA	8.0	B		11	7	3			DES01
1996 06 11.72		S	10.0	MS	31.7	L	5	64	1.5	2			JON
1996 06 11.81		S	8.0	AA	8.0	B		20	6	4			CAM03
1996 06 11.95		S	8.2	AA	11	L	7	32	10	1/			BAR06
1996 06 12.12		S	9.2	AA	8.0	B		20	5	2/			LOU
1996 06 12.14		S	9.0	AA	8.0	B		11	6	3			DES01

Comet 22P/Kopff [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 06 12.26	!	J	9.2	SC	25.4	T	4		2.07	s3			ROQ
1996 06 12.50		S	8.2	AA	20.3	L	7	56	5	3			CAM03
1996 06 12.96		S	8.3	AA	11	L	7	56	8	2	0.2	275	BAR06
1996 06 12.96		S	8.4	AA	11	L	7	32	7	1			BAR06
1996 06 12.99		S	9.0	AC	20.0	L	4	80	3.6	0/			SCH04
1996 06 13.00		S	8.3	AA	15.0	R		30	4	1			DIE02
1996 06 13.00		S	8.5	AC	25.4	J	6	47	5	1/			BOU
1996 06 13.01		S	8.5	AA	10	B		14	9	1			SHA02
1996 06 13.10		S	9.4	AA	8.0	B		20	5	2/			LOU
1996 06 13.15		S	8.8	AA	8.0	B		11	6	3/			DES01
1996 06 13.81		S	8.1	AA	8.0	B		20	5	3			CAM03
1996 06 13.86		S	8.5	S	20	L	8	83	2.2	2			COO02
1996 06 13.95		S	8.6	AA	11	L	7	56	8	2	0.2	280	BAR06
1996 06 13.99		S	9.1	AC	20.0	L	4	80	3.5	0			SCH04
1996 06 14.00		S	8.3	AA	15.0	R		30	4	1			DIE02
1996 06 14.01		S	8.4	AA	10	B		14	8	1			SHA02
1996 06 14.04		S	8.4	AA	20.3	T	10	50	2.7	3			KAM01
1996 06 14.10		S	9.4	AA	8.0	B		20	< 5	2/			LOU
1996 06 14.15		S	8.7	AA	8.0	B		11	6	3/			DES01
1996 06 14.53		S	8.0	AA	8.0	B		20	5	3			CAM03
1996 06 14.98	!	V	9.0	YF	20.0	T	2		& 5	5			MIK
1996 06 14.99		S	8.4	AC	25.4	J	6	47	5	1/			BOU
1996 06 15.00		S	9.0	AC	20.0	L	4	80	3.5	0			SCH04
1996 06 15.02		S	8.2	AA	15.0	R		30	4	1			DIE02
1996 06 15.04		S	8.3	AA	20.3	T	10	50	2.5	3			KAM01
1996 06 15.04		S	8.7	AA	8.0	B		11	5	3			DES01
1996 06 15.11		S	9.2	AA	8.0	B		20	6	2/			LOU
1996 06 15.34		S	8.2	AA	10.0	R	5	49	4	3/			SPR
1996 06 15.56		S	8.1	AA	20.3	L	7	56	5	3			CAM03
1996 06 15.58		S	8.2	AA	8.0	B		20	4	4			PEA
1996 06 15.60		M	8.6	S	12.5	L	6	60					TSU02
1996 06 15.82		S	8.1	AA	8.0	B		20	6	3			CAM03
1996 06 15.96		S	8.2	AC	13.0	L	6	36	4.5	2			MEY
1996 06 15.97		S	10.5:	AC	40.0	L	5	51	2	3			MER
1996 06 16.00		S	8.7	HD	6.0	B		20	7	2			SAR02
1996 06 16.01		S	9.5	HD	44.5	L	5	72	4	3			SAR02
1996 06 16.03		S	8.5	AA	15.0	R		30	5	1			DIE02
1996 06 16.05		S	8.8	AA	8.0	B		11	5	3			DES01
1996 06 16.10		S	9.1	AA	8.0	B		20	6	2			LOU
1996 06 16.29		S	8.5	NP	5.0	B		10					HAL
1996 06 16.94		S	8.2	AC	13.0	L	6	36	5.5	2			MEY
1996 06 17.01		S	8.6:	TI	8.0	B		10	5				POD
1996 06 17.03		S	7.8	TI	8.0	B		10	9	2			HOR02
1996 06 17.25	!	J	8.5	SC	25.4	T	4		3.16	s3/			ROQ
1996 06 17.99		S	8.5	AA	10	B		14	6	1			SHA02
1996 06 18.11		S	9.0	AA	8.0	B		20	< 5	2			LOU
1996 06 18.64		B	8.9	S	20.0	L	4	40	4	5			OHM
1996 06 18.73		S	8.9	AA	5.0	B		7	3	7			KOB01
1996 06 18.76		S	8.3	S	15.0	R	5	25	6	3			NAG02
1996 06 18.78		S	7.7	AA	5.0	B		10	7	2			SEA01
1996 06 18.98		S	8.2	AA	15.0	R		30	6	2			DIE02
1996 06 19.11		S	9.0	AA	8.0	B		20	4	2			LOU
1996 06 19.50		B	7.8	AA	8.0	B		15	7	3			SEA01
1996 06 19.57		B	9.7	HS	31.7	L	6	60	4	4			MIY01
1996 06 19.68		S	9.7	HS	25.4	T	6	60	3	5			YOS04
1996 06 19.75		S	7.7	AA	8.0	B		15	6	2			SEA01
1996 06 20.58		S	8.5	AA	20.0	L	4	100	4	4			PEA
1996 06 20.76		S	7.6	AA	5.0	B		10	9	2			SEA01
1996 06 21.58		S	7.7	VN	5.0	B		10		2			WIL02
1996 06 21.65		S	7.5	AA	5.0	B		10	7	2			SEA01
1996 06 22.11		S	9.1	AA	8.0	B		20	4	1			LOU
1996 06 22.22	!	J	8.1	SC	25.4	T	4		5.45	s4			ROQ
1996 06 22.32		S	8.1	AA	10.0	R	5	49	5.5	2/			SPR
1996 06 22.71		S	9.5:	HS	10.0	B		20	5				YOS02
1996 06 22.98		S	8.5	AA	10	B		14	7.5	1			SHA02

Comet 22P/Kopff [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 06 24.19		S	8.0	AA	8.0	B		20	6.7	3			BOR
1996 06 24.35		M	8.3	NP	5.0	B		10	6				HAL
1996 06 25.00		S	8.5:	AA	10	B		14	6.5	1			SHA02
1996 06 25.02		S	7.1	TI	8.0	B		10	13	1/			HOR02
1996 06 26.03		M	7.3	TI	5.0	B		10	12	2			HOR02
1996 06 26.22		S	7.9	AA	8.0	B		20	6.2				BOR
1996 06 26.71		S	7.8	AA	5.0	B		10	7	2			SEA01
1996 06 26.78		S	7.9	AA	8.0	B		15	5	4			SEA01
1996 06 27.22	!	J	7.9	SC	25.4	T	4		5.86	s5			ROQ
1996 06 27.72		S	7.5	AA	8.0	B		15	5	2			SEA01
1996 06 27.95		S	8.4:	AA	11	L	7	56	> 7	2/			BAR06
1996 06 28.78		S	7.8	AA	5.0	B		10	4	2			SEA01
1996 07 05.95		S	8.7	AA	11	L	7	56	8	2			BAR06
1996 07 06.18		S	7.8	AA	8.0	B		20	8.0	2			BOR
1996 07 06.28		S	8.0	AA	10.0	R	5	27	6.5	4/			SPR
1996 07 06.53		S	8.6	S	15.0	R	5	25	5	4			NAG02
1996 07 06.57		S	7.8	AA	5.0	B		10					SEA
1996 07 06.89		S	8.9	AA	6.0	B		20	& 5	4			MIK
1996 07 06.98		S	8.8	NP	7.0	B		10	9	2			MAR02
1996 07 06.99		S	8.7	NP	44.5	L	5	100	7	4			SAN04
1996 07 07.29		S	7.9	AA	10.0	R	5	17	8.5	4/			SPR
1996 07 07.87		S	8.8	AA	6.0	B		20	& 6	4			MIK
1996 07 07.97		S	8.0	AA	25.4	J	6	47	5	3			BOU
1996 07 08.23		S	8.5:	NP	5.0	B		10					HAL
1996 07 09.42		S	8.0	AA	10.0	B		25					SEA
1996 07 10.05		S	7.4	AA	15.0	R	8	30	7	4			DIE02
1996 07 10.55		S	8.6	S	15.0	R	5	25	6	4			NAG02
1996 07 10.91		S	8.9	AA	6.0	B		20	& 7	3			MIK
1996 07 10.96		S	7.3	VF	11.0	B		20	10	2/			BAR06
1996 07 10.96		S	7.5	VF	8.0	B		12	10	2			BAR06
1996 07 10.97		S	7.2	VF	11.0	B		20	12	3			ISH03
1996 07 10.97		S	7.5	AA	15.0	R	8	30	7	4			DIE02
1996 07 10.97		S	7.6	VF	8.0	B		40	10	3			ISH03
1996 07 10.98		S	7.9	AA	25.4	J	6	47	5.5	2			BOU
1996 07 11.04		S	8.6	AA	8.0	B		20	5	3			LOU
1996 07 11.17		S	7.7	AA	8.0	B		20	7.2	4			BOR
1996 07 11.46		S	8.1	AA	5.0	B		10					SEA
1996 07 11.53		S	8.6	S	15.0	R	5	25	6	3			NAG02
1996 07 11.57		B	9.8	HS	31.7	L	6	60	3	4			MIY01
1996 07 11.64		S	8.3	HS	25.4	T	6	60	5	3/			YOS04
1996 07 11.90		S	8.8	AA	6.0	B		20	& 7	3			MIK
1996 07 11.94		S	8.5	AC	40.0	L	5	51	2.8	2			MER
1996 07 12.17		S	7.6	AA	8.0	B		20	7.2	3			BOR
1996 07 12.95		S	7.3	VF	11.0	B		20	12	3			ISH03
1996 07 12.95		S	8.3	HD	6.0	B		20	10	2			SAR02
1996 07 12.95	!	V	8.6	AA	7.1	A	4		& 5	6			MIK
1996 07 12.96		S	7.2	VF	8.0	B		12	9	1/			BAR06
1996 07 12.96		S	7.3	VF	11.0	B		20	12	2/	0.2	112	BAR06
1996 07 13.00		S	7.7	AA	15.0	R	8	30	7	5			DIE02
1996 07 13.29		S	7.9	AA	8.0	B		11	8	4/			SPR
1996 07 13.60		C	8.4:	GA	8.0	R	6		11.5		32	m 263	NAK01
1996 07 13.63		S	8.5	VG	8.0	B		11	8	4			NAG08
1996 07 14.03		S	8.2	AA	8.0	B		20	8.5	2			LOU
1996 07 14.10		S	8.3	S	7.0	B		10	8	2			MAR02
1996 07 14.19		S	7.3	AA	5.0	B		10	10	2			BOR
1996 07 14.19		S	7.5	AA	8.0	B		20	6	4/			BOR
1996 07 14.28		S	7.9	AA	8.0	B		11	8	4/			SPR
1996 07 14.95		S	8.2	HD	6.0	B		20	8	2			SAR02
1996 07 14.96		S	8.5	S	20.3	T	10	50	3.2	3			KAM01
1996 07 15.05		S	8.1	AA	8.0	B		20	8.5	2			LOU
1996 07 16.01		S	8.0	AA	15.0	R	8	30	7	3			DIE02
1996 07 16.93		S	8.6	S	20.3	T	10	50	2.6	3/			KAM01
1996 07 16.97		S	8.2	HD	6.0	B		20	12	2			SAR02
1996 07 17.88		S	8.7	AA	6.0	B		20	& 8	4			MIK
1996 07 17.90		S	8.4	S	7.0	B		10	12	1			MAR02

Comet 22P/Kopff [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 07 18.88		S	8.7	AA	6.0	B		20	& 8	4			MIK
1996 07 18.98		S	8.3	AA	15.0	R	8	30	5	5			DIE02
1996 07 18.99		S	8.3	AA	25.4	J	6	47	5	2			BOU
1996 07 20.04		S	8.5:	S	7.0	B		10	9	1/			MAR02
1996 07 20.96		S	8.3	S	7.0	B		10	9	4			SAN04
1996 07 20.97		S	8.3	S	7.0	B		10	10	4			MAR02
1996 07 22.90	!	V	9.5	YF	20.0	T	2		& 6	6			MIK

Comet 24P/Schaumasse

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1993 02 22.84		S	9.1	AA	15.0	L	4	26	& 6	2/			PER01
1993 02 23.85		S	8.8	AA	15.0	L	4	26	& 5	3/			PER01
1993 02 23.85		S	8.9	AA	3.4	B		9	& 4				PER01

Comet 29P/Schwassmann-Wachmann 1

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 10 21.49		I	[13.0:		41	L	4	183					HAL
1995 10 27.50		S	13.3	AC	41	L	4	183					HAL
1995 11 01.50		S	13.4	AC	41	L	4	183					HAL
1995 11 19.50		S	13.4	AC	41	L	4	72	2				HAL
1995 11 30.52		S	13.4	AC	41	L	4	72	2	1/			HAL
1995 12 19.40		I	[13.5:		41	L	4	183					HAL
1995 12 27.36		I	[13.5:		41	L	4	183					HAL
1996 01 14.34		S	13.2	AC	41	L	4	72					HAL
1996 01 15.33		S	13.1	AC	41	L	4	72	2.5				HAL
1996 01 21.33		S	13.2	AC	41	L	4	72	2.5	1/			HAL
1996 02 12.24		I	[13.5:		41	L	4	183					HAL
1996 02 20.27		M	11.8	AC	41	L	4	72	0.2	8/			HAL
1996 02 23.26		M	11.8	AC	41	L	4	72	0.5	8			HAL
1996 02 24.70		S	12.1	VN	43	L	4	160	1.5	3			CLA
1996 02 27.84		M	11.0	TI	30	L	5	200	1.5	5			POP
1996 03 08.94		S	11.8	AC	28.0	T	10	88	> 2	1			COM
1996 03 10.21		S	11.3	AC	41	L	4	72	2.5				HAL
1996 03 12.82		E	12.2	PA	30	L	5	60	2	6			NEV
1996 03 13.54		M	11.1	HS	12.5	L	6	60	3.0	4			TSU02
1996 03 16.67		S	11.5	VN	15	L	6	75	1.5	2			CLA
1996 03 16.82		E	11.7	PA	30	L	5	60	2.5	6			NEV
1996 03 17.34		M	11.4	AC	41	L	4	72	2	5/			HAL
1996 03 19.74		M	11.3	HS	25.0	L	6	47					TSU02
1996 03 19.79		E	11.3	PA	30	L	5	60	2.5	4			NEV
1996 03 19.86		M	10.9	HS	20	L	5	125	1.4	3			PLS
1996 03 20.59		S	11.7	VN	15	L	6	75	1.5	2			CLA
1996 03 21.82		E	11.5	PA	30	L	5	60	2	2			NEV
1996 03 23.19		M	11.3	AC	41	L	4	72	3				HAL
1996 03 23.94	!	E	11.8	NP	30	L	5	60	2	0			NEV
1996 04 06.82		B	11.2	GA	11	L	7	56	2	3			BAR06
1996 04 06.87		S	11.3	AC	13.0	L	6	36	3	4			MEY
1996 04 07.15		S	11.5	AC	41	L	4	72	3	1/			HAL
1996 04 07.82		S	11.4:	GA	11	L	7	56	2	3			BAR06
1996 04 08.90	!	E	12.7	NP	30	L	5	60	2	0			NEV
1996 04 15.24		S	11.5	AC	41	L	4	72	4	0/			HAL
1996 04 15.85		S	11.2	AC	13.0	L	6	36	3.5	1/			MEY
1996 04 15.87		S	12.3	TI	20	L	4	57	2	2			KYS
1996 04 19.85		S	12.5	HS	35	L	5	92	2	1/			HOR02
1996 04 20.20	*	c	18.9	FA	91.4	L	5		5.59				SCO01
1996 04 22.23		S	11.6	AC	41	L	4	72		0/			HAL
1996 04 22.84		S	11.8:	TI	35	L	5	92	2.3	1/			HOR02
1996 05 04.84		M	12.1:	TI	35	L	5	104	2	2/			HOR02
1996 05 05.89		S	13.0	VB	30	R	18	230	0.6	3			SHA02
1996 05 06.86		M	12.0	TI	35	L	5	104	1.6	2/			HOR02
1996 05 06.86		M	12.0	TI	35	L	5	104	1.6	3			PLS
1996 05 06.91		S	13.1	VB	33	L	5	120	1.0	3			SHA02
1996 05 07.14		M	12.3	AC	41	L	4	72	4	4			HAL

Comet 29P/Schwassmann-Wachmann 1 [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 05 08.91		S	13.3	VB	30	R	18	230	0.7	2			SHA02
1996 05 13.20		S	12.3	AC	41	L	4	72	2	2			HAL
1996 05 15.54		C	12.1	GA	60.0	Y	6		4.4	1/			NAK01
1996 05 15.54		c	16.0	GA	60.0	Y	6						NAK01
1996 05 16.85		M	12.6	HS	35	L	5	104	2	2			HOR02
1996 05 17.88		S[	12.5:	NP	30	L	5	100					NEV
1996 05 18.89		S	12.6	HS	44.5	L	5	75	1.5	2			SAR02
1996 05 18.89		S	13.0	HS	44.5	L	5	75	1	2			SZE02
1996 05 19.97		B	13.2	HS	25.6	L	5	84	2	2			BIV
1996 05 21.20		S	12.5	AC	41	L	4	72	2	1			HAL
1996 05 21.97		B	13.6	HS	25.6	L	5	169	1	5			BIV
1996 05 22.50		C	12.7	GA	60.0	Y	6		3.5	0/			NAK01
1996 05 22.50		c	16.7	GA	60.0	Y	6						NAK01
1996 06 06.51	a	C	12.9	GA	60.0	Y	6		2.7	0/			NAK01
1996 06 06.51	a	c	16.7	GA	60.0	Y	6						NAK01

Comet 30P/Reinmuth 1

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 12 21.85		C	16.6	GA	60.0	Y	6		0.55		1.4m	293	NAK01
1995 12 27.84		C	16.9	GA	60.0	Y	6		0.6		1.8m	292	NAK01
1996 03 18.79		C	17.7	GA	60.0	Y	6		0.5			280	NAK01
1996 04 11.67		C	17.6	GA	60.0	Y	6		0.35				NAK01
1996 04 21.70		C	17.5	GA	60.0	Y	6		0.4			300	NAK01
1996 04 21.77		C	17.9	HS	28.0	T	6		0.5				KIN
1996 05 12.61		C	17.6	GA	60.0	Y	6		0.35				NAK01
1996 05 22.56		C	17.9	GA	60.0	Y	6		0.3			240	NAK01
1996 05 24.21		c	22.0	FA	91.4	L	5		0.18				SC001
1996 05 24.22		C	18.5	FA	91.4	L	5						SC001
1996 06 16.17		C	19.1	FA	91.4	L	5						SC001
1996 06 16.21		c	22.1	FA	91.4	L	5		0.23		160.2s	283	SC001

Comet 41P/Tuttle-Giacobini-Kresák

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 08 24.38		S	9.5	GA	20.3	L	7	56	3	2			CAM03

Comet 45P/Honda-Mrkos-Pajdušáková

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 12 10.07	!	S	8.7	NP	5.0	B		10					HAL
1995 12 10.95		S	8.5	S	7.0	B		10	4.2	2			DEA
1995 12 12.43		S	8.8	AA	10.0	B		25		4			SEA
1995 12 15.06	!	S	8.7	NP	5.0	B		10					HAL
1995 12 15.43		S	8.5	AA	10.0	B		25					SEA
1995 12 20.96		S	8.3	AC	6	R	15	50	3	4			MOR03
1995 12 21.07		S	7.8	SC	5.0	B		10					HAL
1995 12 25.44		S	7.3	AA	10.0	B		25					SEA
1995 12 26.00		S	6.8	AA	20.0	T	10	50	2.2	6	&1	315	SHA04
1995 12 28.07		S	7.3	SC	5.0	B		10					HAL
1995 12 29.93		S	7.0	SC	25.4	L	4	47	3	6			DID
1995 12 30.93		S	7.0	SC	25.4	L	4	47	3	5			DID
1996 01 04.05		S	7.8:	SC	20	L	6	49					HAL
1996 01 25.47	w	S	8.7	AC	15	R	5	42	5	1			MOR03
1996 01 25.53		S	9.2	NP	20	L	6	49	5.5	3			HAL
1996 01 26.75		S	7 :	AA	10.0	B		25	12	1			SEA
1996 01 27.51		S	8.3	NP	5.0	B		10	15	2/			HAL
1996 01 27.74		S	7 :	AA	10.0	B		25					SEA
1996 01 28.46		S	7.6	AC	3.5	B		7	11				MOR03
1996 01 30.30		S	8.0	S	7.0	B		10	30	5			DEA
1996 01 31.30		S	7.8	S	7.0	B		10	22.4	5			DEA
1996 02 01.16		E	8.4	AA	25	L	4	40	15	2			NEV
1996 02 01.18		M	7.9	S	5.0	B		10		2			AND03
1996 02 01.22		S	8.2	A	8.0	B		15		0/			COM
1996 02 01.40		S	8.5	SC	25.4	L	4	47	7	0			DID

Comet 45P/Honda-Mrkos-Pajdusakova [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 02 01.50		S	8.0:	NP	5.0	B		10	&15				HAL
1996 02 01.70		S	7.3	AA	10.0	B		25	12	1			SEA
1996 02 02.18		M	8.4	S	5.0	B		10		2			AND03
1996 02 02.46		S	8.4	AC	15	R	5	42	8	2			MOR03
1996 02 03.16		B	9.0	S	8.0	B		10		2			RAD01
1996 02 03.17		M	8.7	S	5.0	B		10		2			AND03
1996 02 03.18		B	8.7	S	8.0	B		10		2			JOR
1996 02 11.96		S	12.0	NP	25	L	4	40	7	0			NEV
1996 02 16.42		S	8.3	NP	5.0	B		10	10	0/			HAL
1996 02 17.71		S	9.9	VN	43	L	4	92	10	2	20 m	305	CLA
1996 02 20.66		S	9.9	VN	43	L	4	60	10	1			CLA
1996 02 23.37		S	9.5	AC	41	L	4	72	6	0			HAL
1996 02 24.70		S	10.1	VN	43	L	4	92	5	1			CLA
1996 04 20.19	*	c	23.2	FA	91.4	L	5		0.92		14.1m	288	SCO01

Comet 48P/Johnson

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 02 15.49		k[	22.0	EB	154.9	L	3						HER02

Comet 51P/Harrington

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1994 09 06.35		S	13.7	AC	44.5	L	4	167	0.7	2			MOR03
1994 09 11.33		S	13.9	AC	44.5	L	4	167	0.7				MOR03
1994 09 29.93		B	13.0:	VF	40	L	4	90	0.5	6	0.02	300	REN
1994 10 02.37		S	13.3	AC	44.5	L	4	167	0.6	3			MOR03
1994 10 06.03		B	13.0:	VF	40	L	4	90	0.5	6			REN
1994 10 08.37		S	13.0	AC	44.5	L	4	167	1.0	3			MOR03
1994 10 09.00		B	13.0	VF	40	L	4	90	1.5	6			REN
1994 10 11.16		S	13.2	AC	44.5	L	4	167	0.9	3			MOR03
1994 10 12.39		S	13.1	AC	44.5	L	4	167	1.0	2			MOR03

Comet 57P/du Toit-Neujmin-Delporte

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 07 24.78		C	13.3	GA	60.0	Y	6		1.45		> 5.3m	249	NAK01
1996 07 26.08	!	V	13.3	YF	20.0	T	2		& 1	8	& 8 m	245	MIK

Comet 58P/Jackson-Neujmin

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 07 26.89		O[	13.5	HS	20	R	17	140	! 1				LEH
1995 07 29.92		O[	13.5	HS	20	R	17	140	! 1				LEH
1995 07 31.57		S[	13.2	GA	20.3	L	7	56					CAM03
1995 10 02.89		M	11.3	TI	20	R	17	87	3	2/			LEH
1995 10 11.77		M	11.4	TI	20	R	17	87	3	2/			LEH
1995 10 12.12		S	12.9	AC	41	L	4	183		1			HAL
1995 10 19.23		S	12.5	AC	41	L	4	72					HAL
1995 10 24.84		M	12.5	TI	20	R	17	140	2	2/			LEH
1995 10 27.19		S	12.1	AC	41	L	4	72	4	1			HAL
1995 11 11.11		S	11.4	AC	41	L	4	72					HAL
1995 11 14.17		S	10.2	AC	41	L	4	72	6				HAL
1995 11 16.94		B	12.0:	VF	40.0	L	4	96	2	4			REN
1995 11 17.90		B	12.8	VF	40.0	L	4	96	1.5	3			REN
1995 11 18.18		M	10.0	AC	41	L	4	72	7				HAL
1995 11 21.43		S	10.3:	GA	20.3	L	7	56	3	2			CAM03
1995 11 21.85		M	13.2	HS	20	R	17	140	2	3			LEH
1995 11 22.43		S	10.6	GA	20.3	L	7	56	4	1			CAM03
1995 11 23.51		S	10.5	GA	20.3	L	7	56	5	0			CAM03
1995 11 25.21		S	10.6	AC	41	L	4	72	6				HAL
1995 11 26.88		B	12.7	VF	40.0	L	4	96	1.5	2			REN
1995 12 11.11		S	11.1	AC	41	L	4	72					HAL
1995 12 19.17		S	10.9	AC	41	L	4	72					HAL
1995 12 26.94		[	13.5:		40.0	L	4	96					REN

Comet 58P/Jackson-Neujmin [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 01 10.13		S	11.7	AC	41	L	4	72					HAL
1996 01 17.17		S	11.8	PC	41	L	4	72	3	1			HAL

Comet 65P/Gunn

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 01 21.54		S	13.7	AC	41	L	4	183					HAL
1996 01 24.53		S	13.7	AC	41	L	4	183					HAL
1996 01 25.51		S	13.7	AC	41	L	4	183	1	4			HAL
1996 02 19.51		S	13.6	AC	41	L	4	183	1	4			HAL
1996 02 23.49		S	13.6	AC	41	L	4	183	1	3/			HAL
1996 03 17.48		S	13.3	AC	41	L	4	72	1.5	2/			HAL
1996 03 26.45		S	13.4	AC	41	L	4	183					HAL
1996 04 15.44		S	13.3	AC	41	L	4	183					HAL
1996 04 27.43		S	12.9	AC	41	L	4	183					HAL
1996 05 13.28		S	12.7	AC	41	L	4	72	1.5				HAL
1996 05 19.01		S	13.6	HS	44.5	L	5	146	1	3			SAR02
1996 05 19.01		S	14.0	HS	44.5	L	5	146	0.7	4			SZE02
1996 05 21.31		M	12.6	AC	41	L	4	72					HAL
1996 05 24.95		M	12.4	HS	35	L	5	158	1	3			HOR02
1996 05 25.02		S	12.3	NP	44.5	L	5	100	1.2	5			MAR02
1996 05 25.03		S	12.4	NP	44.5	L	5	100	1.5	4			SAN04
1996 05 26.03		S	12.7	NP	44.5	L	5	100	1.5	4			MAR02
1996 06 06.90		M	12.0	HS	35	L	5	158	1	2/			HOR02
1996 06 08.95		S	12.2	NP	44.5	L	5	100	2.0	4			MAR02
1996 06 08.96		S	12.6	NP	44.5	L	5	100	1.5	2			SAN04
1996 06 08.98		S	12.0	HS	35	L	5	158	1.4	2			HOR02
1996 06 13.94		S	12.3	HS	35	L	5	158	1.5	2			HOR02
1996 06 13.95		S	12.4	HS	35	L	5	158	1.2	3			PLS
1996 06 15.94		S	13.0	HS	44.5	L	5	146	1	3			SAR02
1996 06 16.19		M	12.3	AC	41	L	4	72	1.5				HAL
1996 06 17.88		S	11.8:	HS	35	L	5	158	1	2			HOR02
1996 06 23.35		S	12.4:	AC	41	L	4	72					HAL
1996 06 24.30		M	12.5	AC	41	L	4	72					HAL
1996 07 05.86		S	12.4	HS	44.5	L	5	146	1.5	4			SAR02
1996 07 06.26		S	12.7	AC	41	L	4	183					HAL
1996 07 06.93		S	13.1	NP	44.5	L	5	100	0.8	2			MAR02
1996 07 06.94		S	13.3	NP	44.5	L	5	100	1.0	1			SAN04
1996 07 20.90		S	13.3	NP	44.5	L	5	100	0.5	2			MAR02
1996 07 20.91		S	13.5	NP	44.5	L	5	100	0.5	2			SAN04

Comet 67P/Churyumov-Gerasimenko

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 09 24.24		M	14.5	GA	45.7	L	4	135	0.25	7			MOD
1995 10 15.13		I	[13.5:		41	L	4	183					HAL
1995 10 19.25		S	[13.4	AC	41	L	4	72	& 0.5				HAL
1995 10 23.12		S	[12.4	GA	20.0	L	5	68	! 1.0				MOD
1995 11 13.13		M	13.2	AC	41	L	4	72	0.5				HAL
1995 11 18.16		S	13.1	AC	41	L	4	72					HAL
1995 11 25.11		M	12.9	AC	41	L	4	72					HAL
1995 12 11.09		M	12.6	AC	41	L	4	72					HAL
1995 12 19.14		M	12.5	AC	41	L	4	72					HAL
1996 01 08.10		M	12.1	AC	41	L	4	72					HAL
1996 01 12.10		M	11.5	AC	41	L	4	72	2				HAL
1996 01 13.02		S	12.7	AC	44.5	L	4	167	0.8	5			MOR03
1996 01 14.42		S	11.0	GA	20.3	L	7	56	4				CAM03
1996 01 17.15		M	11.2	PC	41	L	4	72	2.5				HAL
1996 01 21.11		k	12.2	EB	228.6	L	2						HER02
1996 01 21.11		k	12.2	EB	228.6	L	2						HER02
1996 01 23.13		M	11.4	PC	41	L	4	72					HAL
1996 02 08.11		M	10.8	PC	41	L	4	72	1.5				HAL
1996 02 09.79		S	12.5	NP	25	L	4	40	2	2			NEV
1996 02 11.71		S	12.5	NP	25	L	4	40	2	2			NEV
1996 02 13.03		S	12.5	AC	44.5	L	4	80	1.0	4			MOR03

Comet 67P/Churyumov-Gerasimenko [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 02 15.11		M	11.3	PC	41	L	4	72	2	6			HAL
1996 02 16.01		S	12.5	AC	44.5	L	4	80	1.4	4			MOR03
1996 02 16.80		S	10.8	AC	28.0	T	10	78	& 2	2			COM
1996 02 23.11		M	11.2	PC	41	L	4	72	1.5	5/			HAL
1996 02 24.56		S	13.2	VN	43	L	4	160	2	2			CLA
1996 03 07.81		S	11.5:	AC	28.0	T	10	88	& 2	1			COM
1996 03 08.04		S	12.7	AC	44.5	L	4	167	1.3	3			MOR03
1996 03 08.84		S	11.4	AC	28.0	T	10	88	1.5	2			COM
1996 03 10.13		M	11.5	PC	41	L	4	72	1.5				HAL
1996 03 17.08		S	13.2	AC	44.5	L	4	167	0.9	3			MOR03
1996 03 18.14		S	11.6	PC	41	L	4	72	1.5	4/			HAL
1996 04 07.47		C	13.0	GA	60.0	Y	6		1.6				NAK01
1996 04 08.13		S	13.3	WA	41	L	4	183	0.5				HAL
1996 04 22.45		C	13.5	GA	60.0	Y	6		1.3				NAK01
1996 05 15.46		C	14.1	GA	60.0	Y	6		1.2				NAK01
1996 06 06.49		C	14.5	HS	60.0	Y	6		0.9				NAK01

Comet 71P/Clark

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 06 07.70		S	11.7	GA	31.7	L	5	62	0.5	1			JON
1995 06 22.73		S	11.8	GA	31.7	L	5	62	0.5	1			JON
1995 06 24.72		S	11.9	GA	31.7	L	5	62		1			JON
1995 06 25.72		S	11.9	GA	31.7	L	5	62	0.5	1			JON
1995 07 07.73		S	11.8	GA	31.7	L	5	62	0.5	1			JON
1995 07 08.74		S	11.9	GA	31.7	L	5	62	0.5	1			JON
1995 07 31.54		S	11.5	GA	20.3	L	7	56	1	2			CAM03
1995 08 04.63		S	11.5	GA	20.3	L	7	56	1	3			CAM03

Comet 73P/Schwassmann-Wachmann 3

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 10 10.72		S	6.2	S	20	L	8	83		5	50 m		C0002
1995 10 11.08		M	6.4	SC	5.0	B		10			0.25	112	HAL
1995 10 11.72		S	6.5	AC	32	C	17	167			12 m		OVE
1995 10 13.07		M	5.4	SC	5.0	B		10			0.67	116	HAL
1995 10 13.40					15	L	8	50	& 5	9	72 m	110	WIL02
1995 10 13.40		S	5.2	AA	5.0	B		10		9	0.5		WIL02
1995 10 14.38		S	5.3	AA	5.0	B		10		8	0.5		WIL02
1995 10 14.52		M	6.1	AA	20.0	L	4	75	3	7	1.8	88	CLA
1995 10 14.53		S	6.0	AA	5.0	B		7			1.2		CLA
1995 10 15.07		M	5.7	SC	5.0	B		10			0.75	100	HAL
1995 10 15.40		S	5.8	SC	5.0	B		3					JON
1995 10 15.42					15	L	8	50	& 4	9	60 m	110	WIL02
1995 10 15.42		S	5.3	AA	5.0	B		10		8	0.5		WIL02
1995 10 16.41		S	5.2	AA	5.0	B		10		9	0.5		WIL02
1995 10 16.43		B	5.5	AA	5.0	B		10			1.8	102	SEA
1995 10 16.93		B	6.2	S	7.0	B		10	0.5	9	50.4m	97	DEA
1995 10 17.41		S	6.0	SC	8.0	B		15	3	7	1.5		SEA01
1995 10 17.42		B	5.9	AA	10.0	B		25			1.1	100	SEA
1995 10 18.39		B	6.2	SC	8.0	B		15	3	6	1		SEA01
1995 10 18.49		S	6.3	AA	7.0	B		15			1.5		CLA
1995 10 18.50		M	6.4	AA	31.0	L	6	90	3	7	1.8	90	CLA
1995 10 18.94		B	6.3	S	7.0	B		10	0.5	9	50.0m	103	DEA
1995 10 19.08		M	6.2	SC	5.0	B		10			0.83	104	HAL
1995 10 19.38		B	6.7	SC	8.0	B		15	5	5	1		SEA01
1995 10 19.44		B	6.4	AA	10.0	B		25		7			SEA
1995 10 19.49		M	6.4	AA	31.0	L	6	90	3	7	1.8	90	CLA
1995 10 19.72		S	6.6	S	8	R	15	48			12 m		OVE
1995 10 19.92		S	6.3	S	7.0	B		10	3.0	8	28.0m	103	DEA
1995 10 20.37		S	6.4	SC	5.0	B		10	5	6	1		SEA01
1995 10 20.80		S	6.0	S	13	R		21		5	45 m		SKI01
1995 10 21.38		S	6.6	SC	5.0	B		10	4	5	1		SEA01
1995 10 21.49		M	6.6	AA	15.0	L	6	28	2	7	1.8	91	CLA
1995 10 21.72		S	6.6	S	8	R	15	48					OVE

Comet 73P/Schwassmann-Wachmann 3 [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 10 21.74		S	6.4	S	20	L	8	83		7			C0002
1995 10 21.80		S	6.1	S	13	R		21		5	30 m		SKI01
1995 10 22.08		M	6.4	SC	5.0	B		10			0.5	100	HAL
1995 10 22.38		S	6.6	SC	5.0	B		10	3	4			SEA01
1995 10 22.72		S	6.6	S	8	R	15	48					OVE
1995 10 22.75		S	6.2	S	20	L	8	83		7			C0002
1995 10 22.97		B	6.5	S	7.0	B		10	3.0	8	47.2m	110	DEA
1995 10 22.99	a	M	7.6:	SC	20.0	L	5	35	1.6	4/	0.03	101	MOD
1995 10 23.38		B	6.5	SC	8.0	B		15	3	7	0.75		SEA01
1995 10 23.41		S	6.5	SC	8.0	B		20	3	5	1	50	CAM03
1995 10 23.44		B	6.3	AA	10.0	B		25			0.8	110	SEA
1995 10 23.53		M	6.6	AA	15.0	L	6	75	3	7	1.4	91	CLA
1995 10 23.73		S	7.2	S	8	R	15	48			30 m		OVE
1995 10 23.93		B	6.8	S	7.0	B		10	4.5	8	1.13	110	DEA
1995 10 24.47		B	6.8	AA	10.0	B		25					SEA
1995 10 24.52		M	6.7	AA	20.0	L	4	75	3	7	1.5	91	CLA
1995 10 24.72		S	7.1	S	8	R	15	48					OVE
1995 10 24.93		B	6.5	S	7.0	B		10	2.0	8	1.13	99	DEA
1995 10 25.08		M	6.8	SC	5.0	B		10			0.5	95	HAL
1995 10 25.37		S	7.8	C	7.8	R	7	30			0.3	90	JON
1995 10 25.40		S	6.5	SC	8.0	B		20	3	5	1	50	CAM03
1995 10 25.73		S	7.1	S	8	R	15	48					OVE
1995 10 25.93		M	7.2	S	7.0	B		10	2.0	8	55.2m	100	DEA
1995 10 26.38		S	7.3	C	4.5	R	6	13			0.3	95	JON
1995 10 26.40		S	6.5	SC	8.0	B		20	3	5	1	50	CAM03
1995 10 26.45		B	6.7	AA	10.0	B		25	3	6	0.49	90	SEA
1995 10 26.73		S	7.1	S	8	R	15	48					OVE
1995 10 26.93		B	7.2	S	7.0	B		10	3.6	7	1.06	95	DEA
1995 10 27.00		S	6.5:	AA	20.0	T	10	50	3.2	6/	&1	46	SHA04
1995 10 27.73		S	7.1	S	8	R	15	48					OVE
1995 10 27.94		B	7.2	S	7.0	B		10	3.6	7	42 m	101	DEA
1995 10 28.45		B	7.5:	AA	10.0	B		25					SEA
1995 10 28.73		S	7.6	S	8	R	15	48					OVE
1995 10 28.97		B	7.0	S	7.0	B		10	4.5	6	28 m	99	DEA
1995 10 29.00		S	7.5	AA	20.0	T	10	50	2.1	7	&1	82	SHA04
1995 10 30.00		S	7.8:	AA	20.0	T	10	50		5	&1		SHA04
1995 10 31.43		B	8.0	AA	10.0	B		25					SEA
1995 10 31.74		S	7.5	S	20	L	8	83		5			C0002
1995 11 05.47		B	8 :	AA	10.0	B		25					SEA
1995 11 05.98		B	7.4	S	7.0	B		10	4.0	3	16 m	96	DEA
1995 11 06.47		B	8.1	AA	10.0	B		25			0.27	85	SEA
1995 11 06.95		S	7.4	S	7.0	B		10	4.0	5	15 m	100	DEA
1995 11 07.46		S	7.9	AA	10.0	B		25	1		0.33	80	SEA
1995 11 07.94		S	7.1	S	7.0	B		10	3	3	24 m	100	DEA
1995 11 08.08		S	8.1	AC	20	L	6	49					HAL
1995 11 08.44		M	7.7	AA	10.0	B		25			0.5	95	SEA
1995 11 08.93		S	7.1	S	7.0	B		10	4	5	42 m	92	DEA
1995 11 08.97		S	8.1	AC	15	R	5	42	4	3			MOR03
1995 11 09.93		S	7.1	S	7.0	B		10	4	5	36 m	90	DEA
1995 11 10.94		S	7.3	S	7.0	B		10	4	5	24 m	80	DEA
1995 11 11.08		S	7.3	SC	5.0	B		10			0.25	82	HAL
1995 11 11.42		S	9.4	VN	7.8	R	7	30	1	2	0.2	95	JON
1995 11 12.41		S	7.5	SC	20.3	L	7	56	1	3	0.5	75	CAM03
1995 11 13.42		S	8.6	C	7.8	R	7	30	2	1			JON
1995 11 15.08		S	7.0	SC	5.0	B		10			0.25	83	HAL
1995 11 15.42		S	8.0	AA	10.0	B		25			0.33	97	SEA
1995 11 20.09		S	7.2	SC	5.0	B		10					HAL
1995 11 20.95		B	8.1	S	7.0	B		10	5.5	4	37 m	89	DEA
1995 11 21.42		S	7.5	SC	20.3	L	7	56	1		0.5	75	CAM03
1995 11 22.42		S	7.5	SC	20.3	L	7	56	1	3/	0.5	70	CAM03
1995 11 23.96		S	7.7	AC	15	R	5	42	4	3	0.10	85	MOR03
1995 11 24.10		S	7.4	SC	5.0	B		10					HAL
1995 11 24.47		S	8.0	AA	10.0	B		25	& 4		0.5	72	SEA
1995 11 24.97		S	7.8	AC	15	R	5	42	3.5	2	0.08	85	MOR03
1995 11 25.75		S	7.7	S	20	L	8	83		3			C0002

Comet 73P/Schwassmann-Wachmann 3 [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 11 26.95		B	7.8	S	7.0	B		10	10.5	5	18 m	90	DEA
1995 11 29.80		S	7.7	S	20	L	7	54					VAN13
1995 11 29.97		S	7.6	S	7.0	B		10	3.1		10 m	91	DEA
1995 11 30.48		S	8.5:	AA	10.0	B		25	& 3		0.33	70	SEA
1995 11 30.83		S	7.6	S	20	L	7	54					VAN13
1995 12 01.80		S	7.8	S	20	L	7	54					VAN13
1995 12 01.96		S	7.3	S	7.0	B		10	4.1	3			DEA
1995 12 02.44		S	8.6	AA	10.0	B		25					SEA
1995 12 03.43		S	8.6	AA	10.0	B		25					SEA
1995 12 04.44		S	8.8	AA	10.0	B		25					SEA
1995 12 09.97		S	7.4	S	7.0	B		10	5.3	3			DEA
1995 12 10.10		S	8.5	NP	5.0	B		10					HAL
1995 12 10.97		S	7.4	S	7.0	B		10	10	4			DEA
1995 12 12.44		S	8 :	AA	10.0	B		25					SEA
1995 12 16.44		S	8.3	AA	10.0	B		25					SEA
1995 12 19.09	!	S	8.7	NP	5.0	B		10					HAL
1995 12 24.44		S	8.8	AA	10.0	B		25					SEA
1995 12 29.09		S	9.4	AC	41	L	4	72	4				HAL
1996 01 08.07		S	10.3	AC	41	L	4	72					HAL
1996 01 17.08		S	10.4	AC	41	L	4	72					HAL

Comet 73P/Schwassmann-Wachmann 3 [component A]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 01 21.10		k	17.6	EB	228.6	L	2						HER02
1996 02 15.10		k	17.1	EB	154.9	L	3						HER02

Comet 73P/Schwassmann-Wachmann 3 [component B]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 01 21.10		k	17.5	EB	228.6	L	2						HER02
1996 02 15.10		k	17.1	EB	154.9	L	3						HER02

Comet 73P/Schwassmann-Wachmann 3 [component C]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 01 21.10		k	17.2	EB	228.6	L	2						HER02
1996 02 15.10		k	16.8	EB	154.9	L	3						HER02

Comet 95P/Chiron = (2060) Chiron

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 01 21.51		I	15.3	AC	41	L	4	183	0.0	9			HAL
1996 01 22.48		I	15.3	NP	41	L	4	183	0.0	9			HAL
1996 02 14.43		I	15.2	NP	41	L	4	183	0.0	9			HAL
1996 02 21.77		C	15.8	GA	60.0	Y	6			9			NAK01
1996 02 23.42		I	15.2	NP	41	L	4	183	0.0	9			HAL
1996 02 24.83		S	14.9	VN	43	L	4	160	< 1	9			CLA
1996 03 16.35		I	15.1	NP	41	L	4	183	0.0	9			HAL
1996 03 25.40		I	15.2	NP	41	L	4	183	0.0	9			HAL
1996 04 09.22		I	15.1	NP	41	L	4	183	0.0	9			HAL
1996 04 17.99		I	15.0:	AC	30	L	5	200		9			POP
1996 04 22.59		C	15.7	GA	60.0	Y	6			9			NAK01
1996 04 23.29		I	15.1	NP	41	L	4	183	0.0	9			HAL
1996 05 12.22		C	15.9	HS	20.3	L	4			9			KEN02
1996 05 12.23		C	15.8	HS	20.3	L	4			9			KEN02
1996 05 12.24		C	15.7	HS	20.3	L	4			9			KEN02
1996 05 13.24		I	15.2	NP	41	L	4	183	0.0	9			HAL

Comet 109P/Swift-Tuttle

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1992 11 24.72		B	5.3	A	5	R	5	20	9	7			LAB
1992 11 28.74		B	6.0:	A	5	R	5	20	& 9	5			LAB
1992 11 30.67		B	5.1	S	11	L	7	32	2.5	3			BAG
1992 11 30.67		B	5.3	A	5	R	5	20	&10	3			LAB

Comet 109P/Swift-Tuttle [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1992 11 30.67		S	4.8	S	11	L	7	32					POM
1992 12 01.67		B	6.5	S	11	L	7	32	3.6	3			BAG
1992 12 01.67		S	6.7	S	11	L	7	32	2.2	3			POM
1992 12 07.68		S	5.9	S	11	L	7	32	2.6	3			POM
1992 12 07.69		B	5.7:	A	5	R	5	20	&10	2			LAB
1992 12 08.67		S	5.5	S	11	L	7	32	& 1.5	4			POM
1992 12 09.69		S	5.7:	S	11	L	7	32	2.8	3			POM
1992 12 18.66		S	6.0	S	11	L	7	32	3.2	5			POM
1992 12 19.66		S	5.8	S	11	L	7	32	2.4	3			POM

Comet 116P/Wild 4

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 12 19.35		S	14.1	WA	41	L	4	183	0.5				HAL
1995 12 22.43		k	14.2	EB	154.9	L	3		0.80	6	4.4m	282	HER02
1995 12 22.45		k	14.2	EB	154.9	L	3						HER02
1995 12 22.46		k	14.1	EB	154.9	L	3						HER02
1995 12 27.31		S	14.0	WA	41	L	4	183	0.5				HAL
1996 01 12.25		S	13.5	WA	41	L	4	72					HAL
1996 01 21.22		S	13.2	WA	41	L	4	72					HAL
1996 02 08.14		M	13.1	WA	41	L	4	72	1				HAL
1996 02 16.33		M	13.1	CA	41	L	4	72	1	5/			HAL
1996 02 17.59		S	13.0	VN	43	L	4	160	1	6			CLA
1996 02 23.24		M	13.1	WA	41	L	4	72	1	5			HAL
1996 02 24.63		S	12.9	VN	43	L	4	160	1.5	5			CLA
1996 03 08.85		S	12.3	AC	28.0	T	10	88	& 0.5	3			COM
1996 03 10.17		S	13.1	WA	41	L	4	72	1				HAL
1996 03 18.27		S	13.1	AC	41	L	4	72	1	5			HAL
1996 04 08.16		S	13.0:	AC	41	L	4	183					HAL
1996 04 13.23		M	13.1	AC	41	L	4	72					HAL
1996 04 15.85		O	11.8	TI	20	L	4	57	1.0	4			KYS
1996 04 19.84		M	12.1	HS	35	L	5	92	1.1	3/			HOR02
1996 04 20.16	*	c	17.7	FA	91.4	L	5		0.87		175.2s	96	SCO01
1996 04 20.82		M	11.9	HS	35	L	5	104	1.2	4			HOR02
1996 04 21.83		M	11.5	HS	35	L	5	104	1.7	2			PLS
1996 04 21.83		M	11.9	HS	35	L	5	104	1.4	3/			HOR02
1996 05 04.85		M	11.7	HS	35	L	5	104	1.1	2			PLS
1996 05 04.85		M	12.0	HS	35	L	5	158	1.2	3			HOR02
1996 05 05.91		S	12.7	VB	30	R	18	230	0.8	3			SHA02
1996 05 06.84		M	12.2	HS	35	L	5	158	1	2/			PLS
1996 05 06.85		M	12.3	HS	35	L	5	158	1.2	2/			HOR02
1996 05 06.89		S	11.9	VB	33	L	5	85	1.4	3			SHA02
1996 05 06.90		S	12.8	AC	25.4	J	6	115	0.6	4			BOU
1996 05 08.89		S	12.5	VB	30	R	18	230	0.7	3/			SHA02
1996 05 15.49		C	12.6	GA	60.0	Y	6		1.4		4.2m	102	NAK01
1996 05 16.86		M	11.7	TI	35	L	5	92	1.6	4			HOR02
1996 05 17.86		S	11.6	TI	35	L	5	104	1.5	2/			HOR02
1996 05 17.87		M	11.6	TI	35	L	5	104	1.4	2/			PLS
1996 05 18.85		S	12.3	HS	44.5	L	5	146	1.0	3			SAR02
1996 05 18.85		S	12.6	HS	44.5	L	5	146	1	4			SZE02
1996 05 21.85		M	11.7	TI	35	L	5	104	1.5	3			HOR02
1996 05 21.91		B	11.8	HS	25.6	L	5	84	1	5			BIV
1996 06 06.49	a	C	13.0:	GA	60.0	Y	6		1.2		2.6m	105	NAK01
1996 06 07.88		S	11.5:	TI	35	L	5	158	1	2/			HOR02

Comet 117P/Helin-Roman-Alu 1

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 06 18.30		c	20.1	FA	91.4	L	5		0.23		147.6s	292	SCO01
1996 06 18.31		C	17.1	FA	91.4	L	5						SCO01

Comet 121P/Shoemaker-Holt 2

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 11 16.55		C	18.7	GA	60.0	Y	6		0.2				NAK01
1995 11 21.59		C	18.8	GA	60.0	Y	6		0.2				NAK01
1995 12 17.55		C	19.0	GA	60.0	Y	6		0.25				NAK01

Comet 121P/Shoemaker-Holt 2 [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 02 19.47		C	19.3	GA	60.0	Y	6		0.2				NAK01

Comet 122P/de Vico

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 09 23.17		B	6.4	A	12	L	6	38	3.5	7/			REN
1995 09 25.16		B	6.0	A	8.0	B		12	& 6	7/	1	267	REN
1995 09 25.40		S	6.6	AA	20.0	T	10	50	1.7	7/	&0.5	315	SHA04
1995 09 26.11		S	5.6	S	11	L	8	45	2.9	6			C0002
1995 09 26.40		S	6.2	AA	20.0	T	10	50	2.2	7/	&1	92	SHA04
1995 09 27.40		S	5.9	AC	3.5	B		7					MOR03
1995 09 27.42		S	6.1	AA	20.0	T	10	50	2.0	7	&1	38	SHA04
1995 09 28.13		S	6.2	AC	10.0	B		14	5	7			L0001
1995 09 28.16		B	5.8	A	5.0	B		7	& 5	7/	1.3	280	REN
1995 09 28.16		S	5.8	AC	5.0	B		10		7			L0001
1995 09 28.40		S	5.8	AC	3.5	B		7					MOR03
1995 09 29.16		S	5.8	AA	8.0	B	6	20	6	7	0.7	285	BAR
1995 09 29.39		S	5.8	AC	3.5	B		7	4		0.4	270	MOR03
1995 09 30.17		S	5.8	AA	8.0	B	6	20	6	6	0.5	285	BAR
1995 09 30.31		S	6.2	AA	8.0	B		20	10	8	1.5		LOU
1995 09 30.40		S	5.5	AA	20.0	T	10	50	2.0	8	&1	304	SHA04
1995 09 30.98		S	5.4	AA	15.0	L	6	75	4	4	10 m		CLA
1995 10 01.11		S	5.4	S	11	L	8	45		7			C0002
1995 10 01.16		S	5.8	AA	8.0	B	6	20	6	5	0.5	285	BAR
1995 10 01.40		S	5.9	AA	3.5	B		7	4.5		0.3	280	MOR03
1995 10 01.88		S	5.3	AA	15.0	L	6	75	4	4			CLA
1995 10 02.40		S	5.7	AA	3.5	B		7	4	7	0.6	280	MOR03
1995 10 02.43		B	5.7	SC	5.0	B		10	3.0	7/	0.4	273	MOD
1995 10 02.88		S	5.3	AA	15.0	L	6	75	4	4			CLA
1995 10 03.42		B	5.6	SC	5.0	B		10	3.2	7	0.20	279	MOD
1995 10 04.54		S	6.0	AA	8.0	B		11	4.1	7	0.75	290	PRY
1995 10 05.15		M	6.1	S	8.0	B		10	5	7	5 m	290	LEH
1995 10 05.21		S	5.1	S	8.0	B		15	5	5			HUR
1995 10 05.52		S	5.9	AA	8.0	B		11	4.2	7	0.75	290	PRY
1995 10 06.15		S	5.0	AA	10.0	B		14	2.6	8	3	310	L0001
1995 10 06.16		B	5.6	A	5.0	B		7	& 5	7/	2.3		REN
1995 10 07.43		B	5.7	SC	5.0	B		10	4.1	7	0.25	292	MOD
1995 10 07.44		S	5.3	SC	8.0	B		20	8	7	2.1	296	KR002
1995 10 08.18		S	4.8	AA	5.0	B		10	3	7			L0001
1995 10 08.40		S	4.9	AA	20.0	T	10	50	1.6	8/	&1	300	SHA04
1995 10 09.18		S	5.5	AA	8.0	B	6	20	7	6	0.6	275	BAR
1995 10 09.21		S	5.4	S	8.0	B		15	5	6	0.6	340	HUR
1995 10 10.14		M	5.9	S	10.0	B	4	25	9	6/		295	LEH
1995 10 10.43		B	5.7	SC	5.0	B		10	4.2	7/			MOD
1995 10 11.13		M	5.9	S	5.0	B		10	11	6/		295	LEH
1995 10 11.42		S	5.5	SC	8.0	B		20	5	6			KR002
1995 10 11.48		M	5.6	SC	5.0	B		10					HAL
1995 10 12.12		M	5.8	S	10.0	B	4	25	6	6/	5 m	300	LEH
1995 10 12.40	s	S	5.8	AC	3.5	B		7					MOR03
1995 10 12.42		S	4.5	AA	20.0	T	10	50	1.9	7/	&2	308	SHA04
1995 10 13.11		B	4.7	S	8.0	B		8	4	3			VEL02
1995 10 13.11		B	4.8	S	8.0	B		8		2			BOJ01
1995 10 13.11		B	4.9	S	8.0	B		8	3	3			RAD01
1995 10 13.12		B	4.8	S	8.0	B		8		3			GRA07
1995 10 13.12		B	4.9	S	8.0	B		8		4			ARN
1995 10 13.43		B	6.0	SC	5.0	B		10	4.0	7			MOD
1995 10 13.44		S	5.5	SC	8.0	B		20	7	7			KR002
1995 10 15.11		B	5.9	S	8.0	B		8		3			GRA07
1995 10 15.53		S	5.9	SC	8.0	B		11	3.5	7	0.33	330	PRY
1995 10 16.11		B	6.1	S	8.0	B		8		2			VEL02
1995 10 16.13		B	6.3	S	8.0	B		8		2			RAD01
1995 10 16.14		B	6.3	S	8.0	B		8		3			BOJ01
1995 10 17.11		B	6.1	S	8.0	B		8	1.4	4			VEL02
1995 10 17.11		B	6.2	S	6	R		33	1.2	4			RAD01
1995 10 17.11		B	6.2	S	8.0	B		8		4			JOR
1995 10 17.11		B	6.2	S	8.0	B		8		4			KOL05

Comet 122P/de Vico [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 10 17.11		B	6.2	S	8.0	B		8		4			RAD01
1995 10 17.12		B	6.3	S	6	R		33		4			BOJ01
1995 10 17.13		B	6.2	S	8.0	B		8		4			ARN
1995 10 17.44		B	6.0	SC	5.0	B		10	3.8	6/			MOD
1995 10 17.49		S	5.8	SC	5.0	B		10			0.5	330	HAL
1995 10 18.11		B	6.0	S	8.0	B		8		5			VEL02
1995 10 18.12		B	5.8	S	8.0	B		8	2	5			RAD01
1995 10 18.12		B	5.9	S	8.0	B		8		5			GRA07
1995 10 18.12		M	5.9	S	8.0	B		8	2	5			RAD01
1995 10 19.12		B	6.1	S	8.0	B		8		3			GRA07
1995 10 19.12		B	6.2	S	8.0	B		8		2			ARN
1995 10 19.12		B	6.2	S	8.0	B		8	1	4			RAD01
1995 10 19.23		S	5.1	AA	8.0	B		15	6	5			HUR
1995 10 19.40	s	S	6.1	AA	3.5	B		7					MOR03
1995 10 19.45		S	5.8	SC	8.0	B		20	7	6	1.4	21	KR002
1995 10 20.23		S	5.4	AA	8.0	B		15	6	5			HUR
1995 10 21.10		B	6.1	S	8.0	B		8	1.3	4			RAD01
1995 10 21.10		M	6.4	S	8.0	B		8	1.14	4			AND03
1995 10 21.11		B	6.4	S	8.0	B		8		4			GRA07
1995 10 21.11		B	6.4	S	8.0	B		8		4			VEL02
1995 10 21.50		M	6.3	SC	5.0	B		10			0.75	356	HAL
1995 10 21.72		M	5.9	S	10.0	B	4	25	7	6	20 m	320	LEH
1995 10 22.19		S	6.0	AA	8.0	B	6	40	4	3		305	BAR
1995 10 22.43		S	6.1	SC	8.0	B		20	8	6			KR002
1995 10 22.72		M	5.9	S	5.0	B		10	9	5	10 m	320	LEH
1995 10 23.11		B	6.9	S	8.0	B		8		6			VEL02
1995 10 23.19					12	L	6	38	4	6/	>0.6	355	REN
1995 10 23.19		B	6.4	A	5.0	B		7		7/			REN
1995 10 23.42		S	6.5	AC	3.5	B		7	6.5				MOR03
1995 10 23.44		B	6.7	SC	5.0	B		10	5	6			MOD
1995 10 24.13		M	6.8	S	5.0	B		10	0.5	2			AND03
1995 10 24.22		S	6.2	SC	8.0	B		20	8	6	0.4	0	KR002
1995 10 24.39		S	5.8	SC	25.4	L	4	47	7	5	0.75	0	DID
1995 10 24.42	s	S	6.6	AC	3.5	B		7	6				MOR03
1995 10 24.72		M	6.0	S	5.0	B		10	8	6	10 m	325	LEH
1995 10 25.74		S	6.1	S	4.0	B		12	4	6			FEI
1995 10 26.42	s	S	6.9	AC	3.5	B		7	8				MOR03
1995 10 26.45	&	B	6.8	SC	5.0	B		10	3.8	5			MOD
1995 10 26.51		S	6.0	SC	5.0	B		10					HAL
1995 10 27.74		S	6.5	S	4.0	B		12	4	5			FEI
1995 10 27.94		S	6.2	SC	25.4	L	4	47	7	6			DID
1995 10 29.39		S	6.2	SC	25.4	L	4	47	6	6			DID
1995 10 29.42		S	7.2	AC	3.5	B		7	5				MOR03
1995 10 30.57		S	7.3	A	20	T	10	63	2.7	5	0.25	345	PRY
1995 10 31.23		M	7.2	S	5.0	B		10		2			AND03
1995 11 02.25		S	7.7	AA	10.0	B		14	4	5			LO001
1995 11 02.55		S	7.5	A	20	T	10	63	3.2	6	5 m	350	PRY
1995 11 04.73		S	7.3	AA	8.0	B	6	20	5	2			BAR
1995 11 05.04		S	8.3	SC	33.3	L	4	58	3	6			KR002
1995 11 05.20		S	7.6	AA	10.0	B		14	3	5			LO001
1995 11 05.42		S	6.7	SC	25.4	L	4	47	5	4			DID
1995 11 06.22		S	8.2	AA	25.2	L	4	53	2.5	5			LO001
1995 11 08.06		S	8.0	AC	20	L	6	49					HAL
1995 11 08.98		S	8.0	AC	15	R	5	42	4.5				MOR03
1995 11 10.94		S	7.4	SC	25.4	L	4	47	5	3			DID
1995 11 11.68		M	8.9	S	5.0	B		10		2			AND03
1995 11 12.76		B	8.8	A	12	L	6	38	5	5			REN
1995 11 13.06	!	S	8.0	NP	5.0	B		10					HAL
1995 11 17.76		B	10.3	AA	40	L	4	57	1.5	4	0.08	0	REN
1995 11 19.06	!	S	8.5	NP	5.0	B		10					HAL
1995 11 20.70	!	E	9.4	NP	25	L	4	40	5	2			NEV
1995 12 22.55		k	15.0	EB	154.9	L	3						HER02
1996 01 21.52		k	17.2	EB	228.6	L	2						HER02
1996 01 21.53		k	17.2	EB	228.6	L	2						HER02
1996 04 18.49	*	c	23.2	FA	91.4	L	5		0.53		232.2s	0	SC001
1996 04 20.46	*	C	20.9	FA	91.4	L	5		0.72		213.6s	0	SC001

Comet 123P/West-Hartley

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 10 22.74		C	18.2	GA	60.0	Y	6		0.25				NAK01
1995 10 27.76		C	18.0	GA	60.0	Y	6		0.3			280	NAK01
1995 11 21.72		C	17.2	GA	60.0	Y	6		0.25			260	NAK01
1995 12 17.68		C	16.1	GA	60.0	Y	6		0.4			250	NAK01
1995 12 21.79		C	15.8	GA	60.0	Y	6		0.55		1.4m	250	NAK01
1996 01 20.73		C	15.3	GA	60.0	Y	6		0.55		0.8m	217	NAK01
1996 02 10.74		C	14.5	HS	41.0	L	6		1.0				KOB01
1996 02 15.56		C	15.2	GA	60.0	Y	6		0.6			130	NAK01
1996 03 10.15		S[	13.7	WA	41	L	4	183	1				HAL
1996 03 22.50		C	14.8	GA	60.0	Y	6		0.8		0.8m	110	NAK01
1996 04 07.48		C	14.9	GA	60.0	Y	6		0.65		1.2m	127	NAK01
1996 04 22.46		C	14.9	GA	60.0	Y	6		0.75		1.6m	114	NAK01
1996 05 15.50		C	14.7	GA	60.0	Y	6		0.8			120	NAK01
1996 05 18.87		S	14.7	HS	44.5	L	5	230	0.3	2			SAR02
1996 05 18.87		S	15.1	HS	44.5	L	5	230	0.2	3			SZE02
1996 06 06.50	a	C	14.8:	GA	60.0	Y	6		0.8				NAK01

Comet 124P/Mrkos

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 01 16.11		k	21.2	EB	154.9	L	3						HER02

Comet 125P/Spacewatch

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 05 19.00		S	15.5	HS	44.5	L	5	230	0.2	1			SAR02
1996 05 19.00		S	15.6	HS	44.5	L	5	230	0.1				SZE02
1996 06 18.16		c	19.4	FA	91.4	L	5		0.27		125.4s	129	SC001
1996 06 18.17		C	16.1	FA	91.4	L	5						SC001
1996 07 20.92		S	14.6	NP	44.5	L	5	167	0.2	0/			MAR02

Comet P/1994 N2 (P/McNaught-Hartley)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 12 22.31		k	20.6	EB	154.9	L	3						HER02
1995 12 22.31		k	20.8	EB	154.9	L	3		0.13	8	0.2m	223	HER02
1995 12 22.32		k	20.8	EB	154.9	L	3						HER02
1996 02 16.28		k	21.4	EB	154.9	L	3						HER02

Comet P/1994 P1 (Machholz 2) [component A]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1994 09 04.15		B	7.6	A	5.0	B		7	6	5			REN
1994 09 06.13		B	7.5	A	5.0	B		7	8	6			REN
1994 09 10.78		B	7.9	S	20.3	T	10	70	2.4	3			NAG04
1994 09 13.80		B	8.5	S	25	H	3	85	2.8	3			NAG04
1994 10 04.17		[10	:		12	L	6	40					REN
1994 10 06.15		B	11.2	VF	40	L	4	72	2.33	2			REN
1994 10 09.16		B	11.2	VF	40	L	4	72	1.75	2			REN

Comet P/1994 P1 (Machholz 2) [component D]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1994 10 06.16		B	12.3	VF	40	L	4	72	1.33	2			REN
1994 10 09.16		B	12.3	VF	40	L	4	72	1.25	2			REN

Comet P/1996 A1 (Jedicke)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1996 01 21.34		k	16.2	EB	228.6	L	2						HER02
1996 01 21.34		k	16.2	EB	228.6	L	2						HER02
1996 03 22.54		C	16.3	GA	60.0	Y	6		0.6				NAK01
1996 04 07.51		C	16.8	GA	60.0	Y	6		0.35				NAK01
1996 04 22.53		C	16.9	GA	60.0	Y	6		0.4				NAK01
1996 05 15.51		C	17.1	GA	60.0	Y	6		0.35				NAK01