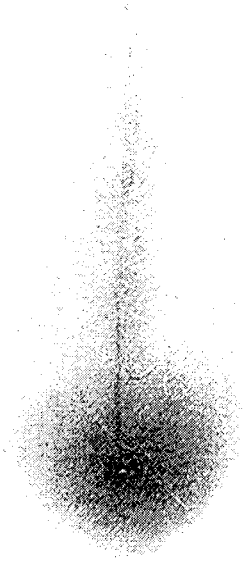
INTERNATIONAL COMET QUARTERLY

Whole Number 95 JULY 1995 Vol. 17, No. 3



Drawing I in the series of five figures drawn by John E. Bortle as part of a series of five drawings that were introduced by Bortle and C. S. Morris during their observing-techniques talk at the IWCA in Selvino, Italy, last year. The drawings were shown to the meeting participants as part of an experiment regarding a comet's degree of condensation. The other four drawings and a description of the experiment by J. E. Shanklin may be found on pages 85-87 of this issue.

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

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— 1996 COMET HANDBOOK —

The 1996 edition of the annual *ICQ Comet Handbook* is now available as a special (June 1995) issue for $8.00 to *ICQ* subscribers, or for $15.00 to non-subscribers. For those subscribers who ordered it in advance, the *1996 Comet Handbook* is being mailed with this July issue of the *ICQ*. The 1996 edition contains 56 pages and has ephemerides and orbits for 55 long- and short-period comets expected to be brighter than mag 21 during the year 1996; a new feature is the listing of all orbital elements for an epoch during the year of the handbook (in this case, the epoch being 1996 April 27.0 TT).

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— Corrigenda —

• In the April 1995 issue, p. 56, *for* Comet 19P/Chiron *read* Comet 95P/Chiron

• In the October 1994 issue (*ICQ* No. 92), p. 173, under "1994 09 07.08" for observer BAK01, there was a 4′ jet in p.a. 240° and a secondary tail 6′ long in p.a. 250°-290°.

• In the October 1990 issue (*ICQ* No. 76), p. 108, under CORRIGENDA, ignore the third corrigendum (the proper correction was made in the October 1981 issue: *ICQ* **3**, 114).

• In the January 1980 issue (*ICQ* No. 33), p. 6, heading for the first set of observations, *for* COMET HONDA (1968 VI = 1968D) *read* Comet Honda (1968 VI = 1968c) [= C/1968 N1]

Estimation of DC — an Experiment

Jonathan Shanklin

BAA Comet Section

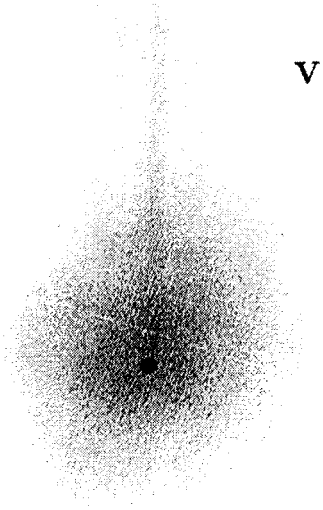
One of the sessions during the IWCA in Selvino was on "Techniques for Visual Comet Observing". This was an open forum conducted by John Bortle and Charles Morris (1994) and was intended to identify some of the problems that led to discordant comet observations. One major area of discordance is the estimation of the degree of condensation (DC).

During the discussion, Bortle drew a series of comet images on sheets of white paper. These were initially viewed close up on a table ("near" viewing). Later, they were pinned up on a board, and participants were asked to view them from their seats ("far" viewing); in this latter experiment, there was a considerable variation in viewing distance — ranging from around one to seven meters. Eighteen observers made both "near" and "far" estimates; nine made only one type of estimate, but did not specify which they had made, and one participant only observed the drawings at close range.

[Editor's note: The actual drawings are reproduced here: Drawing I on the cover (page 83), and Drawings II-V below. Note that these are photocopies of the original drawings, which therefore lose some of the detail inherent in the original pencil drawings, but they nonetheless serve to give the reader a (hopefully) respectable idea of what was involved for the observers of this experiment.] *(text continued on page 86)*

III

V



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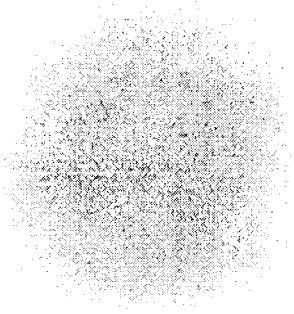
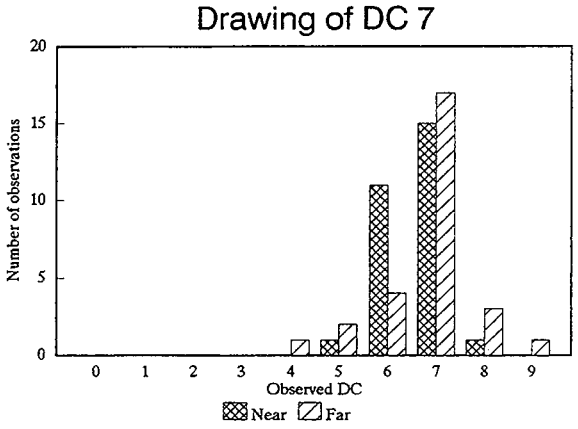


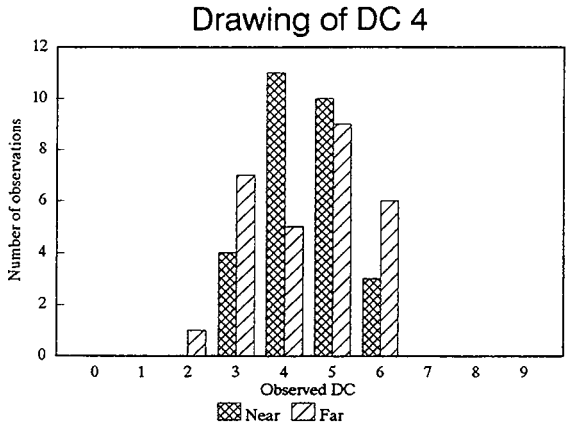
IV

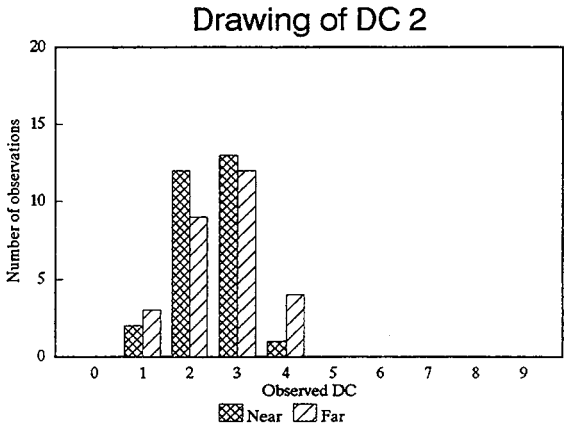
For the analysis, the nine observations were counted in both groups. Where observers estimated the DC to half units, observations were rounded to the nearest odd whole digit (the standard meteorological practice). The median, mean, and standard deviation for each set of observations is given in the table below.

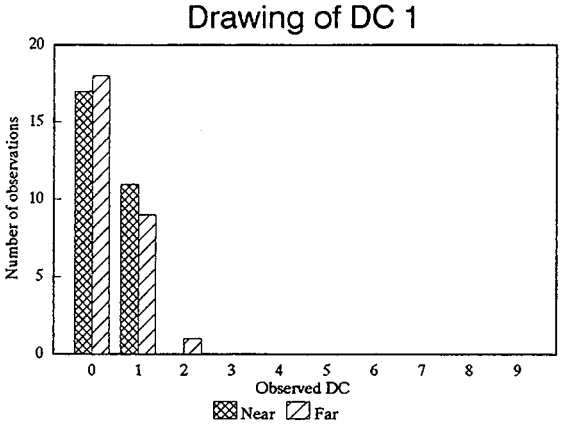
Drawing	Intended DC	"Near" Median	"Near" Mean	"Near" Sigma	"Far" Median	"Far" Mean	"Far" Sigma
I	(6-)7	7	6.6	0.6	7	6.8	1.0
II	(3-)4	4	4.4	0.9	5	4.4	1.2
III	2	3	2.5	0.7	3	2.6	0.9
IV	(0-)1	0	0.4	0.5	0	0.4	0.6
V	2	7	6.6	2.3	5	5.5	2.3

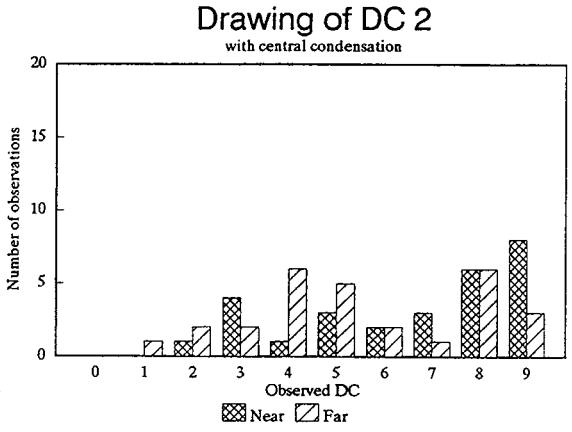
The results are shown graphically in the histograms below. The total for the far group has been normalized to 28 observations by adding an observation to the mean DC bin of each group.











(cont. from page 86)

There is clearly considerable disagreement as to how the DC for the last figure (which had a sharp central condensation) should be recorded. There were two views on what was meant by DC = 9: one held that the coma had to be essentially starlike or disklike (*cf.* Edberg 1983: coma appears stellar); the other view held that the coma could be diffuse with a starlike central condensation (*cf.* Sidgwick 1971: coma sharply condensed at center). During discussion, one suggestion that was made was that, when the coma has a central condensation or false nucleus (which presents a step in the brightness distribution), the DC should be estimated as if the condensation were not present. A comet that is completely diffuse with no apparent change in intensity across the coma has a DC of 0. A comet that appears as a nearly-starlike point or disk has a DC of 9. By contrast, a comet that brightens a little towards the center, but which also has a starlike false nucleus, might only have a DC of 3.

In general, there is a slightly greater spread of DC for observations in the group of images viewed from a distance, which may reflect the varying observer distances. The "far" observations of image number II have a bimodal distribution, but there is no obvious reason for this. The only significant difference between "near" and "far" views is again for drawing V, effectively showing that lower magnification reduces the estimate of the DC. The discussion (and remarks made later) together with analysis of recent comet observations (Shanklin 1995) shows that there is considerable variation in the reporting and interpretation of the degree of condensation of a comet. The *ICQ* staff have therefore acted to try and standardize observing procedures; their recommendations are reported in the following paper (Morris and Green 1995).

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Φ Φ Φ

Estimation of the Degree of Condensation: Recommended ICQ Methodology

Charles S. Morris and Daniel W. E. Green

Abstract. The definition of the degree of condensation† (DC) has always been somewhat vague. As a result, different groups and observers have formulated their own differing interpretations of what they think DC means. Some of these differences became apparent at the recent International Workshop on Cometary Astronomy (IWCA) held in Selvino, Italy. It is important that a common definition be used by visual observers. To this end, the ICQ staff has developed a standard definition of DC that observers will be expected to use. In addition, a letter-designation scheme is introduced to the tabulated ICQ format to give more flexibility in reporting the morphology of the inner coma.

Introduction

The concept called "degree of condensation" (DC) was evidently introduced by observers of the British Astronomical Association about a half-century ago; Sidgwick (1955) was extremely vague when he said that cometary observations sent to the BAA Comet Section should include "degree of condensation of coma (0 = no condensation; 9 = sharply condensed at centre)". David Meisel, founder of the Comets Section of the Association of Lunar and Planetary Observers (ALPO), originally adopted Sidgwick's wording (Meisel 1957). However, by the early 1960s he had slightly modified the wording to "0 = no apparent condensation; 10 = stellar condensation, no coma" [Meisel 1961; it is believed that the upper limit of 10, rather than 9, is a typographical error. There is no evidence that "DC = 10" was ever used by the ALPO. In fact, the later ALPO report forms (Milon 1968) simply state "0 = diffuse, 9 = stellar".].

Perhaps the first detailed discussion of DC in print was that by Morris (1981) in his *ICQ* tutorial for comet observers, in which he noted "that a condensed comet does not necessarily have an observable central condensation" and that "there will be a discontinuity in the comet's surface brightness when a central condensation is present, . . . [making] a DC estimate (and a magnitude estimate) more difficult."

† For this paper and our DC methodology, the terms "nucleus", "stellar condensation", "nuclear condensation", "central condensation", "false nucleus", and similar terms all indicate the presence of a sharp point of light (like a star) or (usually) small disk, typically near the center of a comet's coma. This is not the true nucleus of the comet, but represents a region containing material around the nucleus (*cf.*, *e.g.*, Sekanina 1976).

Meisel (and latter Morris) were taking the term DC literally as being how condensed the coma is: in other words, the DC should be such that its scale goes gradually from a coma with no condensation to a condensation with no coma, whereas the Sidgwick definition can be (and has been) interpreted as meaning that, when a stellar nucleus is present in the coma, regardless of how dominant it may be, it requires a DC value of 9. Thus, as an example, a totally-diffuse 3′ coma with an embedded faint stellar condensation might be estimated as "DC = 1" by one observer and "DC = 9" by another.

The *ICQ* editors were unaware of this alternate interpretation until the IWCA meeting in Selvino during 1994 February 18-19. It was during that meeting that an experiment was conducted on the estimation of DC by John Bortle and Charles Morris (*cf.* Shanklin 1995). It became obvious, as a result of that experiment, that much of the scatter seen in DC data was the result of the ambiguous definition of DC — thus, the need to clarify the definition of DC.

The Problem of DC Estimation

Of all the parameters measured by visual observers, the degree of condensation is the only one that does not have an independent reference or comparison scale. Magnitude estimates are made using comparison stars for reference. Coma diameters are derived by timing or direct measurement relative to star pairs. In contrast, DC has had only a vaguely defined scale from 0 to 9, with nothing to allow a direct comparison. Beyond the convention that 0 = totally diffuse and 9 = stellar (or stellar at center), it has been up to the observer (or, in some cases, an observer's group) to interpret the details of the DC scale. Unfortunately, different groups and observers have arrived at different interpretations for the DC scale. Some of these differences in DC are subtle, but (as noted above) they can be very dramatic.

The usefulness of the DC estimates has been in question since 1P/Halley's apparition. Following the *ICQ*'s lead, the International Halley Watch (IHW) included DC in its observing manual (Edberg 1983), on its report form, and in the IHW archive. Unfortunately, the 1P/Halley DC results were less than uniform; these poor results occurred despite (what was thought to be) a clear description, with drawings of different DC levels, included in the *IHW Observers' Manual*. 1P/Halley is far from being the only bad case. For some comets, when DC estimates from many observers are intercompared, such estimates span 0-9 through most or all of the comet's apparition, with no clear trend or average visible. Unlike the scatter in visual magnitude estimates, which can be significantly reduced by applying appropriate selection criteria (*e.g.*, observer experience), the DC scatter is not dramatically improved by applying these selection techniques.

Why should we, as visual observers, care? On a couple of occasions the first author has seen professional astronomers use the DC results as evidence that any observation by a visual observer shouldn't be trusted, period. After all, if an observer can't determine whether a comet is stellar (DC = 9) in appearance or diffuse (DC = 0), how can you trust more precise observations? It should be noted that many professional astronomers appreciate the contributions that visual observers make in certain areas of astronomy, including visual comet observation. However, given that the present DC results are, for the most part, rather useless when comparing data obtained by different observers, one must ask two important questions. Is there a good reason to estimate DC? If so, can we estimate it accurately enough to be useful? We believe the answer to the first question is "yes." The answer to the second question is currently "no", but perhaps a clearer definition of DC will provide the means for improving the usefulness of this parameter.

Why Estimate DC?

The answer to this question is important. If there is not a good reason for estimating DC, it should be dropped from the observing program and the *ICQ* archive. We believe that there is a very good reason for estimating DC, particularly when taken in context with the other parameters in the *ICQ* archive. Simply put: the purpose of the *ICQ* archive is to give the comet researcher a total picture of the morphology and brightness of a given comet at the time of an observation. The total magnitude (m_1) specifies the integrated brightness of the coma, the coma diameter indicates the area (surface) over which that brightness is distributed, and the DC provides a measure of the average radial distribution of that surface brightness. Without DC, the picture would be incomplete.

As noted by Morris (1980), the Sidgwick method for estimating a comet's total visual magnitude begins to fail as a comet's coma becomes more strongly condensed (higher degree of condensation). Likewise, the Bobrovnikoff method begins to fail as a comet becomes more diffuse (lower DC). The true DC of a comet, then, has an important bearing on the proper method to be employed for determining the total visual magnitude of the coma. DC ideally tells the observer, and later the researcher, how that total magnitude of the comet's coma is distributed across the coma. Furthermore, DC is physically useful as an indicator of dust production; a sharply-condensed coma is always associated with high dust production (though gas production does not seem to be so obviously correlated). Rapid short-term flares in cometary brightness are usually accompanied by a visible, notable stellar condensation.

Recommended Estimation Methodology

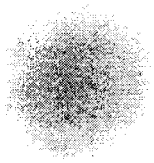
The recommended *ICQ* procedures for estimating DC are all designed to answer the following question: What is the DC value that best describes the **average** surface brightness profile across the coma **including** any stellar and non-stellar condensation, a disk, jets, etc. The profile we are interested in transects the brightest point in the coma, perpendicular to the primary tail.

A. Ideal Case of a Smoothly Varying Surface Brightness Profile (DC = 0-9)

In the method adopted by the *ICQ* staff, there is a uniform increase in DC, in which 0 (zero) represents a totally diffuse coma with no detectable brightening from the coma's outer regions to its center, 9 represents what is seen as an essentially-stellar coma (where nearly all of the brightness is contained at a central point or tiny disk), and 4 to 5

DEGREE OF CONDENSATION

1 =



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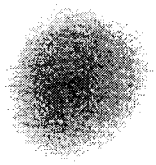

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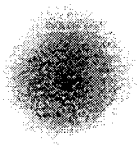

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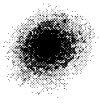

Figure 1. Drawings Showing Various Degrees of Condensation Supplied by John Bortle, W. R. Brooks Observatory

(text cont. from page 88)
represents something in the middle of these two extremes (see Figure 1). In the case of DC = 1 to 8, there is still an imbalance in brightness across the coma. Accordingly, after consulting with the *ICQ* staff in preparation for his *IHW Observers' Manual*, Edberg (1983) wrote: "DC provides a description of the coma's intensity profile (*i.e.*, the change in brightness with distance along a line through the coma centered on the central condensation). It ranges from 0 (diffuse image, no condensation, flat, smooth profile) to 9 (star-like image with stellar [point-like] intensity profile). Occasionally, [when] comets [with perihelion distances $\ll$ 1 AU are close to perihelion, they] develop a coma with a sharp edge like a planetary disk. Experienced observers will generally rate this DC = 9 since the coma is not diffuse at all. It should also be noted that a condensed comet need not have a central condensation."

Figure 1 shows an illustration of different DC levels drawn by verteran comet observer John E. Bortle. These are the same drawings used to depict DC in the IHW Handbook (Edberg 1983). The table below provides an additional description:

DC	Description
0	Totally diffuse without any brightening (toward the center of the coma).
1	Very slight brightening.
3	Obvious brightening, but coma still very diffuse.
5	Distinct brightening; would be described as moderately condensed.
7	Sharp brightening with some diffuse coma; would be described as strongly condensed.
9	Star-like, or small disk; little, if any, diffuse coma.

Even with this table, it is apparent that the difference between DC = 5 and 6 is small and difficult to describe. It can be (and has been) argued that the 10-point scale is too detailed. However, this scale has been in use for many decades, and many experienced observers believe that DC can be measured accurately on a 10-point scale. The experiment conducted at the Workshop (Shanklin 1995, this issue) suggests that observers do agree within one (or two) DC units for an ideal comet. At any rate, the *ICQ* has made use of the slash (/) for observers who have difficulty determining the DC to one unit; thus "3/" can be taken as either "3.5" (for observers confident of their measuring acuity) or "3 to 4" (for observers less certain).

B. Stellar or Nearly-Stellar Condensation Embedded in a Diffuse Coma (DC = 1-8)

The occurence of a stellar or nearly-stellar condensation embedded in a diffuse coma is only possible (but is not necessary) for DC values 1-8. For DC = 0, there cannot be any brightening toward the center of the coma. "DC = 9" implies that no diffuse coma exists. Besides these extreme cases, how does an observer estimate DC when there is a stellar or nearly-stellar condensation in a diffuse coma? This is the situation that has caused great confusion and is really the reason for this article.

The confusion not only arises because of the different interpretations of the DC scale that have been used in the past, but also because it is a difficult challenge for observers. After all, the observer is being asked to estimate an average DC of a composite object: one that consists of a background of diffuse coma and a stellar or nearly-stellar object — seemingly an independent object — embedded in the diffuse coma. (We include the nearly-stellar condensation or nucleus in this definition to be all-inclusive. An otherwise-stellar condensation may not appear totally stellar in poor seeing, for instance. Also, a nearly-stellar condensation will pose the same problems as a stellar condensation for observers. More complex disks, jets, and other features that may confuse a DC estimate are discussed in the next two sections.)

Unfortunately, there is not a single, simple procedure that we can recommend to observers for estimating DC when complexities like a stellar (or near-stellar) nucleus exist in the coma. Hence, we expect that for such cases the scatter in the DC estimates, particularly data from inexperienced observers, will be larger than for the ideal cases. Nonetheless, we do expect a significant improvement with the more explicit definition given here, over what was obtained in the past.

Regardless of what approach is taken for determining the comet's DC, the first step is to verify that the stellar nucleus or condensation is actually a feature in the coma. The comet's motion should clarify this within a few minutes. Field stars will look like part of the comet in some situations.

Ideally, the DC estimate is obtained by determining the relative importance of the brightness in the diffuse coma as compared to the (nearly) stellar condensation (or highly-condensed nuclear region): the more light in the condensation, the higher the DC value. When using this method, one must take into account how the surface brightness varies in the background coma. If the background coma is already strongly condensed, the DC value must reflect that fact.

An alternate approach would be to use the peak brightness of the condensation, the size of the coma, and the surface brightness distribution of the diffuse coma to visualize what an ideal coma, without the discontinuity in surface brightness, would look like — and estimate the standard DC on the basis of that visualization.

Examples

The following are illustrative examples of how DC can change as the brightness of the stellar condensation changes. Please do not use the absolute magnitude differences as an absolute measure of DC; that is not the intent of the examples.

1a) A comet at m_1 = 10.0 has a large (3′) coma with DC = 1 and a 13th-magnitude stellar nucleus. The DC will probably still be 1 or perhaps 2.

1b) The same comet has an 11.0-magnitude condensation. The DC will increase significantly, perhaps to DC = 4 or 5.

1c) The same comet has a 10.5-magnitude nucleus. With most of the light in the condensation, the DC estimate should be toward the high end of the DC scale.

2) A comet at magnitude 3.5 has a small (1′) coma. The DC of the background coma is already 7 (strongly condensed). Even a bright condensation will not change the DC by more than 1 unit.

To assist observers in providing a better description of their DC estimate, the *ICQ* now offers additional upper- and lower-case letters to indicate the relative importance of the stellar or nearly-stellar condensation. This is described in detail in the section titled "*ICQ* Tabulation of DC", below. Observers are urged to use these letters, rather than submitting comments which state that a condensation was present. The letter designation is partly designed to eliminate the extra verbalized description information submitted to the *ICQ*.

C. Disk Embedded in a Diffuse Coma (DC = 1-8)

The estimation technique here is basically the same as for a stellar or nearly-stellar condensation. For a disk embedded in a significant coma, the observer must determine how important the disk is in the distribution of light within the coma: the more prominent the disk relative to the background coma, the higher the DC estimate should be. The new letter designation system allows the observer to specify that a disk exists and its relative importance (see "*ICQ* Tabulation of DC", below). Additional information concerning the size of the disk, which can range from a few seconds of arc to perhaps 1′, can be given in comments that accompany the observation.

D. Coma with a Brightness Plateau (DC = 1-8)

A plateau in surface brightness is different than a disk, in that a disk has a discontiunity in brightness (with the disk being brighter than the surrounding coma) and a plateau does not. A plateau is simply an area within the coma with an approximately constant surface brightness. The observer must visualize an ideal coma, smoothing out the plateau in order to estimate the DC. Whereas a central condensation embedded in the coma would tend to increase the DC estimate, a plateau in the center of the coma would tend to decrease the DC estimate.

E. Complex Features in a Diffuse Coma (DC = 1-8)

If there is some combination of features (jets, disks, one or more condensations) in the coma that may make the determination of DC useless, it is recommended that the observer leave the DC blank and specify the confusing detail in comments that accompany the observations.

The Influence of Instrumentation

Like many aspects of visual comet observing, what an observer sees will vary with the instrumentation being used. Generally, a comet's DC at any given time will increase simply by increasing the magnification of the observational instrument; the observed DC is very instrumentally-dependent, and this simple trend can be easily seen in any issue of the *ICQ* by looking at tabulated data by individual observers making more than one observation on a given night with different instrumentation. When observing a comet at any given time, more of the comet's coma is usually seen with smaller, lower-magnification instruments, and this aperture effect tends to be more and more noticeable for comets with larger comae. At the same time, less of the centrally condensed part of the coma is obvious in smaller instruments, so that with the correspondingly larger observed coma diameter, one obtains a lower DC value.

Likewise, with the larger instrument, one can usually see central condensations more clearly, and at the same time the larger aperture (and higher magnification) reduces the relative surface brightness of the outer coma, causing the observer to "look through" the outer coma, seeing a smaller coma diameter with a larger condensed region, and this usually leads to a higher estimate of the degree of coma condensation.

There is an exception to the general trend stated above. If a comet becomes bright and its coma has shrunk (near perihelion with $r < 1$ AU), the DC in binoculars will often be close to 9, with the comet appearing like a (fuzzy) star. Using a telescope with greater magnification will often show a coma with a somewhat smaller DC than the low-power binoculars give.

An observer should be aware that different instruments may give different DC values. It is important that the observer give the DC for the same instrument and magnification used to make the magnitude estimate. Other DC estimates with different instruments and magnifications are of interest, but they are not critical unless a magnitude estimate is also made.

DC for CCD Observations

For CCD observers, who usually are observing comets fainter than mag 12 or so, the degree of condensation is generally not important for the determination of magnitudes, because individual photons are being counted over a specific area of the visible coma. Nonetheless, for an extended coma, it may be useful to have an idea of the distribution of brightness for these fainter comets, and perhaps some active CCD observers familiar with comet photometry may be able to derive a useful formula for use in establishing a defined DC. Shanklin (1994) has suggested a couple of possibilities along these lines, one being the use of the ratio between the peak brightness and that at the semi-diameter of the coma. However, the *ICQ* has not yet adopted a standard approach to DC estimates using CCDs. Our preliminary investigation has shown that CCD DC estimates can be significantly different from those obtained by visual observers. It is not obvious at this point how these different data sets could be combined. This is an area of on-going study.

***ICQ* Tabulation of DC**

The *ICQ* adopts a DC scheme in which the observer estimates how the total visual magnitude (m_1) is distributed throughout the comet's coma. Thus, a visible central condensation may or may not contribute much to the comet's m_1 and DC values, but this correlation between m_1 and DC is interdependent. In other words, if the central condensa-

tion contributes a good deal to the total visual magnitude of the coma, the DC will necessarily be higher than if it did not contribute much. A good example occurred with comet C/1983 H1 (IRAS-Araki-Alcock), which came very close to the earth in May 1983 and — in a small telescope — exhibited a very notable small, starlike condensation within a degrees-wide coma; this nuclear condensation in itself was most remarkable in appearance to the visual observer, but it contributed very little to the overall brightness of the comet, even when the large, naked-eye comet reached mag 1.5 at maximum. Thus, the true DC of comet C/1983 H1 at that time was usually given by experienced observers as being in the range 1 to 3.

Few comets that are fainter than mag 6 and observed by visual observers will ever have DC near 9, though some recent examples have included comets 96P/Machholz 1 and P/1991 F1 (Mrkos) — both showing a noticeable condensation that contained much or most of the total brightness of the coma, with very little coma apart from the central condensation, when they were fainter than mag 11 or 12.

It is important for observers to make DC and coma-diameter estimates with the same instrumentation characteristics (*i.e.*, identical instrument and magnification) that are used to make the total visual magnitude estimate. The greatest value of both the measured DC and coma diameter are as they relate to m_1, and researchers looking at archival data can often see patterns in differing magnitude estimates that relate to coma diameter and DC (both of which are diagnostic of local observing conditions and of instrumentation).

At the suggestion of observers and coordinators who attended the IWCA in Selvino, we are introducing a letter-coded scheme (for placement between the coma diameter and the DC in the tabulated *ICQ* data), the key of which will be as follows:

d = faint disk within the coma; does not affect DC by more than 1-2 units; has little effect on m_1.
D = bright disk within the coma; significantly affects DC and m_1 values.
s = faint "stellar" or nearly-stellar condensation/nucleus; does not affect DC by more than 1-2 units; has little effect on m_1.
S = bright "stellar" or nearly-stellar condensation/nucleus; significantly affects DC and m_1 values.
w = "stellar" condensation present when DC = 9 (for historical records only)

These single letters may be placed in column 55 of the tabulated data (between the coma diameter and the DC), at the option of the observer. Although optional, the *ICQ* staff encourages observers to use these explanatory letters, when appropriate.

Postscript

The *ICQ* editors realize that estimation of DC, particularly with a stellar nucleus present, is not straightforward or easy. For inexperienced observers, it will require significant practice to master. For experienced observers, it may also require practice to adopt to a new technique (assuming your present technique is different). Although the process of standardizing the estimation of DC may be difficult (and some may not agree with the techniques chosen by the *ICQ* staff), the end result will hopefully be a much improved data base for the comet researcher.

Acknowledgements. We thank John E. Bortle and Jonathan Shanklin for their critical readings of the manuscript prior to publication.

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Tabulation of Comet Observations

More than 3500 observations are tabulated in this issue, representing the largest set of such data ever to be published in a single issue of the *ICQ*; in fact, this issue's observations increase the total size of the tabulated *ICQ* archive of photometric comet data by more than 5 percent! The vast majority of the tabulated observations herein were contributed by Jonathan Shanklin, Director of the Comet Section of the British Astronomical Association (BAA), and they represent observations made from the late 1950s through 1995 by members of the BAA Comet Section as well as a much smaller set of observations spanning 1989-1993 contributed to Shanklin by Guy Hurst from the records of *The Astronomer*.

Following are new additions to the magnitude-methods (MM) key:
- J = Kron-Cousins V filter employed (peak transmission at 550 nm) [initiated by observer ROQ]
- j = Kron-Cousins V filter employed (m_2 estimate)
- u = CCD-derived V nuclear magnitudes (m_2)

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Following are new additions to the notes key:
- l = limiting stellar magnitude for a CCD observation in which the comet was not detected

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Following are new additions to the comparison-star references key:
- JT = Cousins V magnitudes of stars in M67 (M. Joner and B. Taylor 1990, *PASP* **102**, 1004)
- LB = Landolt (1983, *AJ* **88**, 439 and 853) sequences as published by Christian Buil in *Astronomie CCD* (1989, Societe d'Astronomie Populaire), p. 261
- MK = V magnitudes for M67 in *Le Guide Pratique de l'Astronomie CCD* (P. Martinez and A. Klotz 1994; Adagio press), p. 270
- MT = visual magnitudes of stars (range $10.6 < V < 21.0$; incl. B–V colors) in M67 as published by B. E. Schaefer (1989, *Sky Tel.* **77**, 332), after work by Racine and Gilliland

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Descriptive Information (to complement the Tabulated Data):

Note that some of the descriptive information below pertains to tabulated data published in the April issue.

◇ *Comet C/1992 F1 (Tanaka-Machholz; O.S. 1992d)* ⟹ 1992 May 2.05 and 3.07: w/ 21-cm f/7 L (89×), $m_1 = 8.1$ (MM: S), 4′ coma, DC = 3, 0°.05 tail in p.a. 160° [BUL01]. May 7.09: w/ 21-cm f/7 L (89×), $m_1 = 8.3$ (MM: S), 3′ coma, DC = 3, 0°.03 tail in p.a. 160° [BUL01]. May 16.99: w/ 21-cm f/7 L (89×), $m_1 = 8.5$ (MM: S), 3′ coma, DC = 6 [BUL01]. May 24.08: w/ 21-cm f/7 L (89×), $m_1 = 8.7$ (MM: S), 3′ coma, DC = 5 [BUL01].

◇ *Comet C/1994 J2 (Takamizawa; O.S. 1994i)* ⟹ 1994 July 7.05: comet brighter w/ Swan-band filter [DEA].

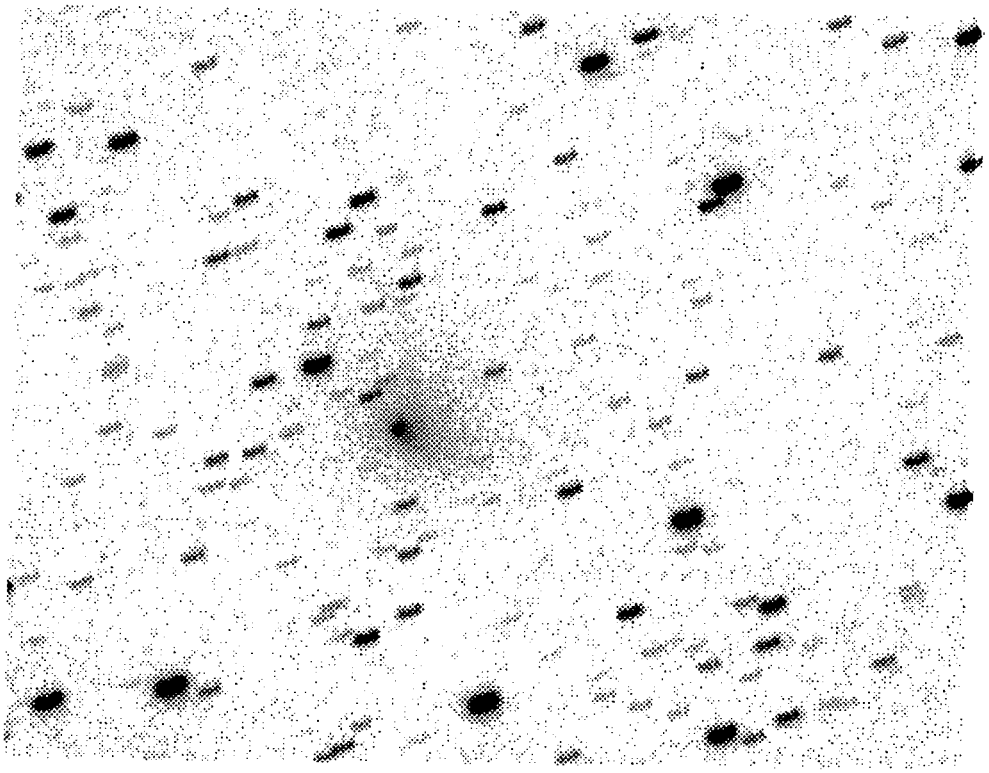
◇ *Comet C/1994 N1 (Nakamura-Nishimura-Machholz; O.S. 1994m)* ⟹ 1994 July 7.89, 9.90, and 12.88: an alternate form of extinction was applied here (compared with the observations published in *ICQ* 92 on the same dates, for which the correct extinction code *should have read* 's' *instead of* 'w') [MIL02]. Aug. 27.85: close to bright star [BOU].

◇ *Comet C/1994 T1 (Machholz; O.S. 1994r)* ⟹ 1994 Oct. 12.37: at 110×, "a tiny, rather ill-defined knot glimpsed at center of coma" [BOR]. Oct. 13.37: "Lumicon Swan-band comet filter very slightly enhances comet's visibility; at 110×, there is a tiny, nearly-stellar knot perhaps 0′.1 in size (mag 13.5-14) at coma's center" [BOR]. Oct. 16.37: at 110×, poorly-defined knot (mag ~ 13.5-14) of bright material at coma's center [BOR]. Nov. 30.85: very strong, pointlike central cond. [LEH]. Dec. 1.09-29.00: "extinction corrections, when applied, never exceeded 0.1 mag" [BOR]. Dec. 1.09: "at 68×, coma noticed to be very suddenly sharply condensed at the center (this region/feature being quite intense); Lumicon Swan-band filter has little if any effect on comet's visibility"; at 170×, a sharp stellar nucleus of mag ~ 13.0 [BOR]. Dec. 1.87: strong, pointlike central cond. [LEH]. Dec. 2.92: strong central cond.; at 280×, coma dia. 2′ [LEH]. Dec. 3.13: at 110×, faint but quite obvious stellar nucleus (mag ~ 12.5-13) is clearly separate from surrounding bright material [BOR]. 1995 Feb. 1.83: fan-shaped tail spans p.a. 12°-64°; observation from Orcieres-Merlette using a Celestron 8 telescope + ALPHA 500 CCD camera (scale 2″/pixel) [GAR02].

◇ *Comet 6P/d'Arrest* ⟹ 1995 May 24.01: nearly stellar appearance with hint of very faint coma; measured on 120-sec unfiltered CCD images [PRA01]. June 16.03: extension of coma toward W (p.a. ~ 270°) [PRA01]. June 19.96: w/ 36-cm f/6.8 T + CCD + V filter, asymmetrical coma of dia. ~ 1′ elongated towards the anti-solar direction [MIK]. June 21-July 1: magnitudes of the comet were constant (within ± 0.4 mag) on all observing nights between June 21 and July 1 [PRA01]. June 21.02: coma and tail sizes measured on unfiltered, 6-min, co-added image; original 2-min images taken by M. Wolf and L. Šarounová, measured by PRA01. June 27.03 and 29.06: "much brighter than on June 19.96 UT; star-like 0′.4 central cond., surrounded with ~ 4′ delicate coma, slightly asymmetric, elongated in p.a. ~ 320°; reduced with DAOPHOT II for personal computers" [MIK]. June 27.95: coma and tail sizes measured on an 8-min co-added image [PRA01]. June 29.04: coma and tail sizes measured on a 6-min co-added clear-filter image; V-measurements calibrated using the Landolt standard fields, extinction correction done; smaller aperture size used due to a presence of nearby brighter stars [PRA01]. July 1.01: coma dia. 2′.0 w/ faint halo of dia. 2′.8; several radial rays extending from nucleus out to a distance of ~ 0′.9 in p.a. 250° to 360° are marginally visible; coma and tail structures measured on a 6-min, co-added, clear-filter image (image reproduced on page 94) [PRA01 and L. Šarounová, Ondřejov Observatory].

◇ *Comet 16P/Brooks 2 (O.S. 1994j)* ⟹ 1994 Sept. 10.08 and Oct. 4.89: weak central cond. [LEH]. Oct. 26.88 and Nov. 1.83: strong central cond. [LEH].

◇ *Comet 19P/Borrelly (O.S. 1994l)* ⟹ 1994 Sept. 10.06: in 20-cm f/17 R (140×), 2′.5 coma, DC = 4; strong central cond. [LEH]. Sept. 11.05: in 20-cm f/17 R (140×), 3′ coma, DC = 4-5; very strong, pointlike central cond. [LEH]. Sept. 23.43: nuclear cond. had dia. ~ 15″ and mag 12.1 [ROQ; supplements tabulated observation in October 1994 *ICQ*]. Sept. 30.43: central cond. appeared shifted N of coma's center; "a somewhat sharper/brighter nuclear region appeared w/in the central cond." [DID]. *(text continued on next page)*



Above: *CCD image of 6P/d'Arrest obtained by Petr Pravec and L. Šarounová with the 65-cm f/3.6 reflector at Ondřejov, Czech Republic. The above picture was constructed from three 2-min images taken through a clear filter around 1995 July 1.01 UT. North is up (p.a. of the upward axis is 354°.5), east to left. Field of view is 12'.7 × 9'.6, pixel size 2''.0. After linear addition of the three images, the resulting image was logarithmically scaled in brightness.*

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Comet 19P/Borrelly (cont. from page 93) ⟹ 1994 Oct. 3.37: "Lumicon Swan-band comet filter does not change comet's visibility; at 110×, a fairly hard stellar nucleus of mag 13 situated at the W end or apex of a vague fan of bright material" [BOR]. Oct. 7.37: at 110×, nucleus very obvious and stellar (mag 13.0; ref: AC, S Ori); fairly narrow, bright fan of material issues from the nucleus toward the E for ~ 45″ [BOR]. Oct. 8.38: at 46×, a faint starlike nuclear cond. of mag ~ 13 apppeared within central cond.; 30″ jet near center [DID]. Oct. 11.37: at 110×, "bright, narrow, straight jet of material issues E from nucleus; nucleus decidedly offset W in coma; at 68×, coma is suddenly very strongly condensed quite near the center, w/ remainder much less condensed" [BOR]. Oct. 12.38: at 110×, "a tiny nucleus (mag 13) visible, from which issues a flow of bright material in a fan spanning p.a. 90°-140° (brightest near p.a. 100°) [BOR]. Nov. 1.92 and Dec. 2.93: strong central cond. [LEH]. Nov. 6.15: 12th-mag starlike false nucleus [DID]. Nov. 11.40: two tails quite evident and fairly narrow; in 31.7-cm L, the brighter anti-tail is 5′ long in p.a. 95°; "normal" tail 8′ to the W; suggestions of a vague fan of bright material beyond the general coma outline (p.a. 225°-315°) [BOR]. Nov. 30.87 and Dec. 1.91-1.94: strong, pointlike central cond. [LEH]. Nov. 30.94: 0°.20 anti-tail in p.a. 125°, rather broad fan; "normal" tail was faint [BOU]. Dec. 4.03: broad and diffuse 0°.2 anti-tail in p.a. 105° was well visible; "normal" tail only suspected at p.a. 270° [BOU]. Dec. 12.28: second tail 0°.03 long in p.a. 102°; both tails half as wide as coma [MOD]. Dec. 26.19: in 40.6-cm L, second straight tail 0°.07 long in p.a. 115° has edges seemingly ||, w/ N edge perhaps sharper (weaker and narrower and shorter than the first tail; significantly narrower than coma's dia.; "W tail straight w/ edges that diverge slowly as it advances, almost as broad as coma's dia., w/ N edge clearly tangent w/ that of coma (N edge of tail rather obviously more sharply bounded than S edge); [overall] an extraordinary appearing object, rather like an edge-on galaxy w/ skewed arms!" [BOR]. Dec. 26.42: fan-shaped toward the SW, more condensed at the NE; starlike nucleus of mag 12.5 seen almost in contact with an 11th-mag star [DID]. Dec. 30.14: in 40.6-cm L, second tail 0°.13 long in p.a. 115°; otherwise, appearance of tails identical w/ description of Dec. 26.19; "in coma, nucleus is very hard and stellar, clearly separate from surrounding coma; occasional suggestions of a narrow jet of bright material issuing from the nucleus out into the E tail at 114×; Lumicon Swan-band comet filter does not affect comet visibility at all" [BOR]. 1995 Jan. 1.78, Feb. 22.86, and 27.82: weak central cond. [LEH]. Jan. 5.05: faint outer coma extended E-W; inner cond. round and diffuse [DID]. Jan. 6.19: in 35.9-cm *f*/7 L (85×), coma elongated ~ 0°.02 toward p.a. 106° [MOD]. Feb. 2.06: composite image from five 3-sec integrations shows fan-shaped tail spanning p.a. 175°-229°, and 2'.4 ray (antitail?) at p.a. 115° [GAR02]. June 29.89: rather diffuse appearance w/ little central cond. and tail > 0°.07 long; measured on a 3-min co-added clear-filter image taken in twilight sky [PRA01 and L. Šarounová, Ondřejov Observatory].

◇ *Comet 29P/Schwassmann-Wachmann 1* ⟹ 1995 Jan. 29.30: at 85×, coma strongly suspected (m_1 = 14.0, 0'.7 coma, DC = 0-1) [MOD].

◇ *Comet 31P/Schwassmann-Wachmann 2* ⟹ 1995 June 29.92: circular coma with rather strong central cond. [PRA01].

◇ *Comet 51P/Harrington* ⟹ 1995 Feb. 1.87: comet does not appear on a 45-sec integration with a stellar limiting mag of V = 17.2 [GAR02].

◇ *Comet 65P/Gunn* ⟹ 1995 June 25.88: 60-sec exp. w/ ST-6 unfiltered CCD at Sormano Observatory [CAV].

◇ *Comet 71P/Clark (O.S. 1994t)* ⟹ 1995 Mar. 30.16-Apr. 4.14: comet always difficult object against Milky Way background [BOU]. Mar. 31.18: searched for comet at dawn, with a loss of 3 mag due to sky brightness; object low in the sky, the atmospheric extinction implying another loss of 0.5 mag; obs. made from Orcieres-Merlette (Hautes Alpes, France, elevation 1835 m) [GAR02]. May 31.35: comet at alt. ~ 15°; comparison stars w/in ~ 0°.5 of comet's alt. (no extinction corr. needed) [MOD].

◇ *Comet 95P/Chiron [(2060) Chiron]* ⟹ 1992 Feb. 6.35-1995 Feb. 3.38: all attempts made using finder charts prepared from digitized versions of the first and second Palomar Sky Surveys and the Quick V Survey (from the Space Telescope Science Institute); these charts have a limiting mag of m_v ~ 19-21 and a coordinate scale along the chart margins that permitted Chiron's predicted position to be plotted to an accuracy of about ± 3″ (these charts allowed Chiron to be quickly identified and, for the numerous negative attempts — not published here — assured that the correct field was being observed); for all positive observations, Chiron was a stellar object within the limits of the seeing [MOD]. 1992 Apr. 29.10: difficult obs. (Chiron at threshold of visibility) [MOD]. 1995 Apr. 25.89: stellar appearance [HOR02]. May 2.91: stellar appearance [POP].

◇ *Comet 103P/Hartley 2* ⟹ 1991 Oct. 5.09: starlike nucleus (m_2 ~ 11.3) [BAR06]. Oct. 6.06: m_2 ~ 11.3 [BAR06]. Oct. 7.06: m_2 ~ 11.5 [BAR06]. Oct. 8.06: m_2 ~ 11.6 [BAR06]. Oct. 8.06: m_2 ~ 11.7 [BAR06]. Oct. 9.06: m_2 ~ 11.8 [BAR06].

◇ *Comet 109P/Swift-Tuttle* ⟹ 1992 Nov. 14.71: w/ 20.3-cm f/10 T (200×), m_2 = 11.3 (RF: AC) [DAH]. Nov. 21.75: w/ 20.3-cm f/10 T (200×), m_2 = 9.5 (RF: AC) [DAH]. Nov. 29.74: w/ 20.3-cm f/10 T (200×), m_2 = 8.9 (RF: AC) [DAH]. 1995 Mar. 29.41-29.48: magnitude R ~ 22, appearance stellar (poor seeing, ~ 3″; astrometry on *MPC* 25099) [MCN].

◇ *Comet P/1994 P1 (Machholz 2; O.S. 1994o* ⟹ 1994 Aug. 31.36: starlike central cond. of mag 10.5 (component A) [VIE]. Sept. 10.10: very strong, pointlike central cond. [LEH]. Oct. 3.39: for component A, at 68×, the inner 35% of coma is quite dense; an extinction correction of +0.1 mag is necessary (and applied); Lumicon Swan-band comet filter slightly enhances comet's visibility; coma of component D shows little sign of condensation [BOR]. Oct. 7.39: Lumicon Swan-band comet filter noticeably enhances component A's visibility [BOR]. Oct. 11.39: component D glimpsed as a small patch of mist, 7′ N of component A; component A was totally uncondensed, and a Lumicon Swan-band comet filter decidedly enhanced its visibility [BOR]. Oct. 12.40: Lumicon Swan-band comet filter now strongly enhances comet's visibility [BOR]. Oct. 16.40: comet not a great deal above the sky-background threshold; comet's visibility strongly enhanced using the Lumicon Swan-band comet filter [BOR]. 1995 Mar. 29.54 and 30.39: magnitude for component A was R ~ 22.5, appearance stellar; no sign of components B, D, or E (poor seeing, ~ 3″; astrometry on *MPC* 25097) [MCN].

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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.; 11 = Dutch Comet Section; 16 = Japanese observers (c/o Akimasa Nakamura, Kima, Japan); 18 = Polish observers (c/o Arkadiusz Olech, Pruszcz, Poland); 23 = Czech group (c/o P. Pravec); 32 = Hungarian group (c/o K. Sarneczky); etc.]. Those with asterisks (*) preceding the 5-character code are new additions to the Observer Key:*

First are listed (alphabetically) those observers whose data were contributed by J. D. Shanklin (see bottom p. 92):

ABB	07	J. Abbott, England
ALC	07	G. E. D. Alcock, England
ALL	07	W. H. Allen, New Zealand
*ALL01	07	David Allen, Cambridge, England
AND	07	C. R. Anderton, England
AND01	07	Karl-Gustav Andersson, Sweden
*AND07	07	P. M. Andrew, Dover, England
*BAI	07	J. M. Bain, Bulawayo
BAL	07	R. M. Bales, OR, U.S.A.
*BAL01	07	A. J. Baldwin, New Zealand
BEA	07	Sally Beaumont, England
BEE01	07	D. Beesley, Northern Ireland
*BEL05	07	C. D. Beling, England
BEN	07	Jack C. Bennett, South Africa
BEN03	07	Hans Bengtsson, Sweden
BEY	07	Max Beyer, Germany
*BIL	07	R. Billington, England
BIR	07	P. Birtwhistle, England
BJO	07	Bjorn Davidsson, Sweden
BLA	07	R. A. Blackett, England
BOA	07	Andrea Boattini, Italy
BOR	07	John E. Bortle, NY, U.S.A.
*BOW01	07	Richard D. Bowen, England
BRA01	07	William A. Bradfield, Australia
*BRA03	07	Nigel Bradbury, England
BRE	07	T. Brelstaff, England
BRI	07	A. T. Guranather Brito, Ceylon
BRI02	07	D. M. Brierley, Preston, U.K.

BRI03 07 Steve Brincat, Malta
BRO02 07 P. L. Brown, England
BRO04 07 Eric Broens, Belgium
*BRO05 07 Roger Browning, England
BRY 07 J. T. Bryan, NE, U.S.A.
BUH 07 M. Buhagiar, W. Australia
BUL01 07 Robert Bullen, England
BUR 07 S. F. Burch, England
BUR02 07 H. T. Burgers, Cape, S. Africa
*CAL01 07 M. Call, Surrey, England
CAN 07 Michael P. Candy, Australia
CAR03 07 Brian Alfred Carter, England
*CAU 07 William B. Caunter, England
*CHA01 07 A. Chapman, England
CLA 07 Maurice L. Clark, Australia
CLA01 07 P. R. Clayton, England
*COA 07 John Coates, Lancashire, England
COL01 07 E. H. Collinson, England
CSU 07 Matyas Csukas, Salonta, Romania
CUR02 07 A. C. Curtis, Hampshire, U.K.
*CUR03 07 Hamilton J. Currie, Scotland
DAH 07 Haakon Dahle, Norway
DAN01 07 Jorgen Danielsson, Sweden
*DAV02 07 H. A. Davies, England
*DEA01 07 R. D. Dearden, England
DEJ 07 F. A. de Jong, Australia
DIA 07 Francisco Garcia Diaz, Spain
DIE02 07 Alfons Diepvens, Belgium
*DIM01 07 S. Dimmit, W. Australia
DIN 07 C. Dinwoodie, Scotland
*DIN01 07 E. L. Dinham, Devon, England
DOH 07 P. B. Doherty, England
DRI 07 A. Driscole, England
EDE 07 H. J. Edelman, S. Australia
ENT 07 L. Entwisle, England
EVA 07 Steve Evans, Towcester, England
*FER02 07 L. Ferguson, Armagh, Ireland
*FEW 07 Roger W. Few, Cambridge, England
*FIS01 07 John S. G. Fish, Wales
*FOS 07 A. Foster, England
*FOU 07 Martin Foulkes, England
FRA01 07 James Fraser, Scotland
*FRE 07 Victor J. Freeman, England
FRY 07 D. Frydman, England
GAI 07 Michael J. Gainsford, England
GAV 07 M. V. Gavin, United Kingdom
GIL 07 A. C. Gilmore, Carter Obs., N.Z.
*GIN 07 Anthony Ginman, Kent, England
GLY 07 R. T. Glynn, England
GRI 07 D. P. Griffin, England
GRO 07 Martin Grossmann, West Germany
*HAM01 07 M. D. Hamilton, Balham, England
HAR05 07 Clive H. Hare, England
HAR06 07 Bertrand John Harris, Australia
*HAR07 07 Alan Harvey, Lancashire, England
HAS02 07 Werner Hasubick, West Germany
HAT 07 M. A. Hather, England
HAV 07 Roberto Haver, Italy
*HAY04 07 Tim Haymes, Surrey, England
*HEA01 07 S. R. Heathcote, England
HEG 07 Douglas C. Heggie, U.K.
HEN 07 Michael J. Hendrie, England
HEN01 07 C. Henshaw, England
*HIG 07 Michael G. Highley, New Zealand
*HIG01 07 T. Higginson, Essex, England
HIN 07 Keith B. Hindley, Isle Man, U.K.
HOD 07 Barry A. J. Hodges, Australia
HOW 07 I. D. Howarth, England
HUF 07 D. F. Hufton, England
*HUG01 07 P. Hughes, England
HUR 07 Guy M. Hurst, England
HUT 07 David Robert Hutchinson, England
ISL 07 J. E. Isles, London, U.K.
JAH 07 Jost Jahn, West Germany
JON 07 Albert F. Jones, New Zealand
JON01 07 Merv V. Jones, Australia
JON03 07 I. J. Jones, England
*JUD01 07 Eugene Judge, County Mayo, Eire
*KAI02 07 K. Kaila, Helsinki, Finland
KEI 07 Graham Keitch, England
*KEI02 07 R. M. Keith-Hill, Devon, England
*KEM 07 Arthur Kemp, Chester, England
*KEN01 07 Frederick Kenny, England
KID 07 Mark Kidger, Canary Islands
KOR 07 Stefan Korth, West Germany
KOS 07 Attila Kosa-Kiss, Romania
KUK01 07 Ilmo Kukkonen, Finland
*LAR03 07 Frank Large, Liverpool, England
LEH 07 Martin Lehky, Czechoslovakia
LEM 07 A. G. le Moeur, England
LEW 07 J. Lewis, United Kingdom
*LLO 07 David J. R. Lloyd Evans, U.K.
*LYO 07 Pete Lyon, Birmingham, England
*LYT 07 S. Lyttle, Ireland
MAD 07 P. J. Madej, England
MAL04 07 Keith Stanley Malcolm, Ireland
MAN 07 B. Manning, England
MAR 07 G. D. Marsh, England
MAR03 07 Brian G. Marsden, England
*MAR16 07 P. Marsh, England
MAT01 07 Victor Lewin Matchett, Australia
*MCC05 07 S. McCann, Southampton, England
MCI01 07 R. A. McIntosh, New Zealand
MCM 07 Simon C. McMillan, Australia
*MEN02 07 Kurt Menzel, W. Australia
*MID02 07 Peter Middleton, England
MIK 07 Herman Mikuz, Slovenia
MIL01 07 S. W. Milbourn, England
MOO01 07 Patrick A. Moore, Ireland
*MOO03 07 C. Moore, Essex, England
*MOO04 07 George Moore, London, England
MOS02 07 Terance C. J. A. Moseley, Ireland
*MUR01 07 Terrance Murtagh, Armagh, Ireland
*NAP01 07 John W. Napper, England
NEL 07 J. Nelson, Lancashire, U.K.
NIG 07 H. C. Nightingale, Zambia
*NIL 07 Carsten Nilsson, Sweden
NOR01 07 D. J. Northwood, Middlesex, U.K.
*OLL 07 George Ollis, England
ORC01 07 D. W. Orchiston, Australia
ORR 07 J. B. Orr, New Zealand
PAC 07 M. F. Pace, England
*PAG 07 Arthur and B. Page, Australia
PAL 07 K. J. Pallett, England
PAN 07 Roy W. Panther, England
PAR03 07 Mieczyslaw L. Paradowski, Poland
*PAR04 07 Grahame Parkin, England
*PAU01 07 Alan R. Paul, N. Ireland
PEA 07 Andrew R. Pearce, Australia
PER01 07 Alfredo J. S. Pereira, Portugal
PIC 07 R. D. Pickard, England
PIN 07 D. J. Pinnion, Essex, U.K.
*POI01 07 Leonard Pointon, England
POT 07 A. Potts, England
*RAC 07 Thomas W. Rackham, England
*RAM01 07 Gavin Ramsay, England

REE02	07	C. Reeves, Botswana
RID	07	Harold B. Ridley, England
RIP	07	Jose Ripero Osorio, Spain
ROB01	07	J. Roberts, England
*ROB05	07	Gregory Roberts, Natal, S. Africa
ROG02	07	J. H. Rogers, England
ROT	07	D. A. Rothery, North Wales
*RUT	07	G. H. Rutter, Woolston, England
SAM	07	William B. Samson, Scotland
*SAV03	07	A. Mark Savil, England
*SAW02	07	J. Saward, Essex, England
*SCA01	07	Robin S. Scagell, England
SCH05	07	Patrick Schmeer, West Germany
SCH07	07	Paul Schlyter, Sweden
SHA02	07	Jonathan D. Shanklin, England
*SHE02	07	Dennis Shevelan, England
*SHI05	07	R. C. Shinkfield, S. Australia
*SIL01	07	Paulo Mourilhe Silva, Brazil
SIM	07	Karl Simmons, FL, U.S.A.
SIM02	07	D. A. R. Simmons, Scotland
*SLA02	07	H. Slade, Falkland Is.
*SMI06	07	Albert Smith, London, England
*SMI07	07	Bruce Smith, London, England
*SPE02	07	Michael Spencer, Cyprus
*STA	07	P. M. Stanbury, Kent, England
*STE11	07	P. Stevenson, Northants, England
STO01	07	G. E. Stone, England
STO03	07	David Storey, England
STO04	07	D. J. W. Stone, England
STU	07	K. M. Sturdy, England
*SUT01	07	Paul G. Sutherland, England
*SZC	07	Stefan Szczyrbak, England
TAN02	07	Tony Tanti, Malta
TAY	07	M. D. Taylor, England
TAY02	07	G. E. Taylor, England
THO	07	Gregg D. Thompson, Australia
VEN	07	S. C. Venter, South Africa
VER	07	A. Verveer, WA, Australia
VER01	07	A. A. Verschraegen, Belgium
VET	07	J. C. Vetterlein, England
VIN	07	A. W. and P. H. Vince, England
WAR01	07	Johan Warell, Sweden
WAR02	07	Donald Ward, Victoria, Australia
WAT	07	R. L. Waterfield, England
*WAT05	07	E. Watkins, Essex, England
*WHE	07	T. D. S. and J. D. Whelan, N.Z.
*WHY	07	T. Why, Brighton, England
*WIN01	07	Graham Winstanley, England
WOL01	07	Graham W. Wolf, New Zealand
YOU02	07	P. J. Young, Yorkshire, U.K.

Observer codes for contributions of other observations:

BAR06	26	Alexandr R. Baransky, Ukraine
BEG	23	Peter Begeni, Slovak Republic
BIV		Nicolas Biver, France
BUL02	23	Lucie Bulickova, Czech Republic
BUR03	23	Zbynek Burget, Czech Republic
CAV		Marco Cavagna, Italy
DIJ		Edwin van Dijk, The Netherlands
DUS01	23	Jiri Dusek, Czechoslovakia
DVO	23	Denisa Dvorakova, Czech Republic
FAB	23	Peter Fabian, Slovak Republic
*FAL	23	Hynek Falta, Czech Republic
GAR02		Stephane Garro, France
*GRA05	23	Zdeno Grajcar, Slovak Republic
HLO	23	Peter Hlous, Czech Republic
HOR02	23	Kamil Hornoch, Czechoslovakia
HUD02	23	T. Hudecek, Czech Republic
JAN03	23	Otto Janousek, Czech Republic
KEI		Graham Keitch, England
KLA01	23	P. Klasek, Czech Republic
KLI	23	J. Klimek, Czech Republic
KOB01	16	Juro Kobayashi, Japan
KOS		Attila Kosa-Kiss, Romania
KYS	23	J. Kysely, Czech Republic
MAC02	23	Marcela Mackova, Czech Republic
*MAI	37	Alexander S. Maidic, Ukraine
MAR15	23	Tomas Marek, Czech Republic
MIK		Herman Mikuz, Slovenia
MIL02		Giannantonio Milani, Italy
MOD		Robert J. Modic, OH, U.S.A.
MUS	23	Jano Musinsky, Slovak Republic
NAK01	16	Akimasa Nakamura, Japan
NEJ	23	Tomas Nejezchleba, Czech Republic
PLS	23	Martin Plsek, Czech Republic
POD	23	M. Podzorny, Czech Republic
POP	23	Martin Popek, Czech Republic
PRA01	23	Petr Pravec, Czech Republic
REZ	23	Tomas Rezek, Czech Republic
ROL	23	Juraj Rolko, Slovak Republic
*SEB01	23	Peter Sebestyen, Slovak Republic
STE10	23	Petr Stepan, Czech Republic
TRU01	23	Karel Trutnovsky, Czechoslovakia
VAN11	23	Martin Vanous, Czech Republic
*VAN12	23	Jaroslav Vanous, Czech Republic
VEL03		Peter Velestschuk, Ukraine
*VOR	23	Jakub Vorel, Czech Republic
YOS	16	Shigeru Yoshida, Japan
ZNO	23	Vladimir Znojil, Czech Republic

◇ ◇ ◇

Comet C/1958 D1 (Burnham)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1958 03 06.81		P	10.5:		6.5	R	6		3	2			HEN
1958 03 09.82		P	10.5:		6.5	R	6		4	3			HEN
1958 03 09.9			10 :		20.5	L	5	27		2			TAY02
1958 03 10.83		P	10 :		9	R	6		3				BLA
1958 03 10.94		P	11 :		6.5	R	6		4	3			HEN
1958 03 11.84			8.9	BD	20.5	L	5	27		2			TAY02
1958 03 14.85		P	10.7:		6.5	R	6		5	3			HEN
1958 03 15.8			8.5	UM	10	B		25	6	5			ALC

Comet C/1958 D1 (Burnham) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1958 03 15.85			9.3:		20.5	L	5	27					TAY02
1958 03 16.84		P	11		6.5	R	6		5	5			HEN
1958 03 16.9			8.3	UM	10	B		25	10	5			ALC
1958 03 16.93			9.3:		20.5	L	5	27					TAY02
1958 03 19.88			9.0:		16	L		54	1	2			HAR05
1958 03 19.89		P	10.5		6.5	R	6		10	6	0.05	280	HEN
1958 03 19.9			10 :		16	R		50	2	2			VIN
1958 03 19.91			8.5	HS	12.5	L		36	7	3			PAN
1958 03 21.97			8.7	S	12.5	L		36	6	3			PAN
1958 04 10.9			8.7		16	R		50	2	3			VIN
1958 04 10.92			9.5	HS	16	L		53	3	2			HAR05
1958 04 11.92			9.1	S	16	L		53	3	2			HAR05
1958 04 12.0			9.3		16	R		50	2	3			VIN
1958 04 12.9			8.5:		10	B		25	12	5			ALC
1958 04 12.9			8.5:		32	R	18	80	10	4			MAR03
1958 04 13.01			9.5	HS	16	L		53	4	3			HAR05
1958 04 13.93			9.1	HS	16	L		53	3	3			HAR05
1958 04 15.93			9.3	HS	16	L		53	4	3			HAR05
1958 04 19.9			8.5		32	R	18	80	8	5			MAR03
1958 04 20.0			9.5		16	R		50	2	3			VIN
1958 04 20.01			8.3	S	16	L		53	5	4			HAR05
1958 05 09.9			9.0		16	R		50	3	3			VIN
1958 05 16.94			8.9	S	12.5	L		36	8	3			PAN
1958 05 16.95			10.0	HS	16	L		53	2	2			HAR05
1958 05 17.92			9.0	S	12.5	L		36	8	2			PAN
1958 05 20.9			10.2		16	R		50	3	2			VIN
1958 05 20.95			9.4	S	12.5	L		36	6	2			PAN
1958 05 23.95			8.9	S	12.5	L		36	6	2			PAN

Comet C/1959 Q1 (Alcock)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1959 08 25.8			9.5		10.5	B		25	6	2			ALC
1959 08 26.9			9.7:		10.5	B		25	6	2			ALC
1959 08 27.9			9.5:		20	L		27		3			TAY02
1959 08 28.9			9.5:		20	L		27		3			TAY02
1959 08 28.90		E	9.6						4.0				BEY
1959 08 28.96			9.0	S	20	L		60	5	3			PAN
1959 08 29.9			9.5:		20	L		27		3			TAY02
1959 08 29.91			9.6	HS	20	L		60	5	3			PAN
1959 08 29.94		E	9.8						4.0				BEY
1959 08 30.91			9.0	S	20	L		60	5	2			PAN
1959 08 31.88		E	9.7						4.3				BEY
1959 08 31.94			9.8	UL	20	L		60	4.5	2			PAN
1959 09 01			10.0		13	R			8	2			VET
1959 09 01.89		E	9.1						7.6				BEY
1959 09 01.9			9.5:		20	L		27		3			TAY02
1959 09 02.21			11 :	UM	25.5	L	6	44	3.5	3			BAL
1959 09 02.87			9.7	S	20	L		60	6.5	2			PAN
1959 09 02.9			10.7:		10.5	B		25					ALC
1959 09 03.97			9.2	HS	20	L		60	5	2			PAN
1959 09 04.94			9.1	HS	20	L		60	8	2			PAN
1959 09 07.89			10.8	HS	25.5	L		120	8	2			PAN

Comet C/1959 Q2 (Alcock)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1959 09 03.16			6.0:		10.5	B		25					ALC
1959 09 04.15			4.7		5.0	B		7					VEN
1959 09 05.15			5.1		5.0	B		7					VEN
1959 09 06.15			5.5		5.0	B		7					VEN
1959 09 07.15			6.0		5.0	B		7					VEN
1959 10 22			[10 :		20	L							PAN

Comet C/1959 Y1 (Burnham)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1960 03 26.13			6.5		7	R		20					VEN
1960 03 26.14			6.5		12.5	R							BEN
1960 03 31.13			6.7		7	R		12		7	0.25		VEN
1960 03 31.14			5.5		12.5	R							BEN
1960 04 01.11			6.0		7	R		20					VEN
1960 04 03.7			6.5		5.0	B		7					MCI01
1960 04 03.70			7.0:	UM	10	R		25	1.1	4			ORR
1960 04 04.13			6.6		7	R		20					VEN
1960 04 04.14			5.0		12.5	R							BEN
1960 04 05.13			6.7		7	R		20					VEN
1960 04 08.13			6.2		7	R		20					VEN
1960 04 08.69			7.0:		10	R		25	1.1	4			ORR
1960 04 13.15			6.5		7	R		20					VEN
1960 04 16.13			6.5		7	R		20	4	3			VEN
1960 04 18.73			5.0		5.0	B		7		5			MCI01
1960 04 19.13			5.0		7	R		12	4	3			VEN
1960 04 20.71			4.5		5.0	B		7	12	5			MCI01
1960 04 27			4.2		5				30				WAT

Comet C/1960 Y1 (Candy)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1961 01 06.82			9.3:		5	R		7		4			POI01
1961 01 08.84			8.2	S	20.5	L		60	2.5	2			PAN
1961 01 10.83			8.4	S	20.5	L		60	4	4			PAN
1961 01 27.78			8.5:		9	R		130		3			BLA
1961 01 27.82			9.0		9	R			2				SIM02
1961 02 02.76			8.4	S	12.5	R		15					CAN
1961 02 04.81			8.8	S	12.5	R		15					CAN

Comet C/1961 O1 (Wilson-Hubbard)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1961 07 26.05			4 :		0.0	E		1			25		SPE02

Comet C/1961 R1 (Humason)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1961 10 01.90		P	12 :		6.5	R			1.5				HEN
1961 10 02.86		E	11.2	BD	26	R							BEY
1961 10 02.93		E	11.2	BD	26	R			3.8				BEY
1961 10 07.92			11.3:		15	L			3		0.02	270	WAT
1961 10 28.89			10 :		16	R		50					VIN
1962 07 26.02		S	7.0	UA	15	L		40	5	7	0.2	260	HIN
1962 08 06.00		S	7.0	UA	15	L		40	8	6	0.25	310	HIN
1962 08 08.01		S	7.0	UA	12.5	R		21	5	6	0.2	300	HIN
1962 08 10.00		S	7.8	UA	15	L		27	5	6		290	HIN
1962 08 20.92			6.5	UX	5.0	B		10		5			NEL
1962 08 21.92			6.7	UX	5.0	B		10		3			NEL
1962 08 24.01		S	7.6	UA	12.5	R		21	4	6		310	HIN
1962 08 24.93			6.0	UX	5.0	B		10		4	1.5		NEL
1962 08 25.00		S	7.2	UA	15	L		27	8	7	0.2	10	HIN
1962 08 25.9			8.6	S	16	R		50		5			VIN
1962 08 25.94			6.3	UX	5.0	B		10	3	4			NEL
1962 08 28.97			6.8		8.0	B		12	8	8	0.25	5	HIN
1962 08 28.97			7.4		15	L		40	5	8		5	HIN
1962 08 29.95			7.0:		25.5	L		30	15	5	0.25	55	POI01
1962 08 29.97			7.5:		15	L		40	5	7	0.17		HIN
1962 09 01.05			7.5	MV	25.5	L		50	1.5		0.07	30	HAR06
1962 09 08.79			6.3		3.5	R		15					HUT
1962 09 16.83			6.2		3.5	R		15					HUT
1962 10 18.50			7.0:		30	M		40		5	7		ORR
1962 10 24.51			7.1	UX	12.5	R		20	7	2	0.8	310	MEN02
1963 02 05.10			7.3	UL	5.0	B		7		2			VEN
1963 02 06.10			8.0	UL	5.0	B		7		3	0.12		VEN

Comet C/1961 T1 (Seki)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1961 10 27.2			7.1	S	10	B							ALC
1961 10 29.2			6.6	S	10	B			5				ALC
1961 10 29.2		S	7.5	S	16	R		50	1	3			VIN
1961 10 31.23			5.5	SP					5	3			CAR03
1961 11 02.09			5.8	BD					8	1			BEN
1961 11 02.10			6.2		5.0	B		7					VEN
1961 11 03.10			6.0		5.0	B		7					VEN
1961 11 03.23		S	5.7	SP							0.3		CAR03
1961 11 05.08			5.8		5.0	B		7					VEN
1961 11 09.09			5.0	BD					8	2			BEN
1961 11 10.28			4.5:		20.5	R		30		2			SIL01
1961 11 12.21			4.3	S	10	B			>30		4.0		ALC
1961 11 12.62			6.0:		0.0	E		1	15				ORR
1961 11 13.08			4.0		7	R		20	25	3			VEN
1961 11 13.08			4.0	BD	7.5	R		150	30	3			BEN
1961 11 14.42			5.5	UM	5.0	B		7	>30				MCI01
1961 11 14.48			7.0:			B							ORR
1961 11 15.06			4.0		7	R		40	30	3			VEN
1961 11 15.82			4.0	CD	0.0	E		1					BEN
1961 11 15.86			4.0		7	R		40					VEN
1961 11 16.08			5.0	UM	5.0	B		7	25	3			VEN
1961 11 16.79			5.0		0.0	E		1					VEN
1961 11 16.89			4.5	CD	7.5	R							BEN
1961 11 17.08			5.3		0.0	E		1					VEN
1961 11 18.06			5.5		7	R		40					VEN
1961 11 18.35			7.0:			B							ORR
1961 11 18.39			5.7	UM	5.0	B		7	30				MCI01
1961 11 18.44			6.9	HD		B							ORR
1961 11 18.48			7.0			B			30				ORR
1961 11 18.89			5.2	S	7.5	R	12						BEN
1961 11 19.35			7.0:			B							ORR
1961 11 19.49			5.4	HD	5.0	B		7					MCI01
1961 11 19.79			5.5	UM	7	R		40					VEN
1961 11 20.40			7.0		5.0	B		7					MCI01
1961 11 29.84			8.0	CD	7.5	R	12			2			BEN
1961 11 30.75			8.5		5.0	B		7					VEN
1961 11 30.85			8.0	CD	7.5	R	12			2			BEN
1961 12 02.37			8.4:		76.5	L		78	12	0			ORC01

Comet C/1962 H1 (Honda)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1962 05 03.95			7.8		15	L		40	3	5			HIN
1962 05 04.96			7.8		15	L		40	4	5		25	HIN
1962 05 07.9			7.4	SC	16	R		50	2	1			VIN
1962 05 08.02			7.3		15	L		80		3			ST004
1962 05 09.94			8.0		20	R	14	40	5				LLO
1962 05 10.95			7.3		15	L		80		3			ST004
1962 05 17.79			7.0:		25	B		10					HUT

Comet C/1963 A1 (Ikeya)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1963 01 29.10			5.7	UL	7	R		40	5	4			VEN
1963 01 30.10			5.7	UL	5.0	B		7					VEN
1963 01 31.09			5.9	UL	5.0	B		7	4	5			VEN
1963 02 04.10			5.8	VN	12.5	R		20	6	3			MEN02
1963 02 05.10			5.0	UL	5.0	B		7	7	5			VEN
1963 02 06.10			5.0	UL	5.0	B		7	7	5			VEN
1963 02 06.10			6.3	VN	12.5	R		20	10	4	0.05	100	MEN02
1963 02 07.10			5.0	UL	5.0	B		7	7	5			VEN
1963 02 07.83			7.0:	UL	5.0	B		7		4			ROB05
1963 02 08.10			4.6	UL	5.0	B		7					VEN
1963 02 09.84			4.2	UL	5.0	B		7		5			VEN
1963 02 10.79			6.5	UL	5.0	B		7	10				ROB05

Comet C/1963 A1 (Ikeya) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1963 02 11.08			4.0	UL	7	R		20					VEN
1963 02 11.85			6.3	UL	5.0	B		7		2			ROB05
1963 02 12.02			3.7	UX	12.5	R		20	15	3	0.5	60	MEN02
1963 02 12.10			3.9	UL	5.0	B		7					VEN
1963 02 12.46			4.4	UX	5.0	B		7	8	3			SHI05
1963 02 12.75			4.2	UL	5.0	B		7	12		3		ROB05
1963 02 12.79			3.6	UL	0.0	E		1	9	6			VEN
1963 02 13.83			3.4	UL	0.0	E		1					VEN
1963 02 14.03			5.5	UX	12.5	R		20	25	4	2.5	100	MEN02
1963 02 14.77			4.0:	UL	0.0	E		1			9		ROB05
1963 02 14.85			3.5	UL	0.0	E		1					VEN
1963 02 15.47			2.9	UX	5.0	B		7	15	3	1		SHI05
1963 02 16.47			2.9	UX	5.0	B		7	15	3	1		SHI05
1963 02 16.85			3.5	UL	0.0	E		1					VEN
1963 02 16.88			4.0:	UL	0.0	E		1		4	8		ROB05
1963 02 17.77			3.3	UL	0.0	E		1	10	6	5		VEN
1963 02 17.78			3.8	UL	0.0	E		1			10		ROB05
1963 02 17.79			3.0:	UL	0.0	E		1		5			BRI
1963 02 18.50			3.7	UX	5.0	B		7					SHI05
1963 02 18.72			4.0:	UL	0.0	E		1		4	12		ROB05
1963 02 18.75			3.5	UL	0.0	E		1	10		5		VEN
1963 02 20.00			3.5	UX	12.5	R		20		4	2	90	MEN02
1963 02 20.75			3.4	UL	0.0	E		1					VEN
1963 02 20.79			4.0	UL	0.0	E		1					BRI
1963 02 21.05			3.6	UX	12.5	R		20	15	3	2.5	90	MEN02
1963 02 21.46			3.8	UX	5.0	B		7	8		0.75		SHI05
1963 02 21.75			3.5	UL	0.0	E		1					VEN
1963 02 21.79			4.1	UX	0.0	E		1		7			BRI
1963 02 21.99			4.3	S	12.5	R		20	12	4N	2.5	90	MEN02
1963 02 22.45			3.4	UX	5.0	B		7	8		0.75		SHI05
1963 02 22.80			3.0:	UL	0.0	E		1					MAR03
1963 02 22.83			3.5	UL	0.0	E		1					VEN
1963 02 23.46			3.4	UX	5.0	B		7					SHI05
1963 02 23.80			4.7:	UL	1.1	B		5		3		65	HUT
1963 02 24.48			3.8	UX	5.0	B		7	6		1.5		SHI05
1963 02 24.74			3.0:	UL	0.0	E		1		5			ROB05
1963 02 24.75			3.7	UL	5.0	B		7			5		VEN
1963 02 24.79			4.0	UX	10	L		31		3	1	85	HUT
1963 02 25.75			3.5	UL	5.0	B		7			3.5		VEN
1963 02 25.78			3.7:	UX	5.0	B		10		6			NEL
1963 02 25.79			4.1	UL	0.0	E		1					BRI
1963 02 25.80			3.0:	UX	5.0	B		7		5	2	90	MAL04
1963 02 26.75			3.5	UL	0.0	E		1	6		9		VEN
1963 02 26.78			3.2	AA	8.0	B		10			1.5		ALC
1963 02 26.79			3.7:	UX	5.0	B		10		7			NEL
1963 02 26.80			3.7	AA	0.0	E		1					BRI02
1963 02 27.75			3.6	UL	0.0	E		1			7		VEN
1963 02 27.79			4.2	UL	0.0	E		1					BRI
1963 02 28.75			3.6	UL	0.0	E		1			4		VEN
1963 02 28.79		!	4.0	AA	15	L		35	8	4			MIL01
1963 02 28.81			5.0:	UL	5.0	B		10					ST004
1963 02 28.82			4.2	UL	10	L		36		3	0.25	78	HUT
1963 02 28.82			5.0:	UL	10	L		36		3	0.25	72	JON03
1963 03 01.78			4.0:	UX	5.0	B		10		5	0.5		NEL
1963 03 01.79			4.5:	UL	5.0	B		10					ST004
1963 03 01.80			3.5:	UL	2.5	B		8					GLY
1963 03 01.80			3.8	UL	12.5	R		21	4	5			HIN
1963 03 01.80			4.0:	UL	15	L		35	10	5			MIL01
1963 03 01.80		!	2.9	UX	9	R		27	2.3	5			MAL04
1963 03 01.81			3.4	AA	5.0	B		7					BRI02
1963 03 02.45			3.6	AA	0.0	E		1	5				SHI05
1963 03 02.77			3.7	UL	5.0	B		7					VEN
1963 03 02.78			4.0:	UX	5.0	B		10		5			NEL
1963 03 02.79			3.9	AA	15	L		35	8	6			MIL01
1963 03 02.80			3.0:	UL	0.0	E		1	2.5				HEN

Comet C/1963 A1 (Ikeya) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1963 03 02.82			4.1	UL	10	L		31		3	0.25	100	HUT
1963 03 03.77			3.7	UL	5.0	B		7					VEN
1963 03 03.78			3.9	AA	5	R		7	10	5			MIL01
1963 03 03.80			3.6:	UL	12.5	R		21	5	7			HIN
1963 03 03.81			4.1	UX	10	L		31	4	3	0.3	110	HUT
1963 03 03.82			5.2	AA	3.5	B		7		4			HEG
1963 03 04.44			4.1	AA	0.0	E		1	4		1		SHI05
1963 03 04.80			5.2	AA	3.5	B		7		4			HEG
1963 03 06.77			3.7	UL	5.0	B		7					VEN
1963 03 07.79			4.3	UL	0.0	E		1					BRI
1963 03 07.80			4.1	AA	5.0	B		7					HEG
1963 03 09.77			5.0	UL	5.0	B		7					VEN
1963 03 09.79			5.0	UL	0.0	E		1					BRI
1963 03 10.80			4.0	UL	16	R		50	2	6			VIN
1963 03 10.83			4.2	UX	10	L		31	3	2	0.2	95	HUT
1963 03 11.44			4.1	AA	5.0	B		7					SHI05
1963 03 11.85			4.3	AA	5	R		7		7			SAM
1963 03 12.75			4.5	UL	5.0	B		7					VEN
1963 03 12.81			2.7	UX	5.0	B		10		5	1		NEL
1963 03 12.83			4.5:	UL	5.0	B		12			3		LEM
1963 03 12.90			3.3	UL	9	R		27		5	1.3		MAL04
1963 03 14.43			4.1	AA	5.0	B		7					SHI05
1963 03 15.44			4.1	AA	5.0	B		7					SHI05
1963 03 15.76			4.0	UX	10	L		31			0.4	95	HUT
1963 03 15.81	!		2.9	AA	11.5	R		30	4	6		90	HIN
1963 03 16.75			4.6	UL	5.0	B		7					VEN
1963 03 16.79			4.5	UL	0.0	E		1			5		BRI
1963 03 16.81			3.0:	UX	5.0	B		10		5			NEL
1963 03 18.80	!		4.2	AA	5	R		7	2.5	9	2.5		MAL04
1963 03 18.81			2.9	UX	5.0	B		10			3		NEL
1963 03 18.81			4.0	AA	6.0	B		10	5	6	2		MIL01
1963 03 18.81			5.7	UX	7.5	R		28	4	2	0.1	30	HUT
1963 03 18.82			5.5	UX	7.5	R		27			0.1	20	JON03
1963 03 18.83	!		2.8	AA	11.5	R		30	5	7	0.5	100	HIN
1963 03 20.75			4.8	UL	5.0	B		7	1.5				VEN
1963 03 21.79			5.5	UL	0.0	E		1			1		BRI
1963 03 22.84			4.3	UX	15	L		40	4	6		100	HIN
1963 03 23.84			4.2	UX	15	L		40	4	5	0.25		HIN
1963 03 25.82			4.5	UX	12.5	R		21	4	5			HIN
1963 07 14.00		P	9.5	UL	15	R	5						WAT
1963 07 22.97		P	11.5	UL	15	R	5						WAT
1963 07 27.90			11.7	UL	16	R		50	5	1			VIN
1963 07 28.90			11.7	UL	16	R		50	5	1			VIN
1963 07 29.90			11.7	UL	16	R		50	5	1			VIN

Comet C/1963 F1 (Alcock)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1963 03 23.0			8.1	S	22	L		44	2.2	5			MAL04
1963 03 24.0			8.3	S	22	L		44	2.3	4			MAL04
1963 04 13.01			7.3	S	22	L		110	3	6			DOH
1963 04 13.96			8.0	S	10	R		30	8	5			HEG
1963 04 19.96			8.2	S	15	L		35	10	5			MIL01
1963 05 17.89			6.1	S	10	L		25	5				LEM
1963 05 17.94			6.2	S	15	L		35	10	8			MIL01
1963 05 25.92			7.6	S	10	L		25	5				LEM
1963 06 10.92			6.1	SC	6	R		20	4	5			LEM
1963 06 11.92			7.0	SC	6	R		20	4	6			LEM
1963 06 22.95			7.6	S	6	R		20	4	3			LEM
1963 07 19.45			9.0	S	15	L		58	3	3	0.07		WAR02

Comet C/1963 R1 (Pereyra)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1963 09 17.13			6.0	UL	5.0	B		7			3		VEN

Comet C/1963 R1 (Pereyra) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1963 09 17.20			6.0	UL	6.0	B		10			0.5		BEN
1963 09 18.13			6.0	UL	5.0	B		7			6		VEN
1963 09 19.13			6.5	UL	5.0	B		7			4		VEN
1963 09 19.21			6.0	UL	6.0	B		10			3	270	BEN
1963 09 20.13			6.5	UL	5.0	B		7					VEN
1963 09 22.13			6.7	UL	5.0	B		7			5		VEN
1963 09 23.13			6.8	UL	5.0	B		7			6		VEN
1963 09 24.13			7.2	UL	5.0	B		7			1.5		VEN
1963 09 25.13			7.3	UL	5.0	B		7			1		VEN
1963 09 27.12			7.0	UL	6.0	B		10			2	270	BEN
1963 09 27.13			7.5	UL	5.0	B		7			0.5		VEN
1963 09 28.13			7.6	UL	5.0	B		7					VEN
1963 09 29.13			7.6	UL	5.0	B		7	1		1		VEN
1963 10 01.13			7.7	UL	5.0	B		7			4		VEN
1963 10 02.11			8.0	UL	6.0	B		10					BEN
1963 10 08.11			8.5	UL	12.5	R		21					BEN
1963 10 14.10			9.0:	UL	5.0	B		7					VEN
1963 10 15.10			9.6	UL	5.0	B		7					VEN
1963 10 15.11			9.2	UL	12.5	R		21	3				BEN

Comet C/1964 N1 (Ikeya)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1964 07 08.13			6.7		5.0	B		7		3			VEN
1964 07 08.14			8.0		6.0	B		10		6			BEN
1964 07 09.15			7.5		5.0	B		7	6	3			VEN
1964 07 10.14			7.5		6.0	B		10					BEN
1964 07 10.15			7.5		5.0	B		7					VEN
1964 07 11.15			7.5		5.0	B		7					VEN
1964 07 13.14			7.2		6.0	B		10					BEN
1964 07 13.15			7.2		5.0	B		7	5	3			VEN
1964 07 14.15			7.2		5.0	B		7					VEN
1964 07 15.13			7.2		6.0	B		10			0.5		BEN
1964 07 15.15			7.2		5.0	B		7					VEN
1964 07 16.15			7.2		5.0	B		7					VEN
1964 07 17.14			7.3		6.0	B		10					BEN
1964 07 18.14			7.1		5.0	B		7		4			VEN
1964 07 19.13			7.0		6.0	B		10					BEN
1964 07 19.15			6.7		7	R		20		3			VEN
1964 07 20.15			6.7		5.0	B		7					VEN
1964 07 21.14			6.3		5.0	B		7					VEN
1964 07 22.14			6.2		5.0	B		7					VEN
1964 07 23.13			6.0		5.0	B		7					VEN
1964 07 24.15			5.7		5.0	B		7					VEN
1964 07 25.14			5.5		6.0	B		10					BEN
1964 07 25.15			5.5		5.0	B		7					VEN
1964 07 26.15			5.3		5.0	B		7					VEN
1964 07 27.13			5.1		5.0	B		7	5	4			VEN
1964 07 28.15			5.2		5.0	B		7					VEN
1964 07 29.14			4.9		5.0	B		7					VEN
1964 07 30.15			4.8		5.0	B		7					VEN
1964 07 31.15			4.8		5.0	B		7					VEN
1964 08 01.13			4.8		6.0	B		10	5	5			BEN
1964 08 01.15			4.7		5.0	B		7	5	6			VEN
1964 08 02.15			4.6		5.0	B		7	5	6			VEN
1964 08 03.15			4.5		5.0	B		7					VEN
1964 08 04.15			4.5		5.0	B		7	6	4			VEN
1964 08 05.15			4.2		5.0	B		7					VEN
1964 08 05.76			4.4	S	0.0	E		1	7		0.5		MAT01
1964 08 06.13			4.3		6.0	B		10	10		2.5	225	BEN
1964 08 06.15			3.9		5.0	B		7			3.5		VEN
1964 08 06.78			4.0		0.0	E		1		7			JON01
1964 08 07.15			3.0		5.0	B		7	5	4	3.0		VEN
1964 08 07.80			3.3		0.0	E		1			0.5		MAT01
1964 08 08.15			3.0		5.0	B		7	5		3.0		VEN

Comet C/1964 N1 (Ikeya) [cont.]

DATE (UT)	N MM	MAG.	RF	AP.	T F/	PWR	COMA	DC	TAIL	PA	OBS.
1964 08 08.15		3.5		6.0	B	10			4.0		BEN
1964 08 09.15		2.8		5.0	B	7	9	6	3.0		VEN
1964 08 10.15		2.8		5.0	B	7		6	6.0		VEN
1964 08 10.15		3.1	S	6.0	B	10			>5		BEN
1964 08 11.16		2.7		5.0	B	7		7			VEN
1964 08 13.71		2.7		5.0	B	7					VEN
1964 08 14.36		3.5		0.0	E	1					MAT01
1964 08 14.71		2.7		5.0	B	7	5	4			VEN
1964 08 15.71		2.8		5.0	B	7	7		4.0		VEN
1964 08 15.73		3.2	S	6.0	B	10			>3		BEN
1964 08 16.35		3.5		0.0	E	1					MAT01
1964 08 16.71		3.0		5.0	B	7					VEN
1964 08 17.33		3.5									HOD
1964 08 17.44		3.5		0.0	E	1					MAT01
1964 08 17.71		3.2		5.0	B	7	4	6			VEN
1964 08 17.72		3.2	S	6.0	B	10					BEN
1964 08 19.42		5.0:		0.0	E	1					MAT01
1964 08 19.71		3.6		0.0	E	1					VEN
1964 08 20.43		4.5:		0.0	E	1					MAT01
1964 08 20.74		4.2		5.0	B	7					VEN
1964 08 21.74		4.8		5.0	B	7					VEN
1964 08 23.71		4.7		5.0	B	7					VEN
1964 08 25.36		5.5		20	L	40					JON01
1964 08 25.38		4.5	S	0.0	E	1					MAT01
1964 08 25.75				5.0	B	7	1	3			VEN
1964 08 25.76		5.5		6.0	B	10					BEN
1964 08 26.40		4.7	S	0.0	E	1					MAT01
1964 08 26.41		5.0									HOD
1964 08 26.73		5.4		5.0	B	7					VEN
1964 08 28.40		6.0:		5.0	B	7					MAT01
1964 08 29.42		6.5		5.0	B	7					MAT01
1964 08 29.72		5.6		5.0	B	7	2	3			VEN
1964 08 30.72		5.8		5.0	B	7			1.0		VEN
1964 08 31.73		7.5		5.0	B	7		7			VEN
1964 09 01.69		6.2	S	6.0	B	10					BEN
1964 09 03.70		6.5	S	6.0	B	10					BEN
1964 09 03.75		6.2		5.0	B	7		4			VEN
1964 09 04.38		6.0	UX	5.0	B	7					MAT01
1964 09 04.73		6.3		5.0	B	7					VEN
1964 09 04.73		6.3		5.0	B	7					VEN
1964 09 05.38		6.2		5.0	B	7					MAT01
1964 09 05.74		6.5	S	6.0	B	10					BEN
1964 09 05.75		6.3		5.0	B	7					VEN
1964 09 06.40		6.3		5.0	B	7					MAT01
1964 09 07.71		6.8	S	6.0	B	10					BEN
1964 09 07.77		7.0		5.0	B	7					VEN
1964 09 08.75		7.0		5.0	B	7					VEN
1964 10 01.39		10.5		20	L	40					JON01
1964 10 02.37		10.5		20	L	40					JON01
1964 10 03.38		10.5		20	L	40					JON01
1964 10 04.38		10.5		20	L	40					JON01
1964 10 05.38		11.0		20	L	180					JON01

Comet C/1964 P1 (Everhart)

DATE (UT)	N MM	MAG.	RF	AP.	T F/	PWR	COMA	DC	TAIL	PA	OBS.
1964 08 09.84		8.5		6.0	B	10		3			BEN
1964 08 10.75		8.0		6.0	B	10		3			BEN
1964 08 10.84		7.9		5.0	B	7		2			VEN
1964 08 19.43		7.0:		5.0	B	7					MAT01
1964 08 20.44		6.5:		5.0	B	7					MAT01
1964 08 24.92		6.5		8.0	B	10	8	4			BRO02
1964 08 25.72		7.0		6.0	B	10	3	3			BEN
1964 08 25.93		8.0		10	B		10				STO01
1964 08 26.75		6.6		5.0	B	7		3			VEN

Comet C/1964 P1 (Everhart) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1964 08 26.77			7.0		6.0	B		10	3	3			BEN
1964 08 26.89			7.0:		10	R		40	15	3			MIL01
1964 08 26.9			8 :		16	R		50	3	3			VIN
1964 08 27.39			6.5										HOD
1964 08 27.42			6.5		5.0	B		7					MAT01
1964 08 27.85			6.6		8.0	B		10	8	5			BR002
1964 08 28.39			7.0		5.0	B		7					MAT01
1964 08 28.88			6.9		10.5	B		25	8				BR002
1964 08 29.41			8.0:		5.0	B		7					MAT01
1964 08 29.74			7.5		6.0	B		10					BEN
1964 08 29.85			7.5:		5	R		6					TAY02
1964 08 29.88			7.2		10.5	B		25	8				BR002
1964 08 29.90			8.3	S	10	R		30	5	4			HEG
1964 08 29.91		S	8.3	S	25.5	L		50	2	3			DIN01
1964 08 30.87		S	8.4	S	25.5	L		50	2	3			DIN01
1964 08 30.88			7.4		10.5	B		25	7				BR002
1964 08 30.88			10.5	HS	10	R		30	3	4			HEG
1964 08 30.97			8.8	VB	12.5	R		18	4	3			HIN
1964 08 31.73			8.5		6.0	B		10					BEN
1964 08 31.84			7.5		10.5	B		25	8				BR002
1964 08 31.86		S	8.5	S	25.5	L		50	2	3			DIN01
1964 08 31.9			8.7:		16	R		50	3				VIN
1964 08 31.90			8 :		10	R		40		2			MIL01
1964 08 31.90			8.7	S	10	R		30	5	4			HEG
1964 09 01.87			8.4	S	10	R		30	5	4			HEG
1964 09 01.88			7.8		10.5	B		25	8				BR002
1964 09 02.85		S	9.2	S	25.5	L		50					DIN01
1964 09 02.88			8.0		10.5	B		25	8				BR002
1964 09 02.92			9.1	VB	12.5	R		18	5	6			HIN
1964 09 03.90			9.3	VB	12.5	R		18	4	6			HIN
1964 09 04.92			9.4	VB	12.5	R		18	4	5			HIN
1964 09 05.72			8.5		6.0	B		10					BEN
1964 09 06.90			8.0:	UX	7.5	R		32		4			NEL
1964 09 06.91			9.6	VB	12.5	R		18	4	3			HIN
1964 09 07.74			9.0		6.0	B		10					BEN
1964 09 08			9.3		10	B			5				ALC
1964 09 08.72			9.0		6.0	B		10					BEN
1964 09 09.88			9.0	VB	8.0	B		10	8	3			BR002
1964 09 11.88			9.3		10.5	B		25	10	3			BR002
1964 09 11.89			9.1	UX	7.5	R		32		3			NEL
1964 09 11.91			9.4	HS	15	L		25	9	3			HEG
1964 09 11.92			9.3	VB	12.5	R		18	8	5			HIN
1964 09 12.8			9.3		16	R		50	3	2			VIN
1964 09 12.9			9.8		10	B			4				ALC
1964 09 12.96			9.5	VB	10.5	B		25	8	3			BR002
1964 09 13.87			9.3		10.5	B		25	4	3			BR002
1964 09 14.94			9.7	VB	12.5	R		18	5	5			HIN
1964 09 15.85			9.5		10.5	B		25	4	3			BR002
1964 09 16.83			9.0		10.5	B		25	3	5			BR002
1964 09 17.83			9.3		10.5	B		25	3	4			BR002
1964 09 17.86			9.5	VB	12.5	R		18	4	3			HIN
1964 09 18.83			9.5		10.5	B		25	6	4			BR002
1964 09 24.83			10.5		10.5	B		25	5	3			BR002
1964 09 26.81			10 :		15	L		35	5	3			MIL01
1964 09 26.90			10.1	VB	12.5	R		18	3	3			HIN
1964 09 28.79			9.1	VB	10.5	B		25	6	4			BR002
1964 09 28.82			9.5		10	B			6	4			ALC
1964 09 29.80			9.2	VB	10.5	B		25	6	4			BR002
1964 09 29.83			9.5		10	B			6	2			ALC
1964 09 30.8			9.8		10	B				5			ALC
1964 09 30.80			9.0	VB	8.0	B		10	6	4			BR002
1964 10 01			9.5:		16	R		50	3	3			VIN
1964 10 01.80			9.2		8.0	B		10	8	4			BR002
1964 10 02.8			10.0		10	B			5	3			ALC
1964 10 02.80			9.5		8.0	B		10	6	4			BR002

Comet C/1964 P1 (Everhart) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1964 10 03.8			10.3		10	B			5	3			ALC
1964 10 03.80			9.5:		8.0	B		10	6	4			BR002
1964 10 07.80			9.8	VB	8.0	B		10	4	3			BR002
1964 10 07.80			10.5	VB	10.5	B		25	4	3			BR002
1964 10 08.80			9.7	VB	8.0	B		10	4	3			BR002
1964 10 08.80			10.4	VB	10.5	B		25	4	3			BR002
1964 10 10.80			9.9	VB	8.0	B		10	4	3			BR002
1964 10 10.80			10.5	VB	10.5	B		25	4	3			BR002
1964 10 13.80			10.7:		21.5	L		47	4	3			BR002
1964 10 27.85			11.1		21.5	L		47	5	3			BR002
1964 11 07.79			11.5		21.5	L		47	3	3			BR002

Comet C/1966 P1 (Kilston)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1966 08 13.94			9.7	S	10.5	B		25	1	6			ALC
1966 08 14.00			9.5	S	8.0	B		11					ALC
1966 08 14.92			9.1	S	8.0	B		11	2	6			ALC
1966 08 14.97			10.6	HS	25	R		70					M0001
1966 08 15.92			10.7	HS	8.0	B		11	2	6			ALC
1966 08 17.89			10.6	HS	8.0	B		11	2				ALC
1966 08 18.94			9.9	HS	8.0	B		11	2.5				ALC
1966 08 19.92			10.5	HS	16	L		75	1.5	4			LEM
1966 08 19.94					8.0	B		11	2.5				ALC
1966 08 20.94			9.3	HS	16	L		75	2.0	3			LEM
1966 08 21.94			9.6	HS	16	L		75	2.0	6			LEM
1966 08 23.88			9.7	HS	8.0	B		11					ALC
1966 08 23.94			9.5	S	10	R		30	2.5	5			HEG
1966 08 24.92			9.8	HS	10	R		30	4	5			HEG
1966 08 24.98			9.7	HS	8.0	B		11	2.5				ALC
1966 09 02.86			10.0	HS	8.0	B		11	2.5				ALC
1966 09 04.86			10.8	HS	16	L		75	3	3			LEM
1966 09 04.89			11.7	HS	8.0	B		11	2	6			ALC
1966 09 05.86			10.1	HS	8.0	B		11					ALC
1966 09 05.86			10.9	HS	16	L		75	2.5	3			LEM
1966 09 06.86			10.3	HS	8.0	B		11					ALC
1966 09 07.88			9.5	HS	16	L		75	3				LEM
1966 09 08.86			8.9	HS	8.0	B		11	1				ALC
1966 09 12.86			9.7	HS	22	L		70	0.5	6			GAI
1966 09 12.86			10.7	HS	16	L		75	2				LEM
1966 09 12.88			10.6	HS	8.0	B		11	3	6			ALC
1966 09 12.94			10.1	HS	10	R		30	3.5	4			HEG
1966 09 13.88			10.5	HS	10	R		30	4.5	5			HEG
1966 09 15.84			10.5	HS	16	L		75	2				LEM
1966 09 15.85			9.4	HS	22	L		70	0.5	7			GAI
1966 09 15.89			10.5	HS	8.0	B		11	3				ALC
1966 09 15.89			11.3	HS	10	R		30	3.5		0.05	120	HEG
1966 09 17.83			11.3	HS	16	L		75	2	3			LEM
1966 09 19.87			11.0	HS	22	L		70					GAI
1966 09 19.88			11.4	HS	16	L		75	3	3			LEM
1966 09 20.85			11.1	HS	22	L		70					GAI
1966 09 20.88			11.3	HS	16	L		75	3				LEM
1966 09 21.83			10.0	HS	16	L		75	3				LEM
1966 10 01.81			11.1	HS	22	L		70	0.5	6			GAI
1966 10 04.84			10.8	HS	16	L		75	2.5	4			LEM
1966 10 08.83			10.3	HS	20	L		33	2.3	5			PAN
1966 10 08.86			11.3	HS	16	L		75	1.5	5			LEM
1966 10 11.84			10.7	HS	16	L		75	2	3			LEM
1966 10 11.84			10.8	HS	20	L		33	5	3			PAN
1966 10 15.85			10.4	HS	22	L		70	0.5				GAI
1966 10 15.89			10.7	HS	16	L		75	2	3			LEM
1966 10 17.79			10.9	HS	22	L		70	0.3				GAI
1966 10 17.82			10.8	HS	32	R		80	3	5			HEG
1966 10 19.81			10.4	HS	16	L		75	2	5			LEM
1966 10 20.81			10.2	HS	16	L		75		3			LEM

Comet C/1966 P2 (Barbon)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1966 08 20.05			11 :		15	L			4	2			HEN
1966 08 26.07			11.5:		21	L		40	4.5	2			BR002

Comet C/1966 R1 (Ikeya-Everhart)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1966 09 12.82			8.5		25	L		30	4	4			MIL01
1966 09 13.85			8 :		7	R		25	6				RID
1966 09 15.87			8.6	S	10	R		30	12	3			HEG

Comet C/1966 T1 (Rudnicki)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1966 11 12.53			10.5:		20	L		44	5	3			GIL
1966 11 14.89			10.5:		25	L		40					MIL01
1966 11 14.90			10.5	VB	20	L		28	3	4			BR002
1966 11 16.92			10.7:	UP	30	L		37	3	3			BR002
1966 12 02.83			9.0		8.0	B		10	7	2			BR002
1966 12 02.83			9.5		30	L		54	5	2			BR002
1966 12 03.75			8.6	S	20	L		33	6	3			PAN
1966 12 04			9.5						5.5	4			HEN
1966 12 04.43			7.2	S	20	L		44	5	3			GIL
1966 12 06.80			8.8	S	20	L		33	5	3			PAN
1966 12 07.43			8.3	S	15	L		50	2	3			BAL01
1966 12 08.77			9.2	HS	22	L		34	2.3	2			GAI
1966 12 10.78			8.1	S	10	R		30	18	3			HEG
1966 12 11.8			7.5		5	R		7	10				HEN
1966 12 20.75			7.8	S	10	R		30	6	3			HEG
1966 12 31.72			5.8	Y	8.0	B		10	6	5			BR002

Comet C/1967 Y1 (Ikeya-Seki)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1968 01 07.25			9.7	HS	21.5	L		35	2.0	3			GAI
1968 01 10.26			9.0	S	21.5	L		35	2.0	1			GAI
1968 01 11.24			9.0		8.0	B		10	2.7	4			BR002
1968 01 17.27			8.6	S	25.5	L		36	0.5	4			MIL01
1968 01 24.26			8.8	S	20	L		30	5	2			PAN
1968 01 25.55			8.6	AC	11	R		20	1.5	2			SIM
1968 01 28.24			8.7		12	R		20	4				BRI02
1968 01 29.25			8.7	HS	20	L		30	3	4			PAN
1968 01 31.56			8.5	S	11	R		20	2.1	2			SIM
1968 02 01.23			8.7	S	20	L		30	4	4			PAN
1968 02 02.22			8.6		21.5	L		35	3.3	4			GAI
1968 02 03.23			7.9	AC	8.0	B		10	3	4			BR002
1968 02 04.14			7.9		12	R		20	4	1			BRI02
1968 02 04.21			7.5:		45.5	L		190	0.8	6			DOH
1968 02 04.21			7.8	AC	3.5	B		7	2.5	4			BR002
1968 02 04.25			7.3	S	8.0	B		11	6	5			PAN
1968 02 05.24			7.9	S	8.0	B		11	7	5			PAN
1968 02 18.20			7.5	UX	5.0	B		10		3			NEL
1968 02 20.18			7.3	UX	5.0	B		10		3			NEL
1968 02 20.23			7.8	S	8.0	B		11	9	3			PAN
1968 02 22.51			7.3	S	11	R		14	3	2			SIM
1968 02 23.99			8.3	S	21.5	L		35	3	4			GAI
1968 02 24.16			6.5	UX	5.0	B		10		3			NEL
1968 02 24.21			7.2:		12	R		20	5				BRI02
1968 02 24.23			7.2	S	8.0	B		11	8	4			PAN
1968 02 24.98			7.2:		12	R		20	5				BRI02
1968 02 25.16			7 :		21.5	L		110	1.5	5			DOH
1968 02 25.21			6.5	UX	5.0	B		10		5			NEL
1968 02 25.23			7.8	S	8.0	B		11	8	5			PAN
1968 02 25.98			7.3	S	21.5	L		35	3.5				GAI
1968 02 26.09			7.6		21.5	L		28	3	5			BR002
1968 02 26.13			6.3	S	5.0	B		10		5		90	NEL

Comet C/1967 Y1 (Ikeya-Seki) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1968 02 27.10			6.3	S	5.0	B		10		3		90	NEL
1968 02 28.13			6.5	S	5.0	B		10		3		90	NEL
1968 02 29.13			7.8		12	R		20	1.5		0.08	270	BRI02
1968 03 04.13			6.6	UL	5.0	B		10	15	3	2	85	NEL
1968 03 04.92			8.2	S	21.5	L		35	3	4			GAI
1968 03 05.15			8.2	S	20	L		30	6	4			PAN
1968 03 06.15			8.4	S	20	L		30	4	4			PAN
1968 03 07.16			8.0	S	20	L		30	7	5			PAN
1968 03 08.17			7	:	21.5	L		110	2	6			DOH
1968 03 09.17			6.9	S	5.0	B		10		4		85	NEL
1968 03 09.96			7.6	S	21.5	L		35	2				GAI
1968 03 12.13			7.2	S	50.1	B		10					NEL
1968 03 13.93			7.4	S	8.0	B		11	7	4			PAN
1968 03 14.84			7.7	AA	8.0	B		11	6	2			PAN
1968 03 15.87			9.0	S	21.5	L		35	2				GAI
1968 03 16.04			8.3		12	R		20			0.15	230	BRI02
1968 03 17.84			7.8		8.0	B		11	4				BRI02
1968 03 17.84			8.0	S	20	L		30	6	2			PAN
1968 03 17.96			7.3	S	5.0	B		10		3			NEL
1968 03 18.82			8.1	S	20	L		30	4.5	5			PAN
1968 03 18.89			8.4	S	21.5	L		35	3	5		230	GAI
1968 03 18.91			7.0	S	6.5	R		20	3	6			LEM
1968 03 18.92			8.6	S	25.5	L		35	3	6			MIL01
1968 03 20.75			7.9	S	21.5	L		35	4	6			GAI
1968 03 20.83			8.5	S	20	L		30	6	5	0.17	230	PAN
1968 03 20.85			8	:	16	L		90	4	2			LEM
1968 03 20.86			8.0		8.0	B		11	5			220	BRI02
1968 03 20.95			7.5	S	3.5	B		7	11	3			HEG
1968 03 21.95			7.6	S	21.5	L		35	4.5	6	0.12	200	GAI
1968 03 22.07			8.0	AC	5	R		10	3	3			ISL
1968 03 23.30			7.5	S	11	R		55	3	3			SIM
1968 03 24.87			8.6	S	6.5	R		35	5	3			HEG
1968 03 24.92			8.2	S	21.5	L		35	7	6		250	GAI
1968 03 25.82			8.4	S	16	L		90	3	6			LEM
1968 03 25.90			7.7	S	5.0	B		10		3			NEL
1968 03 25.91			7.9	S	21.5	L		35	5	4	0.17	240	GAI
1968 03 25.92			8.2	S	6.5	R		35	5	3			HEG
1968 03 25.92			8.5	S	20	L		30	6	5		215	PAN
1968 03 26.82			8.7	S	16	L		90	3.5	6	0.13		LEM
1968 03 26.94			8.4	S	21.5	L		35	5	5		245	GAI
1968 03 26.96			8.8		25.5	L		36	3	6			MIL01
1968 03 27.22			8.8	NS	11	R		19	2	0			SIM
1968 03 27.83			8.2	S	21.5	L		100	3.5	5	0.15		LEM
1968 03 27.86			8.3	S	8.0	B		11	9	4			PAN
1968 03 27.89			8.6		8.0	B		11	5			220	BRI02
1968 03 27.92			8.3	S	21.5	L		35	4.3	4		240	GAI
1968 03 29.90			7.0	S	21.5	L		100	3	4			LEM
1968 03 31.02			7.7	S	21.5	L		35	4.5	3	0.17	210	GAI
1968 04 01.85			7.8	S	21.5	L		100	3	5			LEM
1968 04 02.96			8.3	S	8.0	B		11	6	4	0.2	130	PAN
1968 04 03.87			8.8		8.0	B		11	3			120	BRI02
1968 04 03.88			8.3	S	8.0	B		11	8	2			PAN
1968 04 04.95			8.3	S	8.0	B		11	6	2			PAN
1968 04 04.97			8.4	S	21.5	L		35	2.7	4			GAI
1968 04 05.85			8.3	S	21.5	L		100	3	4	0.2	90	LEM
1968 04 06.88			8.5	S	20	L		30	5	2			PAN
1968 04 06.90			8.9	S	21.5	L		100	2.5				LEM
1968 04 08.86			8.9	S	21.5	L		100	3	4			LEM
1968 04 18.93			8.8	S	21.5	L		100	2.5	6			LEM
1968 04 21.02			8.9		12	R		20	2				BRI02
1968 04 21.89			8.3	S	15	L		20	7	2			PAN
1968 04 21.94			8.7	S	21.5	L		35	3.5				GAI
1968 04 21.95			9.9	S	21.5	L		100	2	5			LEM
1968 04 23.88			8.4	S	21.5	L		100	2	5			LEM
1968 04 23.89			9.6	HS	15	L		20	6	2			PAN

Comet C/1967 Y1 (Ikeya-Seki) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1968 04 23.9			8.8		12	R		20					BRI02
1968 04 24.90			9.8	HS	21.5	L		100	2	5			LEM
1968 04 24.96			9.2	VB	8.0	B		11	6	3			PAN
1968 04 25.97			9.6	HS	21.5	L		35	2	2			GAI
1968 05 04.04			9.0		12	R		20					BRI02
1968 05 05.92			8.9	S	20	L		30	4	3			PAN
1968 05 13.97			9.8	HS	21.5	L		35	3	2			GAI
1968 05 17.96			9.8	HS	21.5	L		100	1.5	2			LEM
1968 05 18.99			11.2	HS	21.5	L		35	1.3	3			GAI
1968 05 27.99			10.8	HS	21.5	L		100	3.5	2			LEM
1968 05 31.93			9.5:		50	L		60		2			TAY02

Comet C/1968 H1 (Tago-Honda-Yamamoto)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1968 05 12.10			8.8	S	21.5	L		35	3	1			GAI
1968 05 12.91			9.0:	UL	50	L		60	3	2			TAY02
1968 05 13.92			8.4	S	15	L		20	3	2			PAN
1968 05 13.99			8.6	S	21.5	L		35	4	2			GAI
1968 05 16.92			8.8	S	21.5	L		100	3	2			LEM
1968 05 17.93			8.6	S	21.5	L		100	2.5	3			LEM
1968 05 18.94			8.7	S	15	L		20	4	2			PAN
1968 05 19.00			9.7	HS	21.5	L		35	3	4			GAI
1968 05 25.94			8.8	S	21.5	L		100	2	2			LEM
1968 05 27.97			8.9	S	21.5	L		100	2	2			LEM

Comet C/1968 L1 (Whitaker-Thomas)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1968 06 21.00			10.0:	UL	25	L		120	5	2			MIL01
1968 06 30.00			10.3:	UL	32	R	18	80	1.5	2			ALL01
1968 06 30.01			11.8	HS	21.5	L		90	6	2			LEM
1968 06 30.02			10.2	V	15	L		20	8	1			PAN
1968 06 30.05			10.0	AC	8.0	B		10	5	2			BR002
1968 06 30.05			10.5	AC	21.5	L		28	5	2			BR002
1968 07 04.00		P	9.8	UL	15	R	5						WAT
1968 07 04.01			10.7	V	15	L		20	14	1			PAN
1968 08 22.94		P	15.0	UL	15	R	5		0.5	1			WAT

Comet C/1968 N1 (Honda)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1968 07 29.03		P	7.0	UL	15	R	5						WAT
1968 08 02.00			7.2		12.5	R		20	2				BRI02
1968 08 08.00			8.1		12.5	R		20	2				BRI02
1968 08 09.99			7.2		12.5	R		20	3				BRI02
1968 08 10.91			7.8		12.5	R		20	3				BRI02
1968 08 11.90			6.9		12.5	R		20					BRI02
1968 08 11.94			7.5	S	7.0	B		10	3				ISL
1968 08 11.99			7.2	UL	8.0	B		11	8	4			PAN
1968 08 14.04			6.4	S	7.0	B		10	4	5	0.17	270	ISL
1968 08 14.05			6.3	S	5	R		10	4	4			ISL
1968 08 14.05			7.0	S	6	R		29	3	3			ISL
1968 08 14.92			6.8	S	21.5	L		50	3.5	6			LEM
1968 08 14.92			6.9	UL	8.0	B		11	9				PAN
1968 08 14.93			6.7		8.0	B		11	5				BRI02
1968 08 15.02			6.3	US	7.0	B		10	4	6			ISL
1968 08 15.90			6.3		21.5	L		50	3.5	6	0.08		LEM
1968 08 15.92			7.4		8.0	B		11	4	5			BRI02
1968 08 16.00			6.4	US	7.0	B		10	3	4			ISL
1968 08 16.00			7.3	US	6	R		29					ISL
1968 08 16.91			7.2	S	21.5	L		50	3.5	7	0.12		LEM
1968 08 17.06			7.1	S	7.0	B		10	4	4			ISL
1968 08 17.92			7.7	HS	21.5	L		50	3.5	7	0.25		LEM
1968 08 18.89			6.8	UL	8.0	B		11	9	5			PAN

Comet C/1968 N1 (Honda) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1968 08 18.89			7.1		8.0	B		11					BRI02
1968 08 18.90			8.2	S	21.5	L		50	4	7			LEM
1968 08 18.96			5.9	S	5.0	B		10		4			NEL
1968 08 18.98			6.5	S	7.0	B		10	5		0.5	230	ISL
1968 08 20.94			5.8		5.0	B		10		6			NEL
1968 08 21.98			6.6	UL	8.0	B		11	9	5			PAN
1968 08 22.94			6.7		8.0	B		11	3		0.1	280	BRI02
1968 08 22.96			8.3	S	21.5	L		50	3.5	7	0.17		LEM
1968 08 23			5.9	S	11	L		38	4	6			MO003
1968 08 23.00			5.9		7.5	R		64	4	5			DOH
1968 08 23.88			7.5	S	21.5	L		50	3	7	0.17		LEM
1968 08 24.94			7.6	S	21.5	L		50	3	6	0.17		LEM
1968 08 25.11			5.5	AC	5.0	B		7	3	0	0.01		SIM
1968 08 25.88			6.2	S	21.5	L		50	3.5	6	0.17		LEM
1968 08 26.90			7.0		8.0	B		11	3		0.5	220	BRI02
1968 08 27.00			5.5		3.8	B		4	4	6			DOH
1968 08 27.86			7.8	S	21.5	L		50	3.5	6	0.3		LEM
1968 08 29.90			6.5	UL	8.0	B		11	15	5			PAN
1968 08 30.87			6.7	S	21.5	L		50	5	6	0.3		LEM
1968 08 30.88			6.6		8.0	B		11	7	5			BRI02
1968 08 30.93			6.5	S	21.5	L		35	6	5	0.3	120	GAI
1968 08 30.95			5.6		3.8	B		4					DOH
1968 08 31.90		S	5.1	S	21.5	L		50	2.5	6	0.42		LEM
1968 08 31.91			5.5		3.8	B		4	4.5	6			DOH
1968 08 31.91			6.0	S	21.5	L		35	5	5	0.3	110	GAI
1968 09 01.00			5.3		16	R		50		6			VIN
1968 09 01.87			6.2		8.0	B		11		5			BRI02
1968 09 01.87			6.5	UL	8.0	B		11	11	6			PAN
1968 09 02.90			6.7		8.0	B		11					BRI02
1968 09 02.91			5.5		3.8	B		4	4.5	6			DOH
1968 09 02.93			6.5	S	21.5	L		35	5	5			GAI
1968 09 03.88			5.5		3.8	B		4					DOH
1968 09 03.88			7.0	S	21.5	L		50	6	7	0.2		LEM
1968 09 03.90			6.7	S	21.5	L		35	4.5	5			GAI
1968 09 03.91			6.8	UL	8.0	B		11	11	5			PAN
1968 09 04.86			6.0	S	21.5	L		50	2	7	0.3		LEM
1968 09 04.93			5.7	S	3.8	B		4		7			DOH
1968 09 06.88			6.5		8.0	B		11					BRI02
1968 09 07.93			7.5	S	21.5	L		50	3	6			LEM
1968 09 09.88			6.5		8.0	B		11					BRI02
1968 09 09.89			7.6	S	21.5	L		50	2	6			LEM
1968 09 10.84			7.0	S	21.5	L		50	2.5	7	0.17		LEM
1968 09 12.83			6.8		8.0	B		11	4	5			BRI02
1968 09 12.85			6.0		2.5	B		8	6				LARO3
1968 09 12.89			7.0	S	21.5	L		35	4	5			GAI
1968 09 13.03			6.9	UX	8.0	B		11	8	5			PAN
1968 09 13.87			7.1	S	21.5	L		35	4	5			GAI
1968 09 15.87			6.5		2.5	B		8					LARO3
1968 09 16.97			8.5		21.5	L		50	3.5	5			LEM
1968 09 17.82			7.3	S	8.0	B		11	6	5			PAN
1968 09 18.85			8.3		21.5	L		50	4	4	0.13		LEM
1968 09 20.98			7.5		21.5	L		35	4	5			GAI
1968 09 21.83			8.5		21.5	L		50	2.5	7	0.1		LEM
1968 09 22.84			8.0	S	21.5	L		50	3.5	6			LEM
1968 09 23.82			8.3	S	8.0	B		11	7	3			PAN
1968 09 23.93			7.9	S	21.5	L		35	4	5			GAI
1968 09 24.81			9.1	S	21.5	L		50	3.5	6	0.12		LEM
1968 09 24.89			8.3	S	8.0	B		11	7	3			PAN
1968 09 26.84			7.8		12.5	R		20					BRI02
1968 09 27.83			8.8	S	8.0	B		11	9	2			PAN
1968 09 27.85			8.6		21.5	L		35	3	4			GAI
1968 09 27.85			8.6	S	21.5	L		50	2.5	6	0.1		LEM
1968 09 29.85			8.6	S	21.5	L		50	2.5	5			LEM
1968 09 29.88			9.0	S	8.0	B		11	7	2			PAN
1968 10 10.79			9.0	S	21.5	L		50	2.5	4			LEM

Comet C/1968 N1 (Honda) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1968 10 12.81			8.3		12.5	R		20	2	2			BRI02
1968 10 12.85			8.5	S	21.5	L		50	3	2			LEM
1968 10 14.78			8.5	S	21.5	L		50	3	4			LEM
1968 10 16.80			9.0	UX	21.5	L		50	3	2			LEM
1968 10 19.80			9.9	S	21.5	L		50	3.5	3			LEM

Comet C/1968 Q1 (Bally-Clayton)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1968 09 13.85			10.8	HS	22	L		35	1.0	3			GAI
1968 09 20.96			11.7	HS	22	L		35	2	4			GAI
1968 09 21.86			11.8	HS	22	L		50	2.5	3			LEM
1968 09 23.83			11.8	HS	22	L		50	2.5	2			LEM
1968 09 23.86			11.2	HS	22	L		35	1.5	3			GAI
1968 09 24.85			12.3	HS	22	L		50	2	1			LEM
1968 09 27.84			12.0:	HS	22	L		35	1.5	3			GAI

Comet C/1968 Q2 (Honda)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1968 09 09.38			9.7	AC	21	L		40	1.5	2			SIM
1968 11 13.40			9.5		15	L				3			MCM

Comet C/1968 U1 (Wild)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1968 10 28.97		P	14.0		15	R	5		1	2			WAT

Comet C/1968 Y1 (Thomas)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1969 01 08.78		P	12.5		15	R	5		1	7	0.03	100	WAT
1969 01 08.87		P	12.0		15	R	5						WAT
1969 01 14.79		P	13.0		15	R	5						WAT
1969 03 07.84		P	13.3		15	R	5						WAT
1969 04 04.88		P	13.8		15	R	5						WAT
1969 05 18.98		P	14.5		15	R	5		1	6	0.05	0	WAT

Comet C/1969 O1 (Kohoutek)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1969 08 19.92		P	14.0	UL	15	R	5						WAT
1969 11 05.80			11.5:	UL	15	L		50	1	3			HEN
1969 11 08.80			11.5:	UL	15	L		50	1	3			HEN
1970 02 14.21			10.9	HS	21.5	L		35	2	4			GAI
1970 02 24.81			9.8	HS	15	L		20	4.5	3			PAN
1970 03 02.85			10.1	HS	21.5	L		35	2	2			GAI
1970 03 03.82			9.7	HS	21.5	L		35	1.5	4			GAI
1970 03 05.85			8.4	S	21.5	L		35	1.3	4			GAI
1970 03 06.86			9.9	HS	21.5	L		35	1.3	2	0.03	290	GAI
1970 03 07.87			10.1	HS	21.5	L		35	1	2		280	GAI
1970 03 26.91			10.6	HS	21.5	L		35	1	5	0.02	320	GAI
1970 03 28.16			10.7	HS	21.5	L		35	1	2			GAI
1970 04 01.90			10.5:	UL	22	L		35	0.9	5	0.03	350	GAI
1970 04 23.90			9.8	HS	22	L		35	0.8	4		0	GAI
1970 04 29.91			10.9	HS	22	L		200	2	4		320	GAI
1970 05 02.95			11.5:	UL	22	L		200		4			GAI

Comet C/1969 P1 (Fujikawa)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1969 09 20.18			8.6	S	15	L		20	3	4			PAN
1969 09 23.17			8.5	S	15	L		20	3	5			PAN
1969 09 25.15			8.5	S	16	R		50	1.5	3			VIN
1969 09 28.19			7.8	UX	8.0	B		11	6	4			PAN

Comet C/1969 P1 (Fujikawa) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1969 09 29.19			8.0	UX	8.0	B		11	5	5			PAN
1969 09 30.19			8.0	UX	8.0	B		11	4	5			PAN

Comet C/1969 Y1 (Bennett)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1969 12 28.82			8.5	S						2			BEN
1969 12 29.76			8.5	S	25	L			2	3			BEN
1969 12 31.47			9.0		15	L		30		3			MAT01
1970 01 01.85			9.0										BEN
1970 01 02.87			9.2										BEN
1970 01 05.43			7.5:		20	L		40		3			JON01
1970 01 07.48			9.0:		15	L		30		3			MAT01
1970 01 08.79			8.0		12	B		20					BEN
1970 01 10.47			9.3	S	20	L		40	3	3			JON01
1970 01 10.79			8.0		12	B		20					BEN
1970 01 12			7.5		5.0	B		10		3			CLA
1970 01 17.75			7.5		12	B		20					BEN
1970 01 25.42			6.6		5.0	B		7		4	0.2		THO
1970 01 30			6.8		5.0	B		10		4			CLA
1970 01 31.5			5.7		5.0	B		10					EDE
1970 01 31.77			7.0		12	B		20			0.25	113	BEN
1970 02 01.39			6.7		5.0	B		7		3			ALL
1970 02 01.5			5.5		5.0	B		10					EDE
1970 02 03.37			6.7		5.0	B		7		6			ALL
1970 02 03.5			5.3		5.0	B		10					EDE
1970 02 03.83			6.8		12	B		20			0.3		BEN
1970 02 04.46			6.3		5.0	B		7		6	0.2		THO
1970 02 05.08			5.5		3.5	B		12			1		SLA02
1970 02 05.79			5.3		5.0	B		7		3			REE02
1970 02 07.78			5.9		5.0	B		7		4	0.7		REE02
1970 02 08.73			6.0	UM	3.0	B		8	2		1		NIG
1970 02 08.76			5.7		5.0	B		7			0.5		REE02
1970 02 09.43			5.8		5.0	B		7			0.25		THO
1970 02 10.45			5.5	S	5.0	B		7		8			ALL
1970 02 10.5			4.5		5.0	B		10	2		0.3	135	EDE
1970 02 11.42			5.3	S	5.0	B		7		7	1		ALL
1970 02 11.77			5.8		12	B		20			1		BEN
1970 02 12.40			5.5	SP	5.0	B		7					MCM
1970 02 12.42			5.5		5.0	B		7			0.6		THO
1970 02 13.40			5.3	SP	5.0	B		7					MCM
1970 02 13.42			5.4		10	L		25					THO
1970 02 13.73			5.3	SP	3.0	B		8	1.5	5	0.5		NIG
1970 02 14.41			5.3	SP	5.0	B		7					MCM
1970 02 14.50			5.3	SP	5.0	B		7			0.5	133	MAT01
1970 02 15.10			4.7	SP	3.5	B		12		6	1		SLA02
1970 02 15.39			5.3	SP	5.0	B		7					MCM
1970 02 15.42			4.6	SP	5.0	B		7		7	1		ALL
1970 02 17.21			4.3	SP	3.5	B		12			1	154	SLA02
1970 02 17.42			4.4	SP	5.0	B		7		8			ALL
1970 02 17.72			4.4	SP	7	M					0.15		NIG
1970 02 18.8			5.0		5.0	B		7					REE02
1970 02 19.74			4.3		0.0	E		1			0.5		REE02
1970 02 20.73			5.0	SP	5.0	B		7		7			REE02
1970 02 21			4.8		0.0	E		1			2		CLA
1970 02 21.41			4.9	SP	5.0	B		7					MAT01
1970 02 22.39			4.2	SP	5.0	B		7		7	2		ALL
1970 02 22.5			3.8		5.0	B		10			0.75	160	EDE
1970 02 22.74			4.4		5.0	B		7		6			REE02
1970 02 23			4.6		0.0	E		1			3		CLA
1970 02 23.37			4.0	SP	5.0	B		7		7	2.5		ALL
1970 02 24.39			4.0	SP	5.0	B		7		7	2.5		ALL
1970 02 25.39			4.0	SP	15	L		23		7	2.5		ALL
1970 02 25.74			4.0		0.0	E		1					REE02
1970 02 27			4.2		0.0	E		1			5		CLA

Comet C/1969 Y1 (Bennett) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1970 02 27.5			3.5		5.0	B		10					EDE
1970 02 27.73			4.0		0.0	E		1					BEN
1970 03 01.34			3.9	SP	5.0	B		7		7	4		ALL
1970 03 01.40			3.0		5.0	B		7			0.5		THO
1970 03 02.36			3.6	SP	5.0	B		7		5	3		ALL
1970 03 03.25			2.8		3.5	B		12			3		SLA02
1970 03 03.34			3.6	SP	5.0	B		7					ALL
1970 03 03.34			3.9		5.0	B		10			1.5		HIG
1970 03 05.33			3.8		5.0	B		7			1.5		HIG
1970 03 06			2.9		0.0	E		1			7		CLA
1970 03 07			1.0		0.0	E		1			3		BUH
1970 03 07.8			2.3		5.0	B		10			3	192	EDE
1970 03 08			0.8		0.0	E		1	20		3		BUH
1970 03 08			2.4		0.0	E		1			7		CLA
1970 03 09			0.7		0.0	E		1			4		BUH
1970 03 10			2.0		0.0	E		1			9		CLA
1970 03 10.77			2.3	SP	5.0	B		7		8	4	210	JON01
1970 03 11			1.9		0.0	E		1			10		CLA
1970 03 11.12			0.6	SP	0.0	E		1			5		SLA02
1970 03 12			2.5		5.0	B		10	6	7	6		PAG
1970 03 12.69			2.2	SP	5.0	B		7			1		ALL
1970 03 13			0.5		0.0	E		1			7		BUH
1970 03 13			1.7		0.0	E		1			12		CLA
1970 03 13.78			1.7	SP	5.0	B		7			4		MAT01
1970 03 14			2.3		5.0	B		10	6	7	7		PAG
1970 03 15			1.5		0.0	E		1			12		CLA
1970 03 16			1.3		0.0	E		1			13		CLA
1970 03 19			1.8		5.0	B		10	6		9		PAG
1970 03 20			1.3		0.0	E		1			13		CLA
1970 03 20.8			1.3		0.0	E		1			11		BEN
1970 03 21.69			1.8		5.0	B		7			8		ALL
1970 03 22.8			1.0		0.0	E		1					BEN
1970 03 23			0.0		0.0	E		1			5		BUH
1970 03 23			1.2		0.0	E		1			10		CLA
1970 03 23.69			1.6		5.0	B		7			6		ALL
1970 03 25.45			1.6	AT	5.0	B		7	5	6	2.5	225	SIM
1970 03 26.19			2.5	S	8.0	B		11	3.5	7	4	260	PAN
1970 03 26.2			3.0		5.0	B		7					MAR16
1970 03 27.18			1.5		0.0	E		1	3	7	3	260	YOU02
1970 03 27.18			2	: SP	5.0	B		7	8	6	3		GAI
1970 03 27.19			1.3	SP	0.0	E		1	8	6	3	260	BRI02
1970 03 27.19			1.5	SP	4.0	B		8		8	4	255	BUR
1970 03 27.19			2.0	S	8.0	B		11	4			260	PAN
1970 03 27.2			0.5		5.0	B		10					HEN01
1970 03 27.2			1.0		0.0	E		1					SUT01
1970 03 27.2			2.0	SP	0.0	E		1	5				SMI07
1970 03 27.20			1.0		0.0	E		1		8	2		CUR02
1970 03 27.21			1.2		5.0	B		10	7		3		PIN
1970 03 28			1.1		0.0	E		1			10		CLA
1970 03 28			-0.3		0.0	E		1			11		BUH
1970 03 28.17			1.7		0.0	E		1		7	8		BRO05
1970 03 28.17			2.0		8.0	B		11	5	7	8	265	PAN
1970 03 28.19			1.6		0.0	E		1		7	7		LEM
1970 03 28.19			2.0:	SP	5.0	B		7	7		3		GAI
1970 03 28.2			0.0		0.0	E		1					SMI06
1970 03 28.2			2.0	SP	0.0	E		1	5	6	1.5		SMI07
1970 03 28.20			1.0		3.0	B		6			5		GIN
1970 03 28.24			1.3	SP	0.0	E		1	8	8	3		WHY
1970 03 28.25			1.0		0.0	E		1			2		HEN
1970 03 29.18			1.1	SP	3.0	B		6			6		GIN
1970 03 29.18			1.6		16	L		50	10	7	8		LEM
1970 03 29.2			1.8		0.0	E		1					BEL05
1970 03 29.25			1.0		0.0	E		1			3		HEN
1970 03 30			1.1		0.0	E		1			10		CLA
1970 03 30.15			1.9		0.0	E		1			2		NIL

Comet C/1969 Y1 (Bennett) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1970 03 30.16			1.5		0.0	E		1	3		7.5	298	YOU02
1970 03 30.17			1.5	SP	4.0	B		8		7	5		BUR
1970 03 30.22			1.3	SP	5.0	B		10			8		PAR04
1970 03 31.14			1.1	SP	3.0	B		6			8		GIN
1970 03 31.16			1.0	SP	0.0	E		1	5	7	8	280	MIL01
1970 03 31.16			1.7	SP	0.0	E		1		7	11		PAN
1970 03 31.17			1.5	SP	0.0	E		1	30		6		CUR03
1970 03 31.17			-0.4	SP	0.0	E		1		8			CAU
1970 03 31.18			1.6		16	L		50	10	8	10		LEM
1970 03 31.19			1.6		6.5	R		16	10	8	10		LEM
1970 03 31.2			1.5		0.0	E		1			5		HEN
1970 03 31.2			1.6		0.0	E		1					SUT01
1970 03 31.2			2.5	SP	0.0	E		1	4		2		SMI07
1970 03 31.21			2.0	SP	0.0	E		1		8	3		NEL
1970 03 31.42			1.1	AT	0.0	E		1	5	2	8	270	SIM
1970 04 01.10			2.0		0.0	E		1		8	10		NIG
1970 04 01.13			2.0		0.0	E		1			3		KEN01
1970 04 01.19			1.9		16	L		50	10	8	12		LEM
1970 04 01.19			2.0	SP	5.5	R		27		8	3		NEL
1970 04 01.2			2.0		0.0	E		1					BEL05
1970 04 02			2.5		0.0	E		1					FOS
1970 04 02.1			1.0		0.0	E		1					SUT01
1970 04 02.1			2.0		0.0	E		1					BEL05
1970 04 02.10			1.3	SP	3.0	B		6			8		GIN
1970 04 02.13			2.4		0.0	E		1		7	8		BRO05
1970 04 02.14			1.9		4.5	B		12			8		OLL
1970 04 02.14			2.3	SP	5.0	B		7	5	8	6		GAI
1970 04 02.15			1.7		5.0	B		7	8		9	270	STU
1970 04 02.15			1.7	SP	8.0	B		11	2		9	275	BRI02
1970 04 02.16			0.5		0.0	E		1			10	280	YOU02
1970 04 02.16			1.8	SP	0.0	E		1		8	12	275	PAN
1970 04 02.16	!		1.5		0.0	E		1			4		ISL
1970 04 02.17			2.0	SP	4.0	B		8		7	7		BUR
1970 04 02.17			2.2	SP	0.0	E		1	30		6		CUR03
1970 04 02.18			1.0	SP	0.0	E		1			12		CAU
1970 04 02.19			0.9		6.5	B		10	9		9		PIN
1970 04 02.19			2.2		16	L		50	10	7	10		LEM
1970 04 02.2			0.9		0.0	E		1					SMI06
1970 04 02.2			1.3		0.0	E		1					WIN01
1970 04 02.2			1.7		0.0	E		1					SCA01
1970 04 02.2			2.0		0.0	E		1			20		HEN
1970 04 03			2.5		0.0	E		1					BEL05
1970 04 03.15			1.5	SP	0.0	E		1			6		WAT05
1970 04 03.18			2.0		16	L		50	10	7	10		LEM
1970 04 03.2			2.3		0.0	E		1					WIN01
1970 04 03.20			2.0	SP	5.5	R		27		8	3		NEL
1970 04 04.10			2.5		0.0	E		1			10		DIN
1970 04 04.14											6	320	BRI02
1970 04 04.14											8	300	STU
1970 04 04.14			2.1	SP	8.0	B		11	2	7	9	280	BRI02
1970 04 04.14			2.3		5.0	B		7			8	270	STU
1970 04 04.15			2.0		0.0	E		1			20		HEN
1970 04 04.17											7		CUR03
1970 04 04.17			1.4	SP	3.0	B		6			9		GIN
1970 04 04.17			2.0		16	L		50	12		12		LEM
1970 04 04.17			2.4	SP	0.0	E		1			12		CUR03
1970 04 04.17			2.4	SP	5.0	B		7	3.5		7		GAI
1970 04 04.2			1.5		0.0	E		1					SMI06
1970 04 04.2			2.0		0.0	E		1					WIN01
1970 04 04.38			2.0	AT	0.0	E		1			8	270	SIM
1970 04 05.06			1.5	SP	3.0	B		6			10		GIN
1970 04 05.10			0.5		0.0	E		1	3		10	300	YOU02
1970 04 05.10			2.4	SP	8.0	B		11			5.5	290	BRI02
1970 04 05.14			2.4	SP	5.0	B		7	3		7		GAI
1970 04 05.16			2.3	SP	12	B		20	8		5		MIL01

Comet C/1969 Y1 (Bennett) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1970 04 05.16			2.6	SP	4.0	B		8		8	5.5		BUR
1970 04 05.18			2.6	SP	0.0	E		1	5	7	8	300	PAN
1970 04 05.2			2.8		0.0	E		1					DEA01
1970 04 05.2			3.4		0.0	E		1					WIN01
1970 04 05.20			2.5	SP	5.0	B		20			8		HAR07
1970 04 05.21			1.5	SP	0.0	E		1	15		1.5		DOH
1970 04 06.11			2.7		0.0	E		1					NIG
1970 04 06.17			2.0	SP	0.0	E		1		8	9		NEL
1970 04 07.09			2.8	SP	8.0	B		11	3	6	4.5	300	BRI02
1970 04 07.1			2.0		0.0	E		1			20		HEN
1970 04 07.1			3.1		0.0	E		1					WIN01
1970 04 07.12			2.3	SP	0.0	E		1		5	8	280	PAN
1970 04 07.13			2.8	SP	5.0	B		7	4.5	6	6		GAI
1970 04 07.15			2.3	SP	0.0	E		1	10	7	9.5		DOH
1970 04 07.15			2.5		16	L		50	10	5	8		LEM
1970 04 07.2			2.2		0.0	E		1					SCA01
1970 04 07.2			2.3		0.0	E		1					SMI06
1970 04 07.2			2.6		0.0	E		1					WIN01
1970 04 07.40			2.4	AT	0.0	E		1	5	1	10	280	SIM
1970 04 08.09	!		2.9	SP	8.0	B		11			5.5	300	BRI02
1970 04 08.15			1.5		0.0	E		1	3		7.5	300	YOU02
1970 04 08.17			2.6	SP	5.5	R		27		7	8		NEL
1970 04 08.2			2.9		0.0	E		1					WIN01
1970 04 09.1			2.0		3.0	B		10					FOU
1970 04 09.44			3.0	AT	0.0	E		1			4		SIM
1970 04 10.16			2.0		5	R		30	15		8		MAD
1970 04 10.18			3.5		6.5	R		16	8	5	8		LEM
1970 04 11.16			2.7	SP	3.8	B		4		7	6		DOH
1970 04 11.17			3.0		6.5	B		10	6		6		PIN
1970 04 11.19			2.6	SP	0.0	E		1					CAU
1970 04 12.16			3.5	SP	0.0	E		1			6		NEL
1970 04 13.88			4.0		5.0	B		7	4		2		STU
1970 04 14.12			3.6	SP	8.0	B		11	4	7	4.5	300	BRI02
1970 04 14.18			3.8	SP	5.5	R		27		7	7		NEL
1970 04 14.2			4.0		4.0	B		8					WIN01
1970 04 15.02			3.2		0.0	E		1			5		FRY
1970 04 15.06			2.5		5	R		55					MAD
1970 04 16.18			4.0	SP	5.5	R		27		7	5		NEL
1970 04 16.40			2.8	AT	0.0	E		1					SIM
1970 04 17.0			5.2		3	R		6					SCA01
1970 04 18.0			4.0		3.0	B		10					FOU
1970 04 18.05			4.1		5.0	B		7	4		3		STU
1970 04 18.9			4.0		0.0	E		1			2		HEN
1970 04 18.9			4.2	SP		B		8			2	290	VIN
1970 04 19.09			4.2	SP	8.0	B		11	8	6	7	305	PAN
1970 04 19.1			3.7		3.0	B		6			5		GIN
1970 04 19.14			3.0	SP	0.0	E		1		6	2	310	ISL
1970 04 19.14			3.4	SP	4.0	B		12		6	4	310	ISL
1970 04 19.15			3.7		7.5	R		40		8			COA
1970 04 19.82			4.5	SP	4.0	B		8			2.5		BUR
1970 04 19.85			4.0		0.0	E		1			2		HEN
1970 04 19.86			3.5		5.0	B		7	3	7	2.5	320	STU
1970 04 19.86			3.6	SP	5.0	B		7	2	7	3		GAI
1970 04 19.87			3.8		0.0	E		1			1		NIL
1970 04 19.92			3.7	SP	3.0	B		6		7	2.5		GIN
1970 04 20.05			3.9	SP	8.0	B		11	8	7	4	310	BRI02
1970 04 20.1			3.8		3.0	B		6			2		GIN
1970 04 20.1			4.5		5.0	B		10					FIS01
1970 04 20.13			4.2	SP	8.0	B		11	6	8	8	305	PAN
1970 04 20.98			4.2		5.0	B		10	4		2		PIN
1970 04 23.82			4.6		4.0	B		8		7	6		BUR
1970 04 23.85			4.6		5.0	B		7	3		7	320	STU
1970 04 23.86			4.8	SP	8.0	B		11	6	5	5	310	PAN
1970 04 23.88			3.5		10	L		31			1.5		BRO05
1970 04 23.9			4.0		0.0	E		1					FOU

Comet C/1969 Y1 (Bennett) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1970 04 23.9			4.8		5.0	B		10					FIS01
1970 04 23.9			5.6		4.0	B		8					WIN01
1970 04 23.90			4.3	SP	3.8	B		4	10	7	11		DOH
1970 04 23.92			3.5	SP	0.0	E		1			12		DIN
1970 04 23.92			4.3	SP	5.0	B		7	7		5		GAI
1970 04 23.93			4.5	SP	8.0	B		11	6	6	5	310	BRI02
1970 04 23.94			4.9		15	L		10	2		3		YOU02
1970 04 24.0			4.7		0.0	E		1					SCA01
1970 04 24.1			4.8		5.0	B		10					FIS01
1970 04 24.9			4.9		0.0	E		1					SCA01
1970 04 25.12			4.5	SP	5.0	B		12	6	6	6	310	PAN
1970 04 25.13			5.1	SP	5.5	R		27		7	2		NEL
1970 04 25.94			3.9	SP	0.0	E		1			5		DIN
1970 04 26.8			4.7	SP	4.0	B		8		8	3	305	BUR
1970 04 26.89			4.4		5.0	B		7	4	7	10	325	STU
1970 04 26.9			4.5		3.0	B		10					FOU
1970 04 26.9			4.8		0.0	E		1					DEA01
1970 04 26.90			4.0	SP	7.3	R	3						COL01
1970 04 26.91			5.3		5.0	B		10	8	7	6		LEM
1970 04 26.92			4.7	SP	8.0	B		11			5	315	BRI02
1970 04 26.93			4.2	SP	0.0	E		1			5		DIN
1970 04 27.01			5.0:		5.0	B		8					JUD01
1970 04 27.88			4.1		5.0	B		7	5		10		STU
1970 04 27.89			4.6	SP	5.0	B		7	3.6	7	3.5		GAI
1970 04 27.9			4.3		0.0	E		1			4		HEN
1970 04 27.9			4.8		0.0	E		1					FOU
1970 04 27.9			5.0		4.0	B		8					WIN01
1970 04 27.91			4.0	SP	7.3	R	3						COL01
1970 04 27.92			4.2	SP	0.0	E		1			12		DIN
1970 04 27.92			5.0		16	L		50	10	5	8		LEM
1970 04 27.93			4.8	SP	8.0	B		11	8	5	7	310	PAN
1970 04 27.95			4.7	SP	3.8	B		4	9	8	14		DOH
1970 04 27.96			4.8	SP	8.0	B		11			6	315	BRI02
1970 04 27.98			5.4		6.5	B		10	4	4	2.5		PIN
1970 04 28.0			4.5		0.0	E		1					SUT01
1970 04 29.06			4.5		0.0	E		1	1		5	320	YOU02
1970 04 29.06			4.9	SP	8.0	B		11			8	315	BRI02
1970 04 29.88			5.2	SP	8.0	B		11	8	7	9	313	PAN
1970 04 29.89			5.7	S	16	L		50	8	5	6		LEM
1970 04 29.9			4.5		0.0	E		1					SUT01
1970 04 29.92			4.7	SP	3.8	B		4	9	8	12		DOH
1970 04 29.92			5.7		5.0	B		10		4	1	290	PIN
1970 04 29.93			4.6	SP	5.0	B		7	2.8	8	5.5		GAI
1970 04 29.96			4.3	SP	4.5	B		10		8	12		CUR02
1970 04 29.97			4.9	SP	8.0	B		11			7	315	BRI02
1970 05 02.85			5.0		0.0	E		1			3		HEN
1970 05 02.85			5.6	SP	4.0	B		8			1	335	BUR
1970 05 02.9			5.1		0.0	E		1					DEA01
1970 05 02.90			5.2	SP	8.0	B		11			2.5	315	BRI02
1970 05 02.91			5.0	SP	5.0	B		12	8	5	10	315	PAN
1970 05 02.91			5.5	SP	5.0	B		7	5	2	9	330	STU
1970 05 02.92			4.8	SP	3.0	B		6					GIN
1970 05 02.92			5.3		3.8	B		4	8	7	12		DOH
1970 05 02.92			5.7		16	L		50	6	4	6		LEM
1970 05 02.93			5.0:	SP	5.0	B		7	6.7	6	6.5		GAI
1970 05 02.93			5.9		6.5	B		10	3	3	4		PIN
1970 05 02.97			4.8	SP	5.0	B		10	9	5	2.5		NOR01
1970 05 02.98			5.0		5.0	B		10	1		7		NAP01
1970 05 03.07			4.2	S	0.0	E		1			2	320	ISL
1970 05 03.1			4.9		4.0	B		8					WIN01
1970 05 03.11			5.7	SP	6.0	B		25	7		3	330	WHY
1970 05 03.32			3.6	AC	0.0	E		1			7		SIM
1970 05 03.9			5.0		0.0	E		1			7		HEN
1970 05 03.9			6.0		5.0	B		10					FIS01
1970 05 03.9			6.0		3.0	B		10					FOU

Comet C/1969 Y1 (Bennett) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1970 05 03.90			6.4		5.0	B		7		7	8		STU
1970 05 03.91			5.3	SP	3.0	B		6		7	2		GIN
1970 05 03.91			5.7		16	L		50	10	6	8		LEM
1970 05 03.92			4.7	SP	5.0	B		7	7.5	6	6.5		GAI
1970 05 03.92			5.0	SP	8.0	B		11	8	5	9	315	PAN
1970 05 03.92			5.2		6	R					0.4		NIL
1970 05 03.92			6.2		6.5	B		10	3	2			PIN
1970 05 03.98			6.0	UX	3.8	B		4	8		11		DOH
1970 05 04.89			6.4	S	6.5	R		16	8	5	5	320	LEM
1970 05 04.9			5.5		0.0	E		1					DEA01
1970 05 04.9			5.9		4.0	B		8					WIN01
1970 05 04.90			4.8	SP	5.0	B		7			5		GAI
1970 05 04.91			5.2	SP	5.0	B		10		3			NOR01
1970 05 04.91			5.3	SP	8.0	B		11		5	9	320	PAN
1970 05 04.91			5.4	SP	3.0	B		6		7	0.5		GIN
1970 05 04.96			7.8		5.0	B		10			1.5		MID02
1970 05 05.88			5.4	SP	3.0	B		6					GIN
1970 05 05.89			5.1	SP	5.0	B		10		3	2.5		NOR01
1970 05 05.9			5.3		0.0	E		1			3		HEN
1970 05 05.9			6.2		3.0	B		10					FOU
1970 05 05.91			5.2		8.0	B		11					MIL01
1970 05 05.92			5.1	SP	7.3	R	3						COL01
1970 05 05.93			5.4	SP	8.0	B		11	8	5	7	320	PAN
1970 05 06.38			5.1	SP	5.0	B		7			3		SIM
1970 05 06.85			5.4		6	R					0.3		NIL
1970 05 06.89			5.9	SP	5.0	B		7	3	2	1		STU
1970 05 08.40			5.6	AC	0.0	E		1		8	6		SIM
1970 05 08.94			5.6		6	R					0.25		NIL
1970 05 09.91			5.7	SP	8.0	B		11	8	5	5	315	PAN
1970 05 09.91			6.5		16	L		50	8	3	3		LEM
1970 05 10.90			5.8	SP	6.0	B		25	6	5	2		WHY
1970 05 10.91			6.5		16	L		50	10	3	3		LEM
1970 05 12.91			5.8	SP	5.0	B		7			0.5		GAI
1970 05 12.91			6.0	SP	8.0	B		11	4		1	315	BRI02
1970 05 12.92			6.5	SP	8.0	B		11	6	5	4	330	PAN
1970 05 12.95			6.3	SP	7.3	R	3						COL01
1970 05 14.91			6.5	SP	8.0	B		11	4				BRI02
1970 05 16.91			6.5	SP	8.0	B		11	4	2	0.5	315	BRI02
1970 05 17.92			5.9	SP	5.0	B		10		3			NOR01
1970 05 17.92			7.2	S	8.0	B		11	8	6	2	335	PAN
1970 05 18.92			6.9	S	16	L		50	5	2	0.25		LEM
1970 05 21.92			7.8	S	8.0	B		11	7	3	2.5	330	PAN
1970 05 21.97			7.3		16	L		50	5	2	0.3		LEM
1970 05 22.94			7.3		16	L		50	6	3	0.5		LEM
1970 05 24.91			6.6	SP	6.0	B		25	5	3	0.5	330	WHY
1970 05 24.92			7.3	AA	8.0	B		11	7	5	2.5	330	PAN
1970 05 25.00			6.9	S	5.0	B		7	5	2	1.5	330	STU
1970 05 25.90			7.5:		5.0	B		7			1		GAI
1970 05 25.92			7.5	AA	8.0	B		11	7	5	2	330	PAN
1970 05 25.94			6.6	SP	6.0	B		25	5		1	330	WHY
1970 05 25.95			7.2	S	16	L		50	10	2	1		LEM
1970 05 25.96			6.5	SP	7.5	R		64	7		0.75		DOH
1970 05 25.96			6.8	SP	8.0	B		11	3		0.15	320	BRI02
1970 05 26.93			7.5	AA	8.0	B		11	7	5	2	340	PAN
1970 05 26.93			8.3	S	16	L		50	10	4	1		LEM
1970 05 26.96			7.1	S	22	L		35	3.3	5	0.75	318	GAI
1970 05 26.97			6.8	S	8.0	B		11	3		0.7	325	BRI02
1970 05 27.95			7.4	S	8.0	B		11		6	0.75		MIL01
1970 05 27.96			7.7	AA	8.0	B		11		3	2	340	PAN
1970 05 27.97			8.5	S	16	L		50	10	3	1.5		LEM
1970 05 29.93			7.4	SP	6.0	B		25	4		0.7		WHY
1970 05 29.96			7.5	AA	8.0	B		11			2	340	PAN
1970 05 29.96			9.5	HS	16	L		50	12	3	1		LEM
1970 05 30.98			7.0	S	5.0	B		7	3	2	0.2	310	STU
1970 05 30.99			7.7	AA	5.0	B		7	6	3	1.5	340	PAN

Comet C/1969 Y1 (Bennett) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1970 05 31.93			7.6	SP	6.0	B		25	3	2	0.2		WHY
1970 05 31.95			7.7	AA	8.0	B		11	6	3			PAN
1970 06 01.93			7.8	S	8.0	B		11	3			320	BRI02
1970 06 01.95			7.8	AA	8.0	B		11	6	3	1	340	PAN
1970 06 03.93			7.8		6.0	B		25	2		0.1		WHY
1970 06 03.96			7.9	AA	8.0	B		11	8	3	2	340	PAN
1970 06 03.99			7.0		3.8	B		4	6	5	3		DOH
1970 06 04.94			7.1		7.5	R		64	5		0.5		DOH
1970 06 04.99			7.2	VB	8.0	B		11	4		0.3	325	BRI02
1970 06 04.99			7.9	S	22	L		35		6	0.3	340	GAI
1970 06 05.97			7.3	S	8.0	B		11	5	3			BRI02
1970 06 05.97			8.1	S	7.5	R		64	4	5	0.3		DOH
1970 06 05.98			7.9	AA	8.0	B		11	8	3	0.5	340	PAN
1970 06 06.01			8.2	S	5.0	B		7	3	4			STU
1970 06 06.98			8.0	S	7.5	R		64	5	7	0.3		DOH
1970 06 07.01			8.5	S	15	L			2	3			STU
1970 06 12.9			8.0		15	L		48					FOU
1970 06 14.31			7.8	AC	5.0	B		7			0.25		SIM
1970 06 18.99			8.0	AA	8.0	B		11	8	2			PAN
1970 06 19.02			7.9	S	8.0	B		11	5	2			BRI02
1970 06 20.97			8.0	AA	8.0	B		11	8	3			PAN
1970 06 20.98			7.9	S	8.0	B		11	5	2			BRI02
1970 06 21.04			8.9	S	22	L		35	3	5			GAI
1970 06 21.97			8.2	AA	8.0	B		11	7	2			PAN
1970 06 24.97			9.1	S	22	L		35		5			GAI
1970 06 24.98			8.6	AA	8.0	B		11	8	3			PAN
1970 06 29.97			9.1	S	8.0	B		11	3	2			BRI02
1970 06 29.98			9.6	HS	21.5	L		55	6	2			LEM
1970 07 01.95			10.2	HS	21.5	L		55	6	4			LEM
1970 07 01.97			9.1	S	8.0	B		11	3	2			BRI02
1970 07 05.98			9.2	S	8.0	B		11	3	2			BRI02
1970 07 05.98			9.4	AA	15	L		20	6	2			PAN
1970 07 06.97			10.4	HS	16	L		50	6	4			LEM
1970 07 07.97			8.7	S	22	L		35	2.3	4			GAI
1970 07 09.97			9.4	S	8.0	B		11	3	2			BRI02
1970 07 09.98			9.0:		16	R		50	4	4			VIN
1970 07 09.98			9.5	AA	15	L		20	6	2			PAN
1970 07 11.96			10.7	HS	16	L		50	8	2			LEM
1970 07 11.97			9.2	S	8.0	B		11					BRI02
1970 07 11.99			9.6	AA	15	L		20	5	2			PAN
1970 07 12.02			9.5	HS	22	L		35	1.6	2			GAI
1970 07 12.35			10.3	AC	20.5	L			3	2			SIM
1970 07 24.94			10.0	V	12.5	L		17	9	3			PAN
1970 07 28.99			9.4	S	8.0	B		11	4	2			BRI02
1970 07 29.03			10.0	V	12.5	L		17	7	2			PAN
1970 07 29.98			9.8	S	22	L		35	2.5	2			GAI
1970 07 29.98			10.5	HS	21.5	L		55	4	2			LEM
1970 07 29.99			10.0	V	12.5	L	4	17	9	2			PAN
1970 07 31.00			10.2	V	12.5	L	4	17	7	2			PAN
1970 08 10.99			11.5:		22	L		55	2	2			PAU01

Comet C/1970 B1 (Daido-Fujikawa)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1970 02 05.26	*		6.3	Y	8.0	B		11	2	8			BRI02
1970 02 06.26	*		6.1	Y	8.0	B		11	3	7	0.07	300	BRI02

Comet C/1970 N1 (Abe)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1970 07 25.96			10.1:	HS	21.5	L		35	1.3	2			GAI
1970 07 26.08			8.9		25	L		50	4	4			MIL01
1970 07 28.95			8.2	S	8.0	B		11	3	3			BRI02
1970 07 28.99			8.4	V	12.5	L		17	7	2			PAN
1970 07 29.0			8.7	S	11.5	R		80	2	2			RID

Comet C/1970 N1 (Abe) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1970 07 29.99			8.4	V	12.5	L		17	8	4			PAN
1970 07 29.99			9.4	HS	21.5	L		35	3.5	2			GAI
1970 07 30.00			8.8	S	21.5	L		55	3	4			LEM
1970 07 31.0			8.9	S	11.5	R		90	2				RID
1970 07 31.95			10.0	HS	16	L		50	4	4			LEM
1970 07 31.96			8.6	S	11.5	R		90	2				RID
1970 08 04.97			7.8	UM	10	L		31	5	6			PAU01
1970 08 05.96			8.0	UM	15	L		60	5	3			YOU02
1970 08 05.97			7.7		10	L		31	6	4			PAU01
1970 08 06.91			9.2	S	16	L		50	4	5			LEM
1970 08 07.01			8.8	S	11.5	R		90	2	3			RID
1970 08 08.95			7.5		15	L		60	5	3			YOU02
1970 08 09.94			8.7	S	11.5	R		90	2	3			RID
1970 08 10.91			7.5		15	L		60	5	3			YOU02
1970 08 10.96			7.3		5.0	B		12		3			NEL
1970 08 10.96			8.2	AA	8.0	B		11	5	5			PAN
1970 08 10.99			7.3	UN	22	L		55	6	4			PAU01
1970 08 11.07			8.5		15	L		60	5	4			STU
1970 08 11.92			7.8	AA	8.0	B		11	6	5			PAN
1970 08 11.94			7.0		15	L		60	5	3			YOU02
1970 08 11.94			9.1	HS	21.5	L		35		5			GAI
1970 08 11.95			7.3		5.0	B		12		2			NEL
1970 08 11.99			8.4		15	L		120					STU
1970 08 12.0			8.2	S	11.5	R		90	2				RID
1970 08 12.00			7.5		5.0	B		10	3	5			DOH
1970 08 12.02			8.1	UX	8.0	B		11	8	3			BRI02
1970 08 12.85			7.5		6	R		36			0.2		NIL
1970 08 13.0			7.3		7.5	R		64	3	6			DOH
1970 08 13.97			7.7	UX	8.0	B		11	8	3			BRI02
1970 08 14.03			7.0		15	L		60	7	4			YOU02
1970 08 14.05			9.0		15	L		120	7	2			STU
1970 08 14.89			7.0:		15	L		60	5	3			YOU02
1970 08 14.92			9.2	S	15	L		60	4	2			STU
1970 08 14.95			7.9	UX	8.0	B		11	6	3			BRI02
1970 08 14.98			7.0:		7.5	R		64	3	6			DOH
1970 08 16.91			8.5	S	11.5	R		90	3	3			RID
1970 08 17.02			7.8	UX	8.0	B		11		3			BRI02
1970 08 17.89			7	:	15	L		60		3			YOU02
1970 08 17.90			8.0	UX	8.0	B		11	6	3			BRI02
1970 08 17.94			7.9	UX	8.0	B		11	8	3			PAN
1970 08 21.83			6.8		6	R		36			0.25		NIL
1970 08 22.96			6.7		7.5	R		27	5	5			DOH
1970 08 22.97			6.5:		15	L		60	7	3			YOU02
1970 08 22.98			8.0	S	21.5	L		35		4			GAI
1970 08 23.83			8	:	15	L		48	4	3			BUR
1970 08 23.85			6.6		6	R		36			0.25		NIL
1970 08 23.88			7.0		15	L		60	7	4			YOU02
1970 08 23.90			7.3	S	16	L		50	5	4	0.2		LEM
1970 08 23.93			7.4	UX	8.0	B		11	8	3			BRI02
1970 08 23.97			6.5		7.5	R		27	5	5			DOH
1970 08 24.90			6.7		7.5	R		27	5	5			DOH
1970 08 24.92			7.4	S	21.5	L		35	4.3	5			GAI
1970 08 25.87			7.7	UM	15	L		60	4	3			YOU02
1970 08 25.88			6.4		6	R		36			0.25		NIL
1970 08 25.90			6.5:		7.5	R		30	0.5	2			CAL01
1970 08 25.92			6.5	UX	8.0	B		11	8	3			BRI02
1970 08 25.92			7.7	S	11.5	R		90	3.5	6			RID
1970 08 26.91			6.3		6.5	B		10	4				PIN
1970 08 26.91			9.0	S	16	L		50	5	4	0.3		LEM
1970 08 27.83			6.5	UX	8.0	B		11	7	3			BRI02
1970 08 27.91			6.3	UN	21.5	L		55	8	4			PAU01
1970 08 27.97			6.2		6.5	B		10	4	2			PIN
1970 08 27.99			7.7	S	11.5	R		90	4	5			RID
1970 08 28.93			7.5	S	11.5	R		90	4	4			RID
1970 08 28.95			6.5		7.5	R		27	5	5			DOH

Comet C/1970 N1 (Abe) [cont.]

DATE (UT)	N MM MAG.	RF	AP.	T F/	PWR	COMA	DC	TAIL	PA	OBS.
1970 08 29.03	6.9	AA	8.0	B	11	9	5	0.50	130	PAN
1970 08 29.17	6.5		15	L	60	7	4			YOU02
1970 08 29.91	6.0		6	R	36			0.25		NIL
1970 08 29.92	7.2	S	16	L	50	6	4	0.25		LEM
1970 08 29.94	7.6		11.5	R	90	4	4			RID
1970 08 30.86	8.5	S	16	L	50	5	5	0.25		LEM
1970 08 30.94	7.2	S	11.5	R	90	4	5			RID
1970 08 31.86	6.5		15	L	60	8	5			YOU02
1970 08 31.89	6.5	UM	4.0	B	8	4.5	6			BUR
1970 08 31.9	5.9		5.0	B	7					FRE
1970 08 31.91	5.7		7.5	R	27	7	6	0.5		DOH
1970 08 31.91	6.5		10	L	31	10	6			BRO05
1970 08 31.94	7.5	S	11.5	R	90	5	6		130	RID
1970 08 31.95	6.3	AA	21.5	L	35	9	5	0.25	140	GAI
1970 09 01.86	6.0		6	R	16	5	5	0.5		LEM
1970 09 01.86	6.6	AA	8.0	B	11	18	5	1	165	PAN
1970 09 01.92	7.1	S	11.5	R	90	4	4			RID
1970 09 02	6.0		5.0	B	7	30	3			GIN
1970 09 02.02	5.7		7.5	R	64	7	7	1		DOH
1970 09 02.87	5.5		15	L	60	9	6	1	130	YOU02
1970 09 02.98	5.7		7.5	R	27	7	7	1		DOH
1970 09 03.88	5.6		7.5	R	27	7	7	0.5		DOH
1970 09 03.89	6.6	AA	8.0	B	11	14	5			PAN
1970 09 04.85	6.9	LN	5.0	B	7					GAI
1970 09 05.85	6.5	AA	8.0	B	11	18	5			PAN
1970 09 05.87	5.9		5.0	B	10	10	3			BRO05
1970 09 05.9	6.5		5.0	B	7					FRE
1970 09 06.0	5.7		5.0	B	10	7	7	0.5		DOH
1970 09 06.0	6.1		4.0	B	3					SUT01
1970 09 06.04	6.8	S	11.5	R	90	4	4			RID
1970 09 06.90	6.5	S	8.0	B	11	7	5			MIL01
1970 09 06.93	6.4	S	11.5	R	90	4	5			RID
1970 09 06.95	5.9	LN	0.0	E	1					BRI02
1970 09 06.95	6.5	LN	8.0	B	11	8	6	0.25	100	BRI02
1970 09 07.89	6.7	S	11.5	R	90	4				RID
1970 09 08	5.7	LN	30	L	40		4			GIN
1970 09 08.83	6.5	AA	8.0	B	11	12	5			PAN
1970 09 08.84	6.6	S	5.0	B	7	15				GAI
1970 09 09.86	6.0		15	L	60	9	7			YOU02
1970 09 09.87	6.7	UX	8.0	B	11		3			BRI02
1970 09 09.88	5.7	UM	5.0	B	10	10		0.5		DOH
1970 09 10.86	6.3	AA	8.0	B	11	9	5	0.5	90	PAN
1970 09 10.9	6.4		5.0	B	7					FRE
1970 09 11.8	7.5		5.0	B	7					FRE
1970 09 12.8	7.3		5.0	B	7					FRE
1970 09 12.84	6.2	UX	8.0	B	11	12	3			BRI02
1970 09 12.89	8.0	S	16	L	50	5	5			LEM
1970 09 12.93	6.1	AA	8.0	B	11	8	5			PAN
1970 09 12.95	6.8	S	11.5	R	90	3				RID
1970 09 12.96	6.0		7.5	R	27	7		0.2		DOH
1970 09 14.90	6.5		15	L	60	5	4			YOU02
1970 09 15.96	7.2	S	11.5	R	90	2				RID
1970 09 16.0	7.0		5.0	B	10					CHA01
1970 09 16.9	6.6		5.0	B	7					FRE
1970 09 17.8	6.0		4.0	B	12					ISL
1970 09 17.8	6.8		5.0	B	7					HUG01
1970 09 17.8	7.2		10	L	50					ISL
1970 09 17.82	6.0		15	L	48	4	7			BUR
1970 09 17.82	6.1	AA	8.0	B	11	9	5			PAN
1970 09 17.84	6.6	UX	8.0	B	11	7	5		70	BRI02
1970 09 17.85	6.6	S	11.5	R	90	3	5			RID
1970 09 17.86	6.9	S	22	L	35		5			GAI
1970 09 17.86	6.9	UM	5.0	B	7	4.1	5			GAI
1970 09 17.88	6.9	S	12	R	20	5	5			MIL01
1970 09 17.89	6.7	S	5.0	B	7	8	3			STU

Comet C/1970 N1 (Abe) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1970 09 17.9			6.8		3.0	B		15					FOU
1970 09 18.0			6.6		5.0	B		10					CHA01
1970 09 18.8			6.5		5.0	B		7					HUG01
1970 09 18.8			6.7		5.0	B		7					FRE
1970 09 18.85			6.4	S	11.5	R		90	4	5	0.2	60	RID
1970 09 18.87			6.5		15	L		60	6	5			YOU02
1970 09 18.87			6.6	S	5.0	B		7	6	4			STU
1970 09 19.8			7.2		5.0	B		7					FRE
1970 09 19.8			8.3		5.0	B		12					BEL05
1970 09 19.8			8.6		20	L		30					BEL05
1970 09 19.85			6.1	UM	16	L		50	3.5		0.25		LEM
1970 09 19.89			6.8	S	11.5	R		90	3				RID
1970 09 20.8			6.5		5.0	B		7					HUG01
1970 09 20.8			7.5		5.0	B		12					BEL05
1970 09 20.8			7.5		5.0	B		7					FRE
1970 09 20.8			8.9		20	L		30					BEL05
1970 09 20.82			6.9	S	12	R		20	5	6	0.33	75	MIL01
1970 09 20.83			7.5	S	16	L		50	3	5	0.5		LEM
1970 09 20.84			6.5	S	11.5	R		90	4	6	0.2	50	RID
1970 09 20.87			6.3	UX	8.0	B		11	6		0.3	60	BRI02
1970 09 20.88			6.3	AA	8.0	B		11	7	4	0.3	65	PAN
1970 09 21.82			5.8		6	R		36			0.25		NIL
1970 09 21.84			8.0	S	16	L		50	3	5	0.5		LEM
1970 09 22.8			6.8		5.0	B		7					HUG01
1970 09 22.8			6.9		5.0	B		12					BEL05
1970 09 22.8			7.0		5.0	B		7					FRE
1970 09 22.8			7.5		10	L		50					ISL
1970 09 22.85			6.0	AA	8.0	B		11	7	5	0.4	70	PAN
1970 09 22.85			6.6	S	11.5	R		90	4	5	0.2	50	RID
1970 09 23.8			6.6		5.0	B		10					CHA01
1970 09 23.8			7.0		5.0	B		7					FRE
1970 09 23.83			6.2		7.5	R		27	7	5	0.7		DOH
1970 09 23.83			6.4	UX	8.0	B		11	5		0.35	60	BRI02
1970 09 23.86			6.8	S	11.5	R		90	3.5	5			RID
1970 09 23.86			8.4	S	16	L		50	3.5	5	0.25		LEM
1970 09 23.9			9.1		15	L		48					FOU
1970 09 24.8			6.7		5.0	B		12					BEL05
1970 09 24.82			6.0:	UL	16	L		50	4	4	0.25		LEM
1970 09 24.82			6.7	S	11.5	R		90	4	6	0.5	60	RID
1970 09 24.86			6.2	S	21.5	L		35	3.2	4		50	GAI
1970 09 24.87			6.6	UX	8.0	B		11	5				BRI02
1970 09 26.93			8.2	S	16	L		50	3.5	4	0.25		LEM
1970 09 28.81			5.9	S	11.5	R		90	3	6	0.3	60	RID
1970 09 28.81			6.9	S	16	L		50	3.5	4	0.25		LEM
1970 09 29			7.1		5.0	B		12					BEL05
1970 09 29.8			6.6		5.0	B		7					FRE
1970 09 29.81			6.1		16	L		50	3	5	0.5		LEM
1970 09 29.82			6.5	AA	8.0	B		11	5	5	0.6	60	PAN
1970 09 29.82			6.7	S	11.5	R		90	3	6	0.5	50	RID
1970 09 29.83			7.4	S	5.0	B		7	7				STU
1970 09 30			7.1		5.0	B		12					BEL05
1970 10 01			6.6		5.0	B		12					BEL05
1970 10 01.81			6.3	UL	16	L		50	3.5	5	0.5		LEM
1970 10 02.79			6.3	UM	4.0	B		8	2	6	0.1		BUR
1970 10 02.81			6.8	S	11.5	R		90	3	6	0.5		RID
1970 10 02.83			7.5	S	5.0	B		7	4	6	0.2	70	STU
1970 10 02.84			6.6	V	8.0	B		11	6	4	0.3	50	PAN
1970 10 06.79			6.2	S	16	L		50	3.5	4	0.25		LEM
1970 10 06.79			6.5		7.5	R		27	7	6	0.5		DOH
1970 10 06.8			7.0		5.0	B		12					BEL05
1970 10 06.81			6.4	UM	4.0	B		8	2.5	5	0.4	65	BUR
1970 10 06.81			6.6	V	8.0	B		11	10	5	0.63		PAN
1970 10 06.81			6.8	UX	8.0	B		11	4		0.5	55	BRI02
1970 10 06.82			6.5		15	L		60	4	4	0.2	70	YOU02
1970 10 06.82			6.6	S	5.0	B		7	3	4	0.18	70	STU

Comet C/1970 N1 (Abe) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1970 10 06.84			7.2	S	21.5	L		35	3.3	4	0.3	50	GAI
1970 10 07.78			7.0	S	11.5	R		90	2.5	5	0.3	60	RID
1970 10 07.81			7.0	UX	8.0	B		11					BRI02
1970 10 07.82			6.7	S	5.0	B		7	3	5			STU
1970 10 08.78			7.2	S	11.5	R		90	2.5	5	0.3	60	RID
1970 10 08.8			6.3		5.0	B		12					BEL05
1970 10 08.81			6.6	UM	4.0	B		8	3	6	0.1	70	BUR
1970 10 08.81			6.9	S	5.0	B		7	3	6	0.12	70	STU
1970 10 08.81			6.9	UX	8.0	B		11	3		0.5	50	BRI02
1970 10 08.81			6.9	V	8.0	B		11	6	3	0.35	65	PAN
1970 10 09.78			7.0	S	15	L		25	3				STU
1970 10 09.79			7.0	UX	8.0	B		11					BRI02
1970 10 09.79			7.1	S	11.5	R		90	2.5	5	0.25	60	RID
1970 10 09.85			8.6	S	21.5	L		35	2.2				GAI
1970 10 10.78			7.0	S	15	L		25	2	3			STU
1970 10 10.82			6.5	UL	16	L		50	3	4	0.25		LEM
1970 10 15.79			7.4	V	8.0	B		11	5	3			PAN
1970 10 16.77			7.3	V	8.0	B		11	7	4	0.5	70	PAN
1970 10 16.78			8.1	S	15	L		60	2	4			STU
1970 10 17.77			7.5	S	11.5	R		90	2.5	4	0.2	55	RID
1970 10 17.77			8.1	S	15	L		25	3	2			STU
1970 10 17.78			7.7	S	16	L		50	3	4	0.25		LEM
1970 10 17.78			7.7	UX	8.0	B		11					BRI02
1970 10 18.8			6.9		5.0	B		12					BEL05
1970 10 19.79			8.7	S	15	L		25		4	0.08	70	STU
1970 10 21.78			7.4	AA	8.0	B		11	8	4	0.3	45	PAN
1970 10 21.78			7.7	UX	8.0	B		11	3			45	BRI02
1970 10 26.77			7.5	UX	8.0	B		11	3	3		65	BRI02
1970 10 26.78			8.3	S	15	L		25		4			STU
1970 10 29.76			8.4	S	11	L		50	3	2	0.25		LEM
1970 11 05.76			8.0	S	11.5	R		90	1.5	4			RID
1971 01 24.26			8.2		12	R		20	2				MIL01
1971 01 24.98			8.5		8.5	B		11	2				ALC
1971 01 25.26			9.5		8.5	B		11					ALC

Comet C/1970 U1 (Suzuki-Sato-Seki)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1970 10 26.75			7.0:		5.0	B		7					STU
1970 10 26.75			7.5:		12	B		20	2	5			MIL01
1970 10 26.77			8.0	UX	8.0	B		11	2	5			BRI02
1970 10 26.78			7.6	V	8.0	B		11	8	5			PAN
1970 10 26.78			7.8	S	11.5	R		90	2	8			RID
1970 10 28.78			6.5	UL	16	L		50	4.5	6			LEM
1970 10 29.79			6.5	UL	16	L		50	3.5	5			LEM
1970 10 31.78			8.5	S	16	L		50	3	5			LEM
1970 11 03.75			8.0		15	L		60	2	6			YOU02
1970 11 03.76			8.4	S	15	L		25	3	5			STU
1970 11 03.81			8.5	S	11.5	R		90	2	3			RID
1970 11 05.73			8.6	S	15	L		25	2	4			STU
1970 11 05.75			8.6	S	11.5	R		90	2	3			RID
1970 11 05.76			8.9	S	16	L		50	3.5	3			LEM
1970 11 05.82			8.2	V	12.5	L		18	5	3			PAN
1970 11 07.76			9.0	S	15	L		25	2	4			STU
1970 11 08.79			9.0	S	15	L		25		3			STU
1970 11 09.78			9.7		11.5	R		90	1				RID
1970 11 09.79			9.0	S	15	L		25		3			STU
1970 11 16.76			10.0	HS	15	L		25	3	2			STU
1970 11 19.75			10.0	UL	11.5	R		90	2	1			RID
1970 11 19.75			11.2	HS	15	L		25		2			STU
1970 11 21.75			11.2	HS	15	L		25	2	2			STU

Comet C/1971 E1 (Toba)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1971 03 23.17		P	9.0	UL	15	R	5		1	6			WAT
1971 05 23.64			9.5	UL	30	L		40			0.03	280	MAT01
1971 05 23.66			9.0:	UL	20	L		40	1	5	0.03	285	THO

Comet C/1972 E1 (Bradfield)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1972 03 12.81			10.0:	UL	15	L	5	26					BRA01
1972 03 25.40			9.3	S						6			CAN
1972 03 25.78			9.5	S	20			40		3			JON01
1972 03 26.77			9.5	S	20			40		3			JON01
1972 03 27.76			9.5	S	20			40		3			JON01
1972 05 16.42			11.0:	UL	30	L		40		3			MAT01

Comet C/1972 L1 (Sandage)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1972 08 10.92		P	13.0:	UL	15	R	5		0.5	6	0.02	170	RUT
1972 08 16.90		P	13.0:	UL	15	R	5		0.5	6			WAT

Comet C/1972 U1 (Kojima)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1972 11 30.54			11.5:	UL	30	L		40		2			MAT01
1972 12 01.58			11.5:	UL	30	L		40		2			MAT01
1972 12 12.53			11.0:	UL	30	L		132		2			MAT01
1972 12 24.53			10.5:	UL	20	L		96		4			THO
1972 12 30.44			11.0:	UL	30	L		132		2			MAT01
1972 12 30.89			10.6	HS	22	L		90	1.0	2			LEM
1973 01 21.80		P	10.6	NP	15	R	5		0.3	7	0.03	120	WAT
1973 02 21.84			12.0	UM	23	R	4	36		3			M0004
1973 03 01.81			9.7	UL	15	L		48	2				STU
1973 03 05.82			[11.0:	UL	15	L		48					STU

Comet C/1973 A1 (Heck-Sause)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1973 02 10.01		P	11.9	NP	15	R	5		0.5	7	0.03	200	WAT
1973 02 21.91		P	12.4	UL	15	R	5		0.3	7	0.08	180	WAT
1973 02 24.96			12.1:	UL	25	L		40	1	5			MIL01
1973 02 26.86			12.0:	UL	15	L		48	0.7	4S	0.03	170	STU
1973 05 02.97			13.5:	UL	32	R	18	200	0.5	1			ROG02

Comet C/1973 E1 (Kohoutek)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1973 10 10.85			8.8	UL	5.0	B		16	0.4				DEJ
1973 10 16.25			10.5:	UL	15	L		60	1	2			AND07
1973 10 21.20			8.5	S	10	B		25	5	2		285	ALC
1973 10 21.22			10.0:	UL	32	R	18	80	1	2			YOU02
1973 10 24.22			9.0	S	30	L		96	3	1			HOW
1973 10 25.20			11.0	HS	16	L		50	4	3			LEM
1973 10 25.8			8.0	UL	12.7	R		16	1				CLA
1973 10 26.24			10.6	HS	16	L		50	4	3			LEM
1973 10 26.83			7.5	UL	5.0	B		16	0.3				DEJ
1973 10 27.22			8.0:	UL	20	L		30	6				TAY02
1973 10 27.62			9.5	UL	25	L				4			WHE
1973 10 29.8			7.9	UL	12.7	R		16	1.5				CLA
1973 10 30.22			8.8	S	12	R		20	2	2			BRI02
1973 10 30.27			7.4	UL	5.0	B		7	8				LYT
1973 11 02.85			7.1	UL	5.0	B		16	1				DEJ
1973 11 05.83			7.0	UL	5.0	B		16	0.9				DEJ
1973 11 06.21			7.2	UL	25.4	L		48	3.5	5	0.03		DOH
1973 11 06.22			8.3	S	5.0	B		7					CLA01
1973 11 06.23			8.2	UL	10	B		25	6	4	0.2	290	ALC

Comet C/1973 E1 (Kohoutek) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1973 11 06.23			8.4	S	30	L		96	4	4	0.12	270	HOW
1973 11 08.83			6.8	UL	5.0	B		7	1				DEJ
1973 11 09.27			6.4	UX	6	R		45	12	4	0.5		HAT
1973 11 09.8			6.9	UL	12.7	R		16	2		0.08		CLA
1973 11 11.23			7.3	S	3.0	B		8		5			BRE
1973 11 11.23			7.8	S	32	R	18	80	2	5	0.17	285	YOU02
1973 11 12.24			8.2	S	16	L		50	6	3			LEM
1973 11 13.24			8.3	S	5.0	B		7					CLA01
1973 11 14.24			7.8	AA	8.0	B		11	8	4			PAN
1973 11 14.27			6.9	UL	5.0	B		7	10				LYT
1973 11 15.25			7.8	AA	8.0	B		11	6	4			PAN
1973 11 15.8			6.7	UL	6.5	B		20	3		0.12		CLA
1973 11 15.80			6.5	UL	5.0	B		16	> 1				DEJ
1973 11 16.23			7.4	S	5.0	B		7					CLA01
1973 11 17.08			5.5	UL	6.3	R		50		2			BAI
1973 11 17.2			8.0	S	32	R	18	200	2.5		0.15		ROG02
1973 11 17.2			8.1	S	32	R	18	80	2	6			BUR
1973 11 17.23			6.0:	UL	6.0	B		13					HEN
1973 11 17.23			7.2	UL	7.0	B		12	8				VER01
1973 11 17.23			7.8	S	32	R	18	80	2.5	5	0.17	285	YOU02
1973 11 17.24			6.7	UL	6	R		30	0.8	2	0.03	280	GAV
1973 11 17.25			7.0:	UL	12.7	R		32		4			MOO01
1973 11 17.80			5.6	UL	5.0	B		16					DEJ
1973 11 18.06			6.0	UX	5.0	B		7	15	3			BUR02
1973 11 18.21			7.5	UX	16	L		50	8	4	0.17	270	LEM
1973 11 18.74			7.5	S	5.0	B		7					MCM
1973 11 19.74			6.8	UL	10.5	L		40					THO
1973 11 20.2			8.3	S	32	R	18	80			0.13	285	SAV03
1973 11 20.2			8.4	S	32	R	18	200	3	5	0.17	290	BUR
1973 11 20.23			6.1	UX	25.4	L		48	6	5	0.1		DOH
1973 11 20.23			8.0	S	32	R	18	80	2.5	5	0.17	285	YOU02
1973 11 20.23			8.3	S	16	L		50	8	3	0.18	275	LEM
1973 11 20.24			7.2	S	5.0	B		7					CLA01
1973 11 20.24			7.5	S	8.0	B		11	7				BRI02
1973 11 20.24			7.6	S	3.0	B		8	2	5			BRE
1973 11 20.24			8.0	S	25	L		60					MAN
1973 11 21.20			8.6	S	16	L		50	8	3	0.17	27	LEM
1973 11 21.8			6.2	UL	6.5	B		20	3		0.17		CLA
1973 11 22.22			7.2	S	16	L		50	8	5	0.2	27	LEM
1973 11 22.64			6.7	UL	25	L				4			WHE
1973 11 23.72			8.1	S	5.0	B		7					MAT01
1973 11 23.8			6.2	UL	6.5	B		20	3.5		0.33		CLA
1973 11 24.24			6.4	S	3.0	B		8		5	0.03	320	BRE
1973 11 24.64			6.4	UL	25	L					0.5		WHE
1973 11 24.72			8.5	S	20	L		40	6				JON01
1973 11 24.8			6.1	UL	6.5	B		20	3.5		0.25		CLA
1973 11 25.2			7.7	S	8.0	B		10					GRI
1973 11 26.2			6.7	S	8.0	B		10	2		0.33		FEW
1973 11 26.2			6.8	S	8.0	B		10	4	6	0.25	280	BUR
1973 11 26.2			6.8	S	8.0	B		10	2		0.33	280	SAV03
1973 11 26.22			6.5	UL	16	L		50	8	5	0.25	280	LEM
1973 11 26.22			6.7	S	5.0	B		7	5	4	0.17	285	HOW
1973 11 26.24			6.5	UX	15.3	L		46	4	3			HAY04
1973 11 26.24			6.8	S	8.0	B	18	10	4	6	0.33	280	YOU02
1973 11 26.24			6.9	S	5.0	B		7					CLA01
1973 11 26.25			5.0	UX	5.0	B		10	0.3		0.02		HAT
1973 11 26.25			6.0	UX	5.0	B		10	15	6	0.7		DOH
1973 11 26.25			6.5	AA	8.0	B		11	5	4	0.4	280	PAN
1973 11 26.26			6.3	UL	6	R		120					STE11
1973 11 26.60			6.2	UL	25	L							WHE
1973 11 26.8			5.9	UL	6.5	B		20	4		0.5		CLA
1973 11 26.80			5.2	UL	5.0	B		16	7				DEJ
1973 11 27.24			5.6	UX	8.0	B		11	5		0.7	280	MIL01
1973 11 27.24			7.0	S	8.0	B		10	3		0.3	280	YOU02
1973 11 27.25			4.3	UX	4.0	B		8					SHE02

Comet C/1973 E1 (Kohoutek) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1973 11 27.25			6.3	AA	8.0	B		11	5	4	0.3	280	PAN
1973 11 27.25			6.5	UX	8.0	B		20					HAM01
1973 11 27.26			5.3	AA	5.0	B		10		3			PAC
1973 11 27.26			5.8	UL	7.7	R		84		3			HIG01
1973 11 27.26			5.9	S	5.0	B		7	8	2			ROT
1973 11 27.26			6.0	UL	6	R		120					STE11
1973 11 27.26			7.0:	UL	6.8	R		10					FRY
1973 11 27.26			8.2	S	32	L		50		3		280	AND
1973 11 27.27			5.6	UX	5.0	B		10	13	6	0.7		DOH
1973 11 28.2			5.5	SP	8.0	B		10					ROG02
1973 11 28.2			6.7	SP	8.0	B		10	1.1		0.02		GRI
1973 11 28.26			5.3	AA	5.0	B		10		3			PAC
1973 11 28.8			5.7	UL	12.7	R		16	4.5		0.6		CLA
1973 11 29.27			4.7	AA	5.0	B		10	2	5		227	BIL
1973 11 29.27			6.3	UL	5.0	B		7					LYT
1973 11 29.8			5.7	UL	6.5	B		20	4.5		0.75		CLA
1973 11 29.80			5.0	UL	5.0	B		16	6	6	0.4	280	DEJ
1973 11 29.80			5.3	UL	5.0	B		16					BUH
1973 11 30.25			5.9	S	5.0	B		7	6	2			ROT
1973 11 30.26			6.5	S	5.0	B		7					CLA01
1973 11 30.8			5.5	UL	6.5	B		20	5		1		CLA
1973 11 30.80			4.9	UL	5.0	B		16					BUH
1973 11 30.80			4.9	UL	5.0	B		16	6		0.8		DEJ
1973 11 30.80			5.1	UL	5.0	B		16					DIM01
1973 12 01.26			5.2	UX	25.4	L		48	15	4			DOH
1973 12 01.26			5.6	UL	6	R		120					STE11
1973 12 01.27			6.4	S	5.0	B		7					CLA01
1973 12 01.3			7.1	SP	32	R	18	80		5	0.2		BOW01
1973 12 01.80			4.8	UL	5.0	B		16					BUH
1973 12 01.80			4.9	UL	5.0	B		16	6		1		DEJ
1973 12 01.80			5.0	UL	5.0	B		16					DIM01
1973 12 02.25			4.5	UX	6.0	B		13	4	6	0.5	280	HEN
1973 12 02.25			6.3	S	8.0	B		10	4	5	0.25	280	YOU02
1973 12 02.26			6.3	AA	8.0	B		11	6	4	0.2	290	PAN
1973 12 02.3			6.0	S	8.0	B		10		6	0.3	280	BUR
1973 12 02.3			6.4	S	8.0	B		10	1.5		0.1	270	GRI
1973 12 02.8			5.2	UL	6.5	B		20	5		1		CLA
1973 12 02.80			4.8	UL	5.0	B		16	5		1		DEJ
1973 12 04.65			5.5	UL	25	L					1		WHE
1973 12 04.8			4.9	UL	13	R		16	5		2		CLA
1973 12 04.80			4.6	UL	5.0	B		16	2.5		1.5		DEJ
1973 12 04.80			4.7	UL	5.0	B		16					DIM01
1973 12 05.80			4.5	UL	5.0	B		16			0.5		DEJ
1973 12 06.8			4.7	UL	6.5	B		20	4.5		1.5		CLA
1973 12 06.80			4.4	UL	5.0	B		16	1.5		2.5		DEJ
1973 12 07.80			4.3	UL	5.0	B		16					DEJ
1973 12 07.80			4.8	UL	5.0	B		16					DIM01
1973 12 08.06			4.9	UL	3.5	B		7					BEN
1973 12 08.73			4.6	UX	3.0	B		8			1	295	THO
1973 12 08.80			4.2	UL	5.0	B		16	1.3		2.5		DEJ
1973 12 09.2			4.8	UX	5.0	B		7			0.5		NIG
1973 12 09.8			4.5	UL	6.5	B		20	4.5		>1		CLA
1973 12 12.8			4.5	UL	6.5	B		20	4		>1		CLA
1973 12 13.8			4.4	UL	6.5	B		20	4		1		CLA
1973 12 15.08			4.3	S	12	R		21					BEN
1973 12 15.8			4.0	UL	6.5	B		20	4		0.5		CLA
1973 12 19.8			3.5	UL	6.5	B		20	3				CLA
1973 12 20.8			3.3	UL	6.5	B		20	3				CLA
1973 12 22.11			2.5	UX	3.5	B		7					BEN
1973 12 22.8			2.8	UL	6.5	B		20	3				CLA
1974 01 04.74			2.5	UX	6.0	B		16		4	0.75	75	MOS02
1974 01 05.00			4.0	UX	5.0	B		7			3		SIM
1974 01 05.75			3.7	UL	6.0	B		16			1	80	MOS02
1974 01 06.69			3.3	UX	5.0	B		10	2	7	1		DOH
1974 01 06.7	!		3.8	UX	4.0	B		8		8	2		BUR

Comet C/1973 E1 (Kohoutek) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1974 01 06.72			2.5	UL	3.0	B		8					STE11
1974 01 06.72			3.0	UL	6.8	R		10			0.5		FRY
1974 01 06.72			3.4	SP	5.0	B		12	5	5	1.5	70	PAN
1974 01 06.72			4.0	UL	8.0	B		20					HAM01
1974 01 06.72	!		3.7	SP	6.3	B		9	2.5	7	2	40	YOU02
1974 01 06.73			3.6	UL	5.0	B		10	20		3		HAT
1974 01 06.73			3.8	UX	5.0	B		7			1	10	CLA01
1974 01 06.73			4.0	UL	5.0	B		7			0.5		RAC
1974 01 06.73			4.4	UX	4.0	B		8			1.5		TAY
1974 01 06.73			5.4	UX	3.0	B		8			0.8	50	BRE
1974 01 06.75			2.7	UL	5.0	B		7					MUR01
1974 01 07.68			3.3	UX	5.0	B		10	2.5	7	0.75	72	DOH
1974 01 07.7	!		4.2	UX	4.0	B		8		7	2		BUR
1974 01 07.71			3.7	UL	7.0	B		12			1		VER01
1974 01 07.73			3.0	UL	5.0	B		10	5	7			GAV
1974 01 07.73			3.5	UL	0.0	E		1					AND07
1974 01 07.73			4.0	UL	5.0	B		10		8	3		NAP01
1974 01 07.73			4.0	UL	8.0	B		20					HAM01
1974 01 07.74			3.7	UX	2.5	B		8		6	1.5		HAY04
1974 01 07.75			3.5	UL	5.0	B		7			2		MUR01
1974 01 07.75			4.0	UL	7.5	R		40			1		BEE01
1974 01 08.64			3.7	UX	3.0	B		8	4	7	1.5		WHY
1974 01 08.72			3.1	UX	8.0	B		11	5	7	3	60	MIL01
1974 01 08.72			3.5	UX	7.7	R		36	25		8		MAD
1974 01 08.73			3.5	UX	5	R		6					TAY02
1974 01 08.73			3.7	UL	6	R		28	7		0.75		GAV
1974 01 08.73			4.0	UL	5.0	B		10			3		NAP01
1974 01 08.73			4.5	UX	5.0	B		7	0.7	7	1.3	60	HOW
1974 01 08.74			4.0	UL	5.0	B		10			3		CUR02
1974 01 08.74			4.0	UX	11.5	R		70			1.5		RID
1974 01 08.74			5.0	UL	7.5	R		40			0.5		BEE01
1974 01 08.75			3.5	UL	7.6	R		50	7		3.5		FER02
1974 01 08.75			4.5	UL	8.0	B		20					HAM01
1974 01 08.75			4.5	UL	5.0	B		7			3.5		MUR01
1974 01 09.5			3.6	UL	6.5	B		20	3		2		CLA
1974 01 09.67			4.0	UX	3.0	B		8		7	1.5		WHY
1974 01 09.7	!		4.2	SP	4.0	B		8		7	1	80	BUR
1974 01 09.70			3.8	UL	25.4	L		48	4.5	7	2.5		DOH
1974 01 09.72			3.9	SP	6.3	B		9	3	8	4	55	YOU02
1974 01 09.73			3.8	UX	3.0	B		8		8	2	60	BRE
1974 01 09.73			4.0	UX	5.0	B		7			1	10	CLA01
1974 01 09.73			4.0	UL	0.0	E		1	7		3.5		FER02
1974 01 09.73			4.2	UX	5.0	B		7	0.7	5	0.5	60	HOW
1974 01 09.74			4.6	AA	5.0	B		7	5	6	4		PAN
1974 01 09.75			4.1	UL	4.0	B		12			3	80	HEN01
1974 01 09.75			4.5	UX	4.0	B		8					TAY
1974 01 09.77			4.5	UL	5.0	B		7			3.5		MUR01
1974 01 10.73			4.7	UL	21.6	L	8	70			0.4	88	KEM
1974 01 10.74			4.7	UX	4.0	B		12	1.5		5	60	HEN01
1974 01 10.74			4.8	LN	5.0	B		7	6		2	55	ROT
1974 01 10.74			4.8	UX	5.0	B		7		2	2.5	55	HEA01
1974 01 10.74	!		4.2	SP	6.3	B		9	3	7	5	60	YOU02
1974 01 10.75			3.2	UX	4.0	B		8		8	3		SHE02
1974 01 10.75			4.8	UX	5.0	B		7		6	4		GAI
1974 01 10.76			3.2	S	8.0	B		11	3	7	13	65	MIL01
1974 01 11.5			3.8	UL	6.5	B		20	3		2		CLA
1974 01 11.63			4.3	UX	3.0	B		8					WHY
1974 01 11.7			4.7	SP	8.0	B		10	2.7	7	4		ROG02
1974 01 11.73			5.2	UX	3.0	B		8		8	0.5	50	BRE
1974 01 11.74			3.0:	UL	0.0	E		1	6	7	5		GAV
1974 01 11.74			4.2	UL	5.0	B		16	4	3	5	65	AND07
1974 01 11.74			4.5	UX	10	R		68	5		5		VER
1974 01 11.74			5.0	UX	5.0	B		7	0.7	7	3	65	HOW
1974 01 11.75			4.0	UL	8.0	B		20			1.5		HAM01
1974 01 11.75			4.1	UX	5.0	B		10			8		DOH

Comet C/1973 E1 (Kohoutek) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1974 01 11.75			4.3	UX	11.5	R		70			2		RID
1974 01 11.75			5.0	UL	6	R		50					STE11
1974 01 11.75			5.0	UL	5.0	B		10	9				NAP01
1974 01 11.75			5.1	UX	5.0	B		7					GAI
1974 01 11.77			3.5	UX	3.0	B		8		6	9		MAD
1974 01 12.44			4.2	UL	5.0	B		16	6	6			DEJ
1974 01 12.7			5.1	SP	4.0	B		8		5	3	65	BUR
1974 01 12.75			4.0:	UL	5	R					5		SIM02
1974 01 12.75			5.0	UL	5.0	B		7			5		BEE01
1974 01 12.77			5.0	UL	5.0	B		7			5.5		MUR01
1974 01 13.40			3.5	UL	3.0	B		8			0.5		THO
1974 01 13.44			4.2	UL	5.0	B		16	4		0.2		DEJ
1974 01 13.68			4.0	UX	3.0	B		8	5	7	4		WHY
1974 01 13.71			4.5	UX	5.0	B		10	3.5	7	5		DOH
1974 01 13.72			3.0:	UL	6.0	B		10			1.5		HEN
1974 01 13.72			4.6	UX	5.0	B		7	2.5	5	2		NIG
1974 01 13.72			5.0	UL	9.0	B		12			3.5		VER01
1974 01 13.73			4.9	UX	4.0	B		8					TAY
1974 01 13.74			5.0	UX	5.0	B		7			3	25	CLA01
1974 01 13.74			5.9	UL	5.0	B		10		5			HIG01
1974 01 13.75			4.5	UL	15	L	8	48	27		4		LEW
1974 01 13.75			4.5	UX	2.5	B		8	5	6	0.75	65	HAY04
1974 01 13.75			5.5	UL	6	R		50					STE11
1974 01 13.76			5.0:	UL	21.6	L	8	70		6	20	79	KEM
1974 01 13.77			5.0:	UL	5.0	B		10			5		NAP01
1974 01 14.45			4.3	UL	5.0	B		16	5	4	0.2		DEJ
1974 01 14.5			4.2	UL	6.5	B		20	3		2.5		CLA
1974 01 14.77			5.5	UL	6	R		50					STE11
1974 01 14.77			5.5	UL	20	D					1		SIM02
1974 01 15.44			4.4	UX	5.0	B		16	4	4			DEJ
1974 01 15.7			5.3	SP	8.0	B		10					ROG02
1974 01 15.72			5.5	UX	5.0	B		10	5.0	7	3		DOH
1974 01 15.73			5.1	UX	7	M					3.5		NIG
1974 01 15.75			5.3	UX	3.0	B		8			3	64	BRE
1974 01 15.76			4.5	UX	11.5	R		70			2	50	RID
1974 01 15.77			5.0	UL	3.0	B		8					STE11
1974 01 15.80			4.8	UX	5.0	B		7	5	6	3		STU
1974 01 16.77			6.3	UL	5.0	B		7			6		MUR01
1974 01 17.04			5.0:	UL	5.0	B		7			5		BRY
1974 01 17.45			4.6	UL	5.0	B		16				50	DEJ
1974 01 18.41			4.5	UL	0.0	E		1					THO
1974 01 18.76			5.2	UX	2.5	B		8	6	6	0.3	70	HAY04
1974 01 18.77			6.5	UL	5.0	B		10	5	3	2.5		NAP01
1974 01 19.06			5.0	UX	5.0	B		7			3	60	BRY
1974 01 19.5			4.6	UL	6.5	B		20	3		2		CLA
1974 01 19.67			5.0	UX	3.0	B		8		5	2		WHY
1974 01 19.7			5.6	SP	4.0	B		8	4	6	4	80	BUR
1974 01 19.70			5.3	UX	2.5	B		8	5	5	0.3	70	HAY04
1974 01 19.71			5.0	UX	5.0	B		10	7.5	7	3.5		DOH
1974 01 19.73			5.3	UL	7	M					4.5		NIG
1974 01 19.75			4.5	UL	6.8	R		10					FRY
1974 01 19.75			5.6	S	0.0	E		1	5	7	6	65	YOU02
1974 01 19.76			5.0	UL	3.0	B		8					STE11
1974 01 19.76			5.2	SP	5.0	B		7		6	1	55	ROT
1974 01 19.76			5.5	UL	5.0	B		7			2		PIC
1974 01 19.76			5.5	UL	5.0	B		12	5	6	5.5	70	AND07
1974 01 19.76			5.7	UX	5.0	B		7	5	5	1		GAI
1974 01 19.77			4.8	UX	8.0	B		20					HAM01
1974 01 19.77			5.4	UX	5.0	B		7			2	30	CLA01
1974 01 19.77			5.5	S	8.0	B		11	8	5	3	58	MIL01
1974 01 19.78			5.2	UX	5.0	B		7		3	1	53	HEA01
1974 01 19.78			5.2	UL	4.0	B		12			3.5		SZC
1974 01 19.78			5.8	SP	8.0	B		10	4.5		3.5	62	ROG02
1974 01 19.79			5.0	SP	3.0	B		8			2	60	BRE
1974 01 19.80			4.0:	UL	6.0	B		13	4	5	5.5	63	HEN

Comet C/1973 E1 (Kohoutek) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1974 01 19.80			5.8	S	5.0	B		10	10		2		HUR
1974 01 19.81			5.5	UX	5.0	B		10			5		PAC
1974 01 19.82			5.6	UX	5.0	B		7	5	5	2	55	STU
1974 01 20.07			5.0	UX	5.0	B		7			6		BRY
1974 01 20.41			4.8	UL	3.0	B		8					THO
1974 01 20.42			5.6	S	5.0	B		7					MAT01
1974 01 20.53			5.0	UL	6.0	B		16	5	4			DEJ
1974 01 20.71			5.5	UX	5.0	B		10	7.0	5	2.7		DOH
1974 01 20.74			5.9	S	3.0	B		8		6	2	50	BRE
1974 01 20.78			5.6	UX	4.0	B		8					TAY
1974 01 20.8			5.6	UX	5.0	B		7	5	5	0.3	55	STU
1974 01 21.08			5.0:	UL	5.0	B		7			4		BRY
1974 01 21.41			6.1	S	5.0	B		7	5		3.5	45	JON01
1974 01 21.53			5.2	UL	5.0	B		16	5	3			DEJ
1974 01 21.73			5.6	UX	7	M					3		NIG
1974 01 21.76			5.6	UX	5.0	B		7	5	5	2	55	STU
1974 01 22.53			5.4	UL	5.0	B		16					DEJ
1974 01 22.77			6.0	UX	5.0	B		7			1.5	25	BUR02
1974 01 22.83			7.8	S	16	L		50	3	6			LEM
1974 01 23.76			6.0	AA	5.0	B		7	4.5	5	0.75		GAI
1974 01 23.76			6.0	UX	4.0	B		8		5			TAY
1974 01 23.76			6.2	UX	3.0	B		8		6	1.3	66	BRE
1974 01 23.77			5.3	UX	5.0	B		10	2.5				LYO
1974 01 23.77			5.8	S	5.0	B		7		6			HEA01
1974 01 23.77			5.8	UX	5.0	B		16		5			ROB01
1974 01 23.79			5.5	UL	3.0	B		8					STE11
1974 01 23.79			7.0:	UL	7.6	R		50	13				FER02
1974 01 23.80			5.8	UX	8.0	B		11			0.5		BRI02
1974 01 23.80			6.1	S	5.0	B		7	4				ROT
1974 01 23.81			5.6	AA	8.0	B		11	9	4	0.5	65	PAN
1974 01 23.83			6.3	S	5.0	B		10	10		1	65	HUR
1974 01 23.84			5.0	UX	8.0	B		20					HAM01
1974 01 23.84			6.3	S	11.5	R		70		6	2.5	55	RID
1974 01 23.85			5.5	UL	6.8	R		10					FRY
1974 01 24.55			5.7	UL	5.0	B		16		2			DEJ
1974 01 24.70			5.8	UX	2.5	B		8	3.5	2	0.2	80	HAY04
1974 01 24.72			5.9	UX	3.0	B		8		4	0.5		WHY
1974 01 24.74			5.9	SP	4.0	B		8					ROG02
1974 01 24.74			6.0	UX	5.0	B		10	10	6	2		DOH
1974 01 24.75			5.5	UL	6.8	R		10					FRY
1974 01 24.75			5.5	UX	8.0	B		20					HAM01
1974 01 24.77			5.8	UL	4.0	B		12			2		SZC
1974 01 24.77			6.0	UL	5.0	B		16	4		2	65	AND07
1974 01 24.77			6.1	S	5.0	B		7	7	3	0.5	70	HOW
1974 01 24.78			5.8	S	8.0	B		11	5	4	1.5	58	MIL01
1974 01 24.78			6.4	S	5.0	B		10	10		1		HUR
1974 01 24.79			6.0	UL	5.0	B		7					PIC
1974 01 24.79			6.1	UL	3.0	B		8					STE11
1974 01 24.79			8.0	S	16	L		50	2	6	2		LEM
1974 01 24.8			6.0	SP	4.0	B		8	4		2.5	70	BUR
1974 01 24.81			6.1	S	5.0	B		7			5		ROT
1974 01 24.82			6.3	S	11.5	R		70			2	60	RID
1974 01 25.73			6.2	S	5.0	B		7		4			HEA01
1974 01 25.75			6.2	SP	3.0	B		8			1	35	BRE
1974 01 25.76			6.0	SP	5.0	B		10	2.5				LYO
1974 01 25.76			6.1	UX	5.0	B		10	10				DOH
1974 01 25.77			5.8	UL	4.0	B		12					SZC
1974 01 25.77			5.9	VB	5.0	B		16		4		30	HUF
1974 01 25.77			6.5	UL	3.0	B		8					STE11
1974 01 25.79			5.9	UX	5.0	B		7			1	10	CLA01
1974 01 25.79			6.1	S	5.0	B		7	2.8	3			ROT
1974 01 25.8			6.1	SP	4.0	B		8		5	1.5	70	BUR
1974 01 25.8			6.4	SP	8.0	B		10	2.3		0.9	64	ROG02
1974 01 25.80			6.7	S	5.0	B		10	15		1.5	65	HUR
1974 01 25.81			5.2	UX	5.0	B		7	5	5	0.75		GAI

Comet C/1973 E1 (Kohoutek) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1974 01 25.82			6.7	UL	8.0	B		20					HAM01
1974 01 25.83			6.6	S	11.5	R		70	6	5			RID
1974 01 26.09			5.7	UL	5.0	B		7			3	50	BRY
1974 01 26.76			6.3	UX	5.0	B		10	11	6	1.3		DOH
1974 01 26.83			5.8	UX	5.0	B		10			2		PAC
1974 01 26.83			7.1	S	16	L		50	3	5	0.5	40	LEM
1974 01 28.51			5.9	UL	5.0	B		16		3			DEJ
1974 01 29.77			7.7	UL	8.0	B		20					HAM01
1974 01 29.8			6.5	SP	8.0	B		10	2.4			70	ROG02
1974 01 29.8			6.9	SP	4.0	B		8					BUR
1974 01 29.80			7.1	UL	5.0	B		10		4			HIG01
1974 01 29.82			7.0	UL	5.0	B		7					PIC
1974 01 30.54			6.3	UL	5.0	B		16	3	2			DEJ
1974 01 31.76			6.5	UX	5.0	B		10	7				DOH
1974 02 01.74			7.5:	UL	7	M			2	4			NIG
1974 02 01.78			6.8	UL	4.0	B		12					SZC
1974 02 01.79			8.4	S	16	L		50	2.5	3			LEM
1974 02 02.77			6.7	S	5.0	B		10		5	0.25	50	HUR
1974 02 02.79			8.0	UL	25	L		65		3			PIC
1974 02 02.8			7.5	S	8.0	B		10					ROG02
1974 02 02.8			7.7	S	32	R	18	80	2.0		0.1		ROG02
1974 02 02.80			7.3	UL	7.7	R		84			1		HIG01
1974 02 02.81			7.4	S	7.5	R		44	1.3	3			HEA01
1974 02 02.83			8.2	S	16	L		50	2.5	3			LEM
1974 02 02.86			6.9	S	15.3	L		46	2	2			HAY04
1974 02 03.75			8.2	S	3.0	B		8					BRE
1974 02 03.77			7.1	S	5.0	B		7	5	3	0.25	60	HOW
1974 02 03.78			8.4	S	5.0	B		7					CLA01
1974 02 03.80			8.0	UL	25	L		65	1.5				PIC
1974 02 03.80			8.3	S	15	L		48	6	4			STU
1974 02 04.54			6.7	UL	5.0	B		16					DEJ
1974 02 04.78			9.2	S	21	L		35	2.3	3			GAI
1974 02 04.79			8.5	UL	8.0	B		20					HAM01
1974 02 04.8			7.6	S	32	R	18	80	3	2			BUR
1974 02 04.81			8.6	S	11.5	R		70	6				RID
1974 02 04.82			6.6	AA	8.0	B		11	12	4			PAN
1974 02 04.82			8.0	UL	25	L		65	1.5				PIC
1974 02 06.80			7.7	S	5.0	B		7	5	3			HOW
1974 02 07.76			8.7	UL	8.0	B		20					HAM01
1974 02 07.78			8.3	S	15	L		24	4	4			STU
1974 02 07.78			8.4	S	5.0	B		7					CLA01
1974 02 07.8			9.5	S	32	R	18	80					BUR
1974 02 07.8			10.3	S	32	R	18	80	1.6	2			ROG02
1974 02 08.79			9.0:	UL	7.6	R		50	1				FER02
1974 02 09.71			8.5	UL	5.0	B		7		3			NIG
1974 02 09.76			8.7	UL	8.0	B		20					HAM01
1974 02 09.77			8.4	S	5.0	B		10	15				HUR
1974 02 09.78			7.2	UX	5.0	B		10	6	4			DOH
1974 02 09.79			7.5	UL	25	L		65	5	3			PIC
1974 02 09.79			8.1	S	11.5	R		70	4		0.25	60	RID
1974 02 09.8			7.6	S	4.0	B		8	4	5	1		BUR
1974 02 09.80			6.7	UM	6.0	B		13	8	3	1	80	HEN
1974 02 09.82			8.4	S	21	L		35	4	4			GAI
1974 02 09.87			10.3	HS	16	L		50	2	2			LEM
1974 02 09.88			8.3	S	15.3	L		46	2	3			HAY04
1974 02 10.80			8.9	S	15	L		24	5	4	0.3		STU
1974 02 11.42			10.0:	UL	30	L		40		3			MAT01
1974 02 11.86			8.6	S	15	L		48	5	4		65	STU
1974 02 12.42			11.0:	UL	30	L		40		3			MAT01
1974 02 12.79			8.6	S	15	L		24	4	3			STU
1974 02 16.78			7.5	UL	4.0	B		12					SZC
1974 02 16.81			8.5	UL	25	L		65	10	3		30	PIC
1974 02 16.9			10.0:	S	32	R	18	80	4	2			BUR
1974 02 21.89			10.0:	UL	11.5	R		70		2			RID
1974 02 22.8			10.5:	S	32	R	18	80	2	2			BUR

Comet C/1973 E1 (Kohoutek) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1974 02 22.80			9.3	UL	15	L		60		1		185	AND07
1974 02 22.80			9.5	UL	11.5	R		70	4	2			RID
1974 02 22.81			8.7	AA	8.0	B		11	7	2			PAN
1974 02 22.81			8.9	S	15	L		24		3			STU
1974 02 22.82			10.1	HS	32	R		80	2.4	3			ROG02
1974 02 22.83			9.3	UL	8.0	B		20					HAM01
1974 02 22.84			8.6	S	15.3	L		46	3.5	3			HAY04
1974 02 22.85			9.5	UL	25	L		65	10	2			PIC
1974 02 23.80			8.4	S	15	L		24	5	2			STU
1974 02 24.80			9.5	UL	8.0	B		20					HAM01

Comet C/1975 T1 (Mori-Sato-Fujikawa)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1975 10 24.83			9.1		5.0	B		10	< 1				CLA
1975 10 26.83			8.9		5.0	B		10	< 1				CLA
1975 10 27.22			8.7	S	4.0	B		8					BRE
1975 11 17.83			8.3		5.0	B		10	1				CLA
1975 11 27.81			8.2		5.0	B		10	1				CLA

Comet C/1975 T2 (Suzuki-Saigusa-Mori)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1975 10 11.20			8.5		7.0	B		15	5	5			KEI02
1975 10 11.20			8.6	AA	8.0	B		11	4	3			PAN
1975 10 12.11			8.5:		15	L		24	3	2			STU
1975 10 13.16			8.3	AA	8.0	B		11	6	3			PAN
1975 10 15.17			7.9	AA	8.0	B		11	4	2			PAN
1975 10 16.18			8.0	S	4.0	B		8	5	3			BRE
1975 10 25.22			7.1	S	4.0	B		8	13	2			BRE
1975 10 27.19			6.3	S	4.0	B		8	11	2			BRE
1975 10 28.22			6.4	AA	8.0	B		11	6	2			PAN
1975 10 28.76			7.7	S	16	L		50	12	2			LEM
1975 11 02.50			4.4		5.0	B		10		2			CLA
1975 11 03.50			4.6		5.0	B		10		2			CLA
1975 11 04.50			4.8		12.5	L	5	45	8				CLA
1975 11 05.50			5.1		12.5	L	5	45					CLA
1975 11 06.50			5.4		12.5	L	5	45					CLA
1975 11 07.50			5.7		12.5	L	5	45					CLA
1975 11 08.50			6.0		12.5	L	5	45					CLA
1975 11 09.50			6.3		12.5	L	5	45					CLA
1975 11 10.50			6.6		12.5	L	5	45					CLA
1975 11 11.50			6.9		12.5	L	5	45					CLA

Comet C/1975 V1 (West)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1976 03 01.25			-1.5	UX	6.3	R		45		8	1.0		SAW02
1976 03 02.24			-0.5	UX	3.0	B		8		8	3.5	10	SAW02
1976 03 04.23			1.0	UX	6.3	R		45		7	3.0	40	SAW02
1976 03 05.22			1.8	UX	15	L					2.0		SAW02
1976 03 15.14		B	4.3	AA	11	B		20					VEL03
1976 03 24.10		B	4.8	AA	11.0	B		20			1		VEL03
1976 04 04.09		B	5.7	AA	11.0	B		20					VEL03
1976 04 17.05		B	7.6	AA	11.0	B		20					VEL03
1976 04 24.01			7.4	S	5.0	B		10					ROG02
1976 04 24.02		B	8.8	AA	11.0	B		20					VEL03
1976 04 28.01			7.1	S	5.0	B		10	4.5	3	1.08	280	ROG02
1976 05 08.98		B	8.1	AA	11.0	B		20					VEL03
1976 06 28.01			10.3	UL	25.4	L		48	1.5	2			DOH
1976 06 28.99			10.5	UL	25.4	L		48	1.5	2			DOH
1976 06 30.98			10.8	UL	25.4	L		48	1.5	2			DOH
1976 07 01.99			10.6	UL	25.4	L		48	1.5	2			DOH
1976 07 17.96			11.0	UL	25.4	L		44	1	1			DOH

Comet C/1975 V1 (West) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1976 07 21.96			11.5	UL	25.4	L		44	4.5	2			DOH
1976 07 23.00			11.5	UL	25.4	L		44	3.5	1			DOH

Comet C/1975 V2 (Bradfield)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1975 12 27.72			3.8	SP	5.0	B		10	6	7			HAT
1976 01 03.73			6.5		7.2	L		60	2				FRY
1976 01 03.73			6.5		5.0	B		10		3			TAY
1976 01 03.73			6.5	SP	6.3	R		45		8	0.17		SAW02
1976 01 03.73			6.5:	S	21	L		35	0.3	8			GAI
1976 01 03.73			6.8		8.0	B		11		8	0.17	30	MIL01
1976 01 03.73			6.8	S	11.5	R		90	1.5	8			RID
1976 01 03.73			7 :		6.0	B		13	5	6			HEN
1976 01 03.74			6.1	AA	8.0	B		11	8	3			PAN
1976 01 03.74			6.6		5.0	B		10	0.7	8	0.01		DOH
1976 01 08.72			6.0		8.4	L		61					MAR
1976 01 09.75			7.6	S	6	R		35	2.5				STA
1976 01 14.74			7.8		25.5	L		48	1	6			DOH
1976 01 20.76			10.0	HS	21.5	L	7	57	5	3			DRI
1976 01 20.79			8.7	S	11.5	R		70	4	3			RID
1976 01 20.79			9.1	HS	21.5	L		35	2.5	2			GAI
1976 01 20.81			9.5		6.0	B		13	> 6	3			HEN
1976 01 21.82			9.0	S	21.5	L		35	0.5	2			GAI
1976 01 22.78			9.0	S	21.5	L		24	3	3			STU
1976 01 23.77			9.9	HS	21.5	L	7	57	5	3			DRI
1976 01 23.78			9.7	HS	21.5	L		24	3.5	3	0.33	120	STU
1976 01 24.76			9.5		25.5	L		48	1	2			DOH
1976 01 25.77			8.6	S	21.5	L		57	4	2			DRI
1976 01 25.77			10.0		25.5	L		48	1	2			DOH
1976 01 30.80			10.0		25.5	L		48	0.9	2			DOH

Comet C/1975 X1 (Sato)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1975 12 12.25			9.1	S	26	L		40	3	3			HUR

Comet C/1976 D1 (Bradfield)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1976 03 26.89			10.5:		26	L		80	3	0			HUR
1976 04 04.87			11.3	VB	26	L		80	2	1			HUR
1976 04 19.87			12 :		26	L		120	2	1			HUR

Comet C/1977 V1 (Tsuchinshan)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1977 11 12.90			[12.5:	UL	26	L		80					HUR

Comet C/1984 N1 (Austin)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1984 09 07.05		B	6.7	AA	8	R	10	28	5	4			MAI
1984 09 09.05		B	6.8	AA	8	R	10	28	5	4			MAI
1984 09 11.06		B	7.0	AA	8	R	10	28	5	3			MAI
1984 09 16.06		B	7.6	AA	8	R	10	28	6	3			MAI
1984 09 18.06		B	7.8	AA	8	R	10	28	6	2			MAI
1984 09 19.07		B	8.1	AA	8	R	10	28	6	2			MAI
1984 09 22.08		B	8.3	AA	8	R	10	28	7	2			MAI
1984 09 24.06		B	8.4	AA	8	R	10	28	7	1			MAI
1984 09 27.01		B	8.7	AA	8	R	10	28	7	1			MAI
1984 09 28.06		B	8.8	AA	8	R	10	28	8	1			MAI
1984 09 30.00		B	9.0	AA	8	R	10	28	8	0			MAI
1984 10 02.01		B	9.3	AA	8	R	10	28	8	0			MAI

Comet C/1987 P1 (Bradfield)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 10.69		B	6.9	AA	8	R	10	28	4	3			MAI
1987 10 11.67		B	6.9	AA	8	R	10	28	4	3			MAI
1987 10 15.67		B	6.7	AA	8	R	10	28	4	4			MAI
1987 10 16.67		B	6.7	AA	8	R	10	28	4	4			MAI
1987 10 18.67		B	6.7	AA	8	R	10	28	5	4			MAI
1987 10 20.67		B	6.4	AA	8	R	10	28	5	4			MAI
1987 10 25.67		B	6.1	AA	8	R	10	28	5	5	0.5		MAI
1987 11 01.69		B	5.8	AA	8	R	10	28	7	5	0.5		MAI
1987 11 09.67		B	5.5	AA	8	R	10	28	8	7	1.0		MAI
1987 11 11.66		B	5.5	AA	8	R	10	28	8	8	1.0		MAI
1987 11 28.67		B	5.6	AA	8	R	10	28	8	8	0.5		MAI
1987 11 29.63		B	5.6	AA	8	R	10	28	7	5	0.5		MAI
1987 12 04.65		B	5.7	AA	8	R	10	28	7	5	0.5		MAI
1987 12 24.67		B	5.9	AA	5.0	B	10	7			2.0	60	VEL03
1988 01 04.72		B	6 :	AA	11	L	7	32	5				VEL03
1988 01 05.68		B	6.5	AA	11	L	7	32	10				VEL03
1988 01 06.72		B	7 :	AA	11	L	7	32	20				VEL03
1988 01 14.73		B	7.5	AA	5.0	B		7	5				VEL03
1988 01 15.71		B	7.5	AA	11	L	7	32					VEL03
1988 01 16.71		B	7.5	AA	11	L	7	32					VEL03

Comet C/1988 A1 (Liller)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1988 04 10.78		B	6 :	AA	5.0	B		7	4				VEL03
1988 04 14.79		B	6 :	AA	5.0	B		7			0.3	0	VEL03
1988 04 15.78		B	6.2	AA	11	L	7	32			0.6	340	VEL03
1988 04 16.80		B	6.2	AA	5.0	B		7			1.0	350	VEL03
1988 04 17.79					5.0	B		7			0.5	350	VEL03
1988 05 04.81					11	L	7	7	8		1.0	0	VEL03
1988 05 04.81		B	7.0	AA	5.0	B		7					VEL03
1988 05 08.82		B	6.5:	AA	5.0	B		7			1.0	15	VEL03
1988 05 11.82		B	6.5:	AA	5.0	B		7	12		0.5	35	VEL03
1988 05 14.82		B	6.5:	AA	5.0	B		7					VEL03

Comet C/1989 Q1 (Okazaki-Levy-Rudenko)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1989 08 31.93		S	9.7	AA	29.8	L	5	62	2.8	2/			KEI
1989 09 01.89		S	9.5	AA	29.8	L	5	62	3.0	3			KEI
1989 09 06.89		S	9.3	AA	8.0	B		20	4.0	1/			KEI
1989 09 19.78		B	8.9:	TI	8.0	B		10					HORO2
1989 09 20.84		S	8.0	AA	8.0	B		20	4.6	4/	0.17	94	KEI
1989 09 20.84		S	8.0	AA	5.0	B		10					KEI
1989 09 22.79		B	8.6	TI	8.0	B		10					HORO2
1989 09 23.79		B	9.0:	TI	8.0	B		10					HORO2
1989 09 24.79		B	9.3:	TI	10	B		25					MACO2
1989 09 24.83		S	8.0	AA	5.0	B		10	2.4				KEI
1989 09 24.83		S	8.0	AA	8.0	B		20	2.4	5			KEI
1989 09 29.77		B	9.1	TI	10	B		25	4				PRA01
1989 09 29.79		B	8.9	TI	10	B		25					MACO2
1989 09 30.81		S	7.8	AA	8.0	B		20	3.9	5	0.17	82	KEI
1989 10 01.74		B	8.1	TI	8.0	B		10	6				HUDO2
1989 10 01.76		B	9.0	TI	10	B		25					PRA01
1989 10 01.77		B	8.2	TI	8.0	B		10					HORO2
1989 10 03.73		B	8.2	TI	8.0	B		10	6				HUDO2
1989 10 03.77		B	8.3	TI	10	B		25	5		0.2		PRA01
1989 10 03.78		B	8.2	TI	8.0	B		10	6	7			HORO2
1989 10 04.77		B	8.1	TI	8.0	B		10	5				HORO2
1989 10 04.78		B	8.1	TI	8.0	B		10					HUDO2
1989 10 04.82		S	7.7	AA	5.0	B		10	3.9	6			KEI
1989 10 04.82		S	7.8	AA	8.0	B		20	2.6	6	0.20	44	KEI
1989 10 05.75		B	7.7:	TI	10	B		25					MACO2
1989 10 05.77		B	7.8:	TI	8.0	B		10	5				HORO2
1989 10 05.84		S	7.6	AA	5.0	B		10	2.6	6	0.27	40	KEI

Comet C/1989 Q1 (Okazaki-Levy-Rudenko) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1989 10 07.83		S	7.7	AA	5.0	B		10	2.6	6	0.33	40	KEI
1989 10 16.74		B	8.4	TI	10	B		25		7	0.2		PRA01
1989 10 16.78		S	6.9	AA	5.0	B		10	2.9	7	0.42	44	KEI
1989 10 17.71		B	7.4	TI	10	B		25					MAC02
1989 10 17.73		B	7.1	TI	8.0	B		10					HUD02
1989 10 17.73		B	8.0	TI	10	B		25			0.2		PRA01
1989 10 17.74		B	7.2	TI	8.0	B		10		5	0.25		HOR02
1989 10 17.74		B	8.1	TI	8.0	B		10					PRA01
1989 10 18.74		B	7.7	TI	8.0	B		10	8				HUD02
1989 10 19.74		B	7.2	TI	10	B		25			0.3		PRA01
1989 10 19.74		B	7.3	TI	8.0	B		10					HUD02
1989 10 20.17		B	6.0	AA	5.0	B		7	10				VEL03
1989 10 22.73		B	6.3	AA	11	L	7	32	6				VEL03
1989 10 22.73		B	7.5	TI	10	B		25		6			PRA01
1989 10 23.69		B	6.3	AA	11	L	7	32	6				VEL03
1989 10 23.73		B	7.0	TI	8.0	B		10					HOR02
1989 10 23.73		B	7.4	TI	10	B		25			0.2		PRA01
1989 10 24.72		B	7.2	TI	10	B		25			0.4		PRA01
1989 10 24.75		B	7.4	TI	8.0	B		10	5		0.15		HUD02
1989 10 26.72		B	7.9:	TI	10	B		25					PRA01
1989 10 28.73		B	7.5	TI	10	B		25					MAC02
1989 11 10.20		B	6.6	TI	8.0	B		10					HOR02
1989 11 11.19		B	6.1:	TI	8.0	B		10					HUD02
1989 11 16.19		B	6.0	TI	5.0	B		7			0.6		PRA01
1989 11 17.18		B	6.1	TI	8.0	B		10					HUD02
1989 11 18.18		B	6.4	TI	10	B		25			0.35		PRA01
1989 11 18.19		B	6.3	TI	8.0	B		10					POD
1989 11 18.19		B	6.6	TI	5.0	B		7					PRA01
1989 11 18.21		B	6.0:	TI	8.0	B		10					HUD02
1989 11 19.15		B	6.0	AA	11	L	7	32		5			VEL03
1989 11 19.19		B	6.0	TI	8.0	B		10					POD
1989 11 19.22		B	6.6	TI	8.0	B		10					HUD02
1989 11 29.19		B	5.9	TI	8.0	B		10		5			HOR02

Comet C/1989 X1 (Austin)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1990 04 04.84		S	4.5	AA	5.0	B		10	4.4	7			KEI
1990 04 05.84		S	4.4	AA	8.0	B		20	2	8/	0.67	41	KEI
1990 04 17.10		B	4.4	TI	5.0	B		7					VAN11
1990 04 18.10		B	4.6:	TI	5.0	B		7					VAN11
1990 04 18.11		B	4.9	TI	8.0	B		10	6		0.2		HOR02
1990 04 19.23		S	4.5	AA	5.0	B		10	2	8/		315	KEI
1990 04 20.12		B	4.4:	TI	10	B		25					STE10
1990 04 21.23		S	4.9	AA	5.0	B		10	2	8/	1.67	351	KEI
1990 04 25.22		S	5.1	AA	3.2	B		6	2.5	8	1.01	318	KEI
1990 04 27.11		B	5.0	TI	4.0	B		11	8		0.6		STE10
1990 04 28.09		B	4.9	TI	4.0	B		11			0.6		STE10
1990 04 29.08		B	5.0	TI	5.0	B		10					FAB
1990 04 29.09		B	5.0	TI	5.0	B		7			0.15		HLO
1990 04 29.21		S	5.1	AA	5.0	B		10	2.7	7	0.67	295	KEI
1990 04 30.08		B	4.9	TI	4.0	B		11			0.3		STE10
1990 04 30.21		S	5.4	AA	5.0	B		10	2.8	7	1.16	294	KEI
1990 05 01.07		B	5.1	TI	5.0	B		7					HLO
1990 05 01.10		S	5.1	SC	8.0	B		20	5	5	1	291	SCH05
1990 05 02.06		B	5.3	AA	8.0	B		11		5			GRO
1990 05 02.08					25.4	L	4	45	4.3		0.29	295	GRO
1990 05 02.08		B	5.7	TI	8.0	B		10					HOR02
1990 05 02.09		B	5.1	TI	10	B		25	7				PRA01
1990 05 02.10		S	5.1	SC	8.0	B		20	5	5	1.7	284	SCH05
1990 05 02.21		S	5.4	AA	3.2	B		6	4.0	6/	1.0	287	KEI
1990 05 03.05		B	5.4	TI	5.0	B		7					HLO
1990 05 03.05		B	5.6	TI	5.0	B		10					FAB
1990 05 03.06		B	5.4	TI	5.0	B		7	9				DVO
1990 05 03.06		B	5.4	TI	5.0	B		7					VAN11

Comet C/1989 X1 (Austin) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1990 05 03.06		B	5.5	TI	5.0	B		7	12				DUS01
1990 05 03.07		B	5.6	TI	4.0	B		11			0.6		STE10
1990 05 03.07		B	5.8	TI	8.0	B		10					POD
1990 05 03.09		S	5.0	SC	8.0	B		20	5	6	3	293	SCH05
1990 05 04.05		B	5.4:	TI	5.0	B		7	7				DVO
1990 05 04.06		B	5.5	AA	8.0	B		11		4			GRO
1990 05 04.06		B	5.6	TI	5.0	B		7					VAN11
1990 05 04.07		B	5.4	TI	10	B		25	12				PRA01
1990 05 04.07		B	5.4	TI	8.0	B		10	9	6	1.4		HOR02
1990 05 04.08					25.4	L	4	45	6		0.19	273	GRO
1990 05 04.09		S	4.8	SC	8.0	B		20	5	6	2	290	SCH05
1990 05 05.05		B	5.4	TI	4.0	B		12	10				NEJ
1990 05 05.05		B	5.5	TI	5.0	B		7	12				DVO
1990 05 05.06		B	5.4	TI	6.0	B		12					TRU01
1990 05 05.06		B	5.4	TI	5.0	B		7					VAN11
1990 05 05.07		B	5.6	TI	8.0	B		10					POD
1990 05 05.08		B	5.4	TI	5.0	B		7					HLO
1990 05 05.09		B	5.5	TI	4.0	B		11			0.4		STE10
1990 05 05.09		S	4.B	SC	8.0	B		20	6	6	2	280	SCH05
1990 05 05.15		S	4.6	AA	5.0	B		12	12.1	5/	0.5	294	BRI03
1990 05 06.05		B	5.7	TI	5.0	B		7	12				DVO
1990 05 06.08		B	5.5:	TI	4.0	B		11			0.6		STE10
1990 05 07.04		B	5.5	TI	6.0	B		12	12				TRU01
1990 05 07.04		B	5.5	TI	5.0	B		7	8				DVO
1990 05 07.05		B	5.5	TI	4.0	B		12					NEJ
1990 05 07.07		B	5.3	TI	5.0	B		7	11				DUS01
1990 05 07.08		B	5.5	TI	4.0	B		11			0.5		STE10
1990 05 07.09		S	4.8	SC	8.0	B		20	5	6	2	286	SCH05
1990 05 07.10		S	5.4	AA	2.5	B		3					KEI
1990 05 07.10		S	5.6	AA	3.2	B		6	5.5	6/			KEI
1990 05 07.10		S	5.6	AA	5.0	B		10	5.5	7/			KEI
1990 05 09.05		B	5.8	TI	8.0	B		10					REZ
1990 05 11.05		B	6.4:	TI	8.0	B		10					REZ
1990 05 11.08		B	6.3:	TI	10	B		25			0.7		STE10
1990 05 12.02		B	5.8:	TI	4.0	B		8					BEG
1990 05 13.05		B	5.7	TI	5.0	B		7					DVO
1990 05 13.07		B	6.1	TI	10	B		25			0.35		STE10
1990 05 13.07		S	5.2	SC	8.0	B		20	6	4			SCH05
1990 05 14.03		B	5.4	TI	6.0	B		12					TRU01
1990 05 14.05		B	5.3:	TI	5.0	B		7					ROL
1990 05 14.05		B	5.5	TI	5.0	B		7					DVO
1990 05 14.06		S	5.2	SC	8.0	B		20	6	4			SCH05
1990 05 15.04		B	5.7	TI	5.0	B		7	16				DVO
1990 05 15.04		S	5.2	SC	8.0	B		20	6	4	1.5	285	SCH05
1990 05 15.05		B	5.8	TI	10	B		25			0.55		STE10
1990 05 15.07		B	5.8	TI	5.0	B		7					HLO
1990 05 15.98		B	6.1	TI	5.0	B		7					JAN03
1990 05 16.00		B	5.9	TI	8.0	B		10	10				PRA01
1990 05 16.03		B	5.9	TI	5.0	B		7	5				PRA01
1990 05 16.05		B	5.3:	TI	5.0	B		7					ROL
1990 05 16.05		B	5.9	TI	8.0	B		10					RAP
1990 05 16.05		B	5.9	TI	10	B		25	8				PRA01
1990 05 16.05		S	5.8	AA	8.0	B		20	6	4			SCH05
1990 05 16.06		B	6.0:	TI	10	B		25			0.4		STE10
1990 05 16.07		B	5.7	AA	5.0	B		7		4/			GRO
1990 05 16.07		B	5.8	TI	5.0	B		7	10				DVO
1990 05 16.07		B	5.9	TI	8.0	B		10					BUR03
1990 05 17.03		B	5.8	AA	8.0	B		11		3/			GRO
1990 05 17.05		S	5.8	AA	8.0	B		20	6	4	1	280	SCH05
1990 05 17.06		B	5.9	TI	8.0	B		10					RAP
1990 05 17.08					25.4	L	4	45	6.4		0.35	82	GRO
1990 05 17.99		B	6.4	TI	4.0	B		12					MAC02
1990 05 18.05		B	6.3:	TI	10	B		25			0.3		STE10
1990 05 18.05		B	6.7:	TI	8.0	B		10					RAP
1990 05 18.06		S	5.6	AA	8.0	B		20	7	4	1	300	SCH05

Comet C/1989 X1 (Austin) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1990 05 18.08		S	5.0	AA	5.0	B		12	23.3	4/			BRI03
1990 05 18.96		B	6.5:	TI	5.0	B		7					JAN03
1990 05 19.00		B	5.6	TI	5.0	B		7					HL0
1990 05 19.03		B	6.3	TI	4.0	B		12	12				MAC02
1990 05 19.04		B	5.8	TI	5.0	B		7	18				DV0
1990 05 19.04		B	6.0	TI	5.0	B		7	17		0.2		PRA01
1990 05 19.04		S	5.7	SC	8.0	B		20	7	4	1	294	SCH05
1990 05 19.05		B	5.8	TI	8.0	B		10					P0D
1990 05 19.06		B	6.1	TI	6.0	B		20	20				DV0
1990 05 19.95		B	6.7:	TI	5.0	B		7					JAN03
1990 05 19.99		B	6.1	TI	4.0	B		12	11				MAC02
1990 05 20.03		B	5.9	TI	8.0	B		10	6.5				P0D
1990 05 20.03		B	6.0	TI	8.0	B		10	12		0.5		HOR02
1990 05 20.03		B	6.3	TI	8.0	B		10					RAP
1990 05 20.04		B	5.9	TI	5.0	B		7	14				DV0
1990 05 20.05		B	5.6	AA	5.0	B		7		3			GR0
1990 05 20.05		S	5.7	SC	8.0	B		20	7	4			SCH05
1990 05 20.09		I	5.3:	AA	0.0	E		1					KEI
1990 05 20.09		S	5.5	AA	2.5	B		3					KEI
1990 05 20.09		S	5.5	AA	3.2	B		6	13.8	5/			KEI
1990 05 20.09		S	5.7	AA	5.0	B		10	13.8	7		248	KEI
1990 05 22.02		B	6.4	TI	4.0	B		12	8				MAC02
1990 05 22.98		B	6.7	TI	5.0	B		7					JAN03
1990 05 22.99		S	5.4	AA	3.2	B		6	18.1	4/			KEI
1990 05 22.99		S	5.5	AA	5.0	B		10	17.0	5			KEI
1990 05 23.02		S	5.4	AA	2.5	B		3	14				KEI
1990 05 24.05			4.6	SP	0.0	E		1					KEI
1990 05 24.05		S	5.1	AA	2.5	B		3	11				KEI
1990 05 24.05		S	5.3	AA	3.2	B		6	17.5	5/			KEI
1990 05 25.01		S	5.2	AA	3.2	B		6	15.5	4			KEI
1990 05 25.04		S	5.7	AA	8.0	B		20	10	4			SCH05
1990 05 26.00		B	5.0	SC	5.0	B		7		3			GR0
1990 05 26.03		B	5.7	TI	5.0	B		7	17				DV0
1990 05 26.04		S	5.3	AA	3.2	B		6	17.3	3			KEI
1990 05 26.05		S	5.7	AA	8.0	B		20	10	3			SCH05
1990 05 26.07					14	L	4	83	6		0.15	210	GR0
1990 05 26.94		B	7.0:	TI	10	B		25					STE10
1990 05 26.97		B	5.9	SC	8.0	B		11		2			GR0
1990 05 26.98		B	7.0:	TI	5.0	B		7					JAN03
1990 05 27.00					25.4	L	4	45	10.7		0.11	139	GR0
1990 05 27.01		B	5.9	TI	8.0	B		10	15				P0D
1990 05 27.01		B	5.9	TI	5.0	B		7	12				DV0
1990 05 27.02		B	6.0	TI	4.0	B		8					BEG
1990 05 27.02		S	5.9	AA	8.0	B		20	13	3			SCH05
1990 05 27.04		B	6.1	TI	5.0	B		7	14				PRA01
1990 05 27.06		S	5.4	AA	3.2	B		6	20.3	3/	1.23	305	KEI
1990 05 28.01		B	6.5	TI	5.0	B		7					HL0
1990 05 28.03		S	6.1	AA	8.0	B		20	20	3			SCH05
1990 05 28.05		B	6.7	TI	5.0	B		10					FAB
1990 05 28.06		S	5.5	AA	3.2	B		6	6.8	3	1.5	307	KEI
1990 05 28.98		B	6.6	AA	8.0	B		11		2			GR0
1990 05 29.01		B	6.0	TI	5.0	B		7	10				HL0
1990 05 29.01		B	7.1:	TI	4.0	B		12					MAC02
1990 05 29.03		S	6.3	AA	8.0	B		20	20	3	1	322	SCH05
1990 05 29.96		B	6.8:	TI	4.0	B		12					MAC02
1990 05 29.98		B	8 :	TI	10	B		25					DUS01
1990 05 30.00		B	5.7	AA	5.0	B		7		3			GR0
1990 05 30.00		B	6.2	TI	5.0	B		7					HL0
1990 05 30.00		B	6.6:	TI	8.0	B		10					HOR02
1990 05 30.02		S	6.3	AA	8.0	B		20	20	3	1	322	SCH05
1990 05 30.04		B	6.2	TI	5.0	B		10			0.35		FAB
1990 05 30.04		B	6.5:	TI	8.0	B		10					RAP
1990 05 31.02		B	6.4	TI	8.0	B		10	8				RAP
1990 05 31.02		S	6.1	SC	8.0	B		20	15	3			SCH05
1990 05 31.99		B	6.5	AA	5.0	B		7		2			GR0

Comet C/1989 X1 (Austin) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1990 06 01.06		S	6.1	SC	8.0	B		20	10	3			SCH05
1990 06 02.00		B	6.8	TI	4.0	B		8	12				BEG
1990 06 02.02		S	6.5	AA	5.0	B		12	14.0	1			BRI03
1990 06 03.01		S	6.4	AA	5.0	B		12	15.0	3/	1.1	314	BRI03
1990 06 04.00		S	6.1	AA	5.0	B		10	10.8	1/			KEI
1990 06 05.00		S	6.2	AA	8.0	B		20	8	3			SCH05

Comet C/1990 E1 (Černis-Kiuchi-Nakamura)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1990 03 22.84		S	8.6	S	8.0	B		15	6	5			HUR
1990 03 22.85		S	7.6	AA	5.0	B		10	2.1	6/			KEI
1990 03 23.82		S	9.0	S	20.3	T	10	80	1.8	3			SCH05
1990 03 24.82		S	8.2	AA	8.0	B		20	4	3			BIR
1990 03 24.85		S	7.9	AA	5.0	B		10	2.4	6/			KEI
1990 03 24.89		S	7.9	S	8.0	B		15	6	5			HUR
1990 03 25.82		S	9.0	S	20.3	T	10	80	1.8	3			SCH05
1990 03 25.84		S	7.8	AA	5.0	B		10	3.6	6			KEI
1990 03 28.92		S	8.6	AA	8.0	B		20	2.0	3			KEI
1990 04 11.85		S	8.8	AA	36.0	T	11	123	4	1	0.16	0	KOR
1990 04 13.85		S	9.9	AA	8.0	B		15	3.5	3			MIK
1990 04 14.85		S	9.7	AA	36.0	T	11	123	2.5	1			KOR
1990 04 15.89		S	10.0	AC	20.4	L	6	72	1.7	3			JAH
1990 04 18.87		S	8.7	AA	5.0	B		10	2.8	7			KEI

Comet C/1990 K1 (Levy)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1990 06 01.90		S	10.3	AA	20	L	4	45	2	5			PEA
1990 06 23.97		S	9.8:	TI	10	B		25					MAC02
1990 06 24.99		S	9.4	TI	13	L	8	69	2.5	1			HOR02
1990 06 25.02		S	9.2:	TI	10	B		25					MAC02
1990 06 26.98		S	9.0:	TI	10	B		25					MAC02
1990 06 29.97		S	9.8	TI	5.6	R	12	40					JAN03
1990 06 29.98		S	9.5:	TI	10	B		25					STE10
1990 06 30.04		S	9.6	TI	10	B		25					MAC02
1990 06 30.93		S	9.4:	TI	10	B		25					STE10
1990 06 30.96		S	9.8	TI	5.6	R	12	40					JAN03
1990 07 01.01		S	9.7	TI	8.0	B		10					POD
1990 07 01.93		S	9.4:	TI	10	B		25					STE10
1990 07 03.02		S	9.4:	TI	10	B		25					STE10
1990 07 07.03		S	9.3	TI	10	B		25					STE10
1990 07 07.03		S	9.7	TI	10	B		25					MAC02
1990 07 11.90		S	9.6:	TI	10	B		25					STE10
1990 07 11.98		S	8.4	TI	8.0	B		10					HOR02
1990 07 14.97		S	8.1	TI	8.0	B		10					POD
1990 07 14.98		S	6.6	TI	5.0	B		7			0.2		JAN03
1990 07 15.89		S	7.8	TI	10	B		25					STE10
1990 07 15.89		S	8.2	TI	8.0	B		10	7		0.2		HOR02
1990 07 15.92		S	7.4	TI	8.0	B		10					BUR03
1990 07 15.94		S	8.5	TI	10	B		25					HUD02
1990 07 15.96		S	7.8	TI	6.0	B		12					TRU01
1990 07 16.88		S	7.3	TI	8.0	B		10					BUR03
1990 07 16.90		S	7.7:	TI	10	B		25					STE10
1990 07 17.91		S	7.7:	TI	10	B		25					STE10
1990 07 17.91		S	8.1	TI	10	B		25					HUD02
1990 07 17.93		S	7.4:	TI	8.0	B		10					BUR03
1990 07 18.93		S	7.7	SC	33.0	L	5	50	5	5			BOA
1990 07 18.97		S	7.2:	TI	10	B		25					STE10
1990 07 20.89		S	7.3	TI	5.0	B		7					DVO
1990 07 20.90		S	7.1	TI	5.0	B		7		2			VAN11
1990 07 20.90		S	7.5	TI	5.0	B		7					VAN12
1990 07 20.91		S	7.2	SC	8.0	B		11	5.5	5			BOA
1990 07 20.95		S	7.4	TI	8.0	B		10	4				HOR02
1990 07 20.96		S	7.5:	TI	10	B		25					STE10

Comet C/1990 K1 (Levy) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1990 07 20.97		S	7.0	TI	6.0	B		20					KLA01
1990 07 20.98		S	6.9:	TI	5.0	B		7			0.4		JAN03
1990 07 20.99		S	7.2	TI	6.0	B		12					TRU01
1990 07 20.99		S	7.6:	TI	7.5	R	6	23					NEJ
1990 07 21.03		S	6.9	TI	5.0	B		7					PRA01
1990 07 21.93		S	7.2:	TI	5.0	B		7					DV0
1990 07 21.98		S	6.6:	TI	10	B		25					STE10
1990 07 21.98		S	6.8:	TI	5.0	B		7			0.4		JAN03
1990 07 22.89		S	6.8	TI	5.0	B		7		4			VAN11
1990 07 22.89		S	6.9	TI	5.0	B		7					VAN12
1990 07 22.91		S	6.7	TI	8.0	B		10					BUR03
1990 07 22.91		S	7.1	TI	8.0	B		10	6		0.06		HOR02
1990 07 22.91		S	7.2	TI	6.0	B		12					TRU01
1990 07 22.93		S	6.8	TI	6.0	B		20					KLA01
1990 07 22.94		S	7.1:	TI	5.0	B		7					DV0
1990 07 22.95		S	6.6	TI	8.0	B		10					POD
1990 07 22.96		S	6.7:	TI	10	B		25					STE10
1990 07 22.98		S	7.0	TI	8.0	B		10					HUD02
1990 07 22.99		S	6.5:	TI	5.0	B		7			0.5		JAN03
1990 07 23.01		S	6.7	TI	5.0	B		7					HL0
1990 07 23.02		S	6.8	TI	5.0	B		7					PRA01
1990 07 23.06		S	7.0:	TI	5.0	B		10					FAB
1990 07 23.89		S	6.8	TI	5.0	B		7					VAN11
1990 07 23.89		S	7.1	TI	5.0	B		7					VAN12
1990 07 23.90		S	7.5:	TI	7.5	R	6	23					NEJ
1990 07 23.92		S	7.0	TI	6.0	B		20					KLA01
1990 07 23.98		S	6.9	TI	5.0	B		10					HUD02
1990 07 24.03		S	6.9	TI	5.0	B		7					PRA01
1990 07 24.03		S	6.9	TI	8.0	B		10					REZ
1990 07 24.91		S	7.3:	TI	7.5	R	6	23					NEJ
1990 07 24.95		S	6.7	TI	8.0	B		10	6		0.25		HOR02
1990 07 24.96		S	6.9:	TI	6.0	B		12					TRU01
1990 07 24.97		S	6.7	TI	8.0	B		10					BUR03
1990 07 24.97		S	7.0	TI	4.0	B		11			0.15		STE10
1990 07 24.98		S	6.9	TI	8.0	B		10					REZ
1990 07 24.99		S	6.8	TI	5.0	B		7					PRA01
1990 07 25.93		S	7.0:	TI	6.0	B		12					TRU01
1990 07 26.91		S	7.0:	TI	6.0	B		20	6.5				KLA01
1990 07 26.94		S	6.8	TI	4.0	B		11			0.1		STE10
1990 07 26.98		S	6.8	TI	6.0	B		12					TRU01
1990 07 26.98		S	6.9:	TI	8.0	B		10					BUR03
1990 07 27.00		S	6.8	TI	5.0	B		10					HUD02
1990 07 27.93		S	6.4	TI	5.0	B		7					FAL
1990 07 27.93		S	6.7	TI	6.0	B		20					KLA01
1990 07 27.93		S	6.9	TI	6.0	B		12					TRU01
1990 07 27.96		S	6.8	TI	5.0	B		7					DV0
1990 07 27.97		S	7.2:	TI	4.0	B		12					MAC02
1990 07 27.99		S	6.6	TI	5.0	B		7					PRA01
1990 07 28.00		S	6.2	TI	4.0	B		11			0.15		STE10
1990 07 28.00		S	6.7	TI	8.0	B		10	10	2	0.3		HOR02
1990 07 28.01		S	6.7	TI	8.0	B		10					REZ
1990 07 28.02		S	6.8	TI	8.0	B		10					HUD02
1990 07 28.85		S	7.2:	TI	4.0	B		12					MAC02
1990 07 28.88		S	6.7	TI	6.0	B		12					TRU01
1990 07 28.91		S	6.2	TI	5.0	B		7					VAN11
1990 07 28.91		S	6.6	TI	5.0	B		7		3			VAN12
1990 07 28.92		S	6.6	TI	8.0	B		10	10		0.35		HOR02
1990 07 28.92		S	6.7	TI	5.0	B		7					FAL
1990 07 28.93		S	6.7	TI	6.0	B		20					KLA01
1990 07 28.95		S	6.2	TI	4.0	B		11			0.2		STE10
1990 07 28.95		S	6.3	TI	5.0	B		7		5			VAN11
1990 07 28.98		S	6.5	TI	5.0	B		7					PRA01
1990 07 28.99		S	6.6	TI	8.0	B		10					REZ
1990 07 28.99		S	6.8	TI	8.0	B		10					HUD02
1990 07 29.04		S	6.8	TI	8.0	B		10					POD

Comet C/1990 K1 (Levy) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1990 07 29.90		S	6.5	TI	6.0	B		20		4			KLA01
1990 07 29.92		S	6.1	TI	4.0	B		11			0.2		STE10
1990 07 29.94		S	6.6	TI	5.0	B		7					PRA01
1990 07 29.96		S	6.5	TI	5.0	B		7					DV0
1990 07 29.96		S	6.7:	TI	5.0	B		10					FAB
1990 07 29.97		S	6.5	TI	8.0	B		10					HUD02
1990 07 30.92		S	6.4:	TI	6.0	B		20					KLA01
1990 07 30.94		S	7.0:	TI	6.0	B		12					MAR15
1990 07 30.97		S	5.5:	TI	4.0	B		11			0.3		STE10
1990 07 31.04		S	6.5:	TI	4.0	B		12					NEJ
1990 07 31.92		S	5.7:	TI	4.0	B		11			0.5		STE10
1990 07 31.92		S	6.5	TI	5.0	B		10	8		0.25		GRA05
1990 07 31.92		S	6.5	TI	5.0	B		10					HUD02
1990 07 31.93		S	6.4	TI	8.0	B		10					TRU01
1990 07 31.95		S	6.3:	TI	6.0	B		20					KLA01
1990 07 31.95		S	6.9:	TI	4.0	B		12					MAC02
1990 07 31.98		S	6.6	TI	5.0	B		7					PRA01
1990 07 31.98		S	6.7	TI	8.0	B		10					REZ
1990 08 01.04		S	6.5	TI	5.0	B		10					GRA05
1990 08 01.90		S	6.7	TI	6.0	B		12					MAR15
1990 08 01.90		S	6.9:	TI	8.0	B		10					HUD02
1990 08 01.92		S	5.9	TI	5.0	B		7			0.8		STE10
1990 08 01.99		S	7.0:	TI	4.0	B		12					MAC02
1990 08 02.00		S	6.9:	TI	5.0	B		7					PRA01
1990 08 02.04		S	6.8:	TI	5.0	B		10	12		0.4		GRA05
1990 08 02.06		S	6.5	TI	10	B		25					KLI
1990 08 02.84		S	7 :	TI	4.0	B		12					MAC02
1990 08 02.89		S	6.4	TI	5.0	B		7					DV0
1990 08 02.90		S	6.5	TI	8.0	B		10					TRU01
1990 08 02.98		S	6.2	TI	8.0	B		10					HUD02
1990 08 02.99		S	6.0	TI	5.0	B		7			0.2		HL0
1990 08 03.01		S	5.8	TI	5.0	B		7					KLA01
1990 08 03.01		S	6.2	TI	5.0	B		7					PRA01
1990 08 03.04		S	6.7:	TI	5.0	B		10	16		0.9		GRA05
1990 08 03.07		S	6.4	TI	5.0	B		10					FAB
1990 08 03.82		S	6.9:	TI	4.0	B		12					MAC02
1990 08 03.90		S	6.2	TI	5.0	B		10					FAB
1990 08 03.97		S	6.2:	TI	5.0	B		7					HL0
1990 08 04.02		S	6.0:	TI	5.0	B		7					KLA01
1990 08 04.03		S	5.9	TI	5.0	B		7			1		STE10
1990 08 04.05		S	6.1	TI	5.0	B		10	16		1.4		GRA05
1990 08 04.86		S	6.2:	TI	4.0	B		12					MAC02
1990 08 04.89		S	5.8	TI	8.0	B		10	11	4			HOR02
1990 08 04.94		S	6.2	TI	8.0	B		10					POD
1990 08 04.96		S	6.5	TI	5.0	B		7					PRA01
1990 08 05.00		S	6.5:	TI	8.0	B		10					HUD02
1990 08 05.02		S	5.9:	TI	5.0	B		7					KLA01
1990 08 05.92		S	6.4:	TI	8.0	B		10					HUD02
1990 08 08.89		S	5.5	TI	8.0	B		10	8				HOR02
1990 08 10.04		S	6.2:	TI	5.0	B		7					PRA01
1990 08 11.84		S	4.7:	TI	5.0	B		7					VAN11
1990 08 11.84		S	4.8:	TI	4.0	B		11			1.5		STE10
1990 08 11.84		S	5.2	TI	5.0	B		7		7			KLA01
1990 08 11.85		S	5.4:	TI	4.0	B		12					MAC02
1990 08 11.88		S	5.0	TI	8.0	B		10	9		0.4		HOR02
1990 08 11.88		S	5.2	TI	10	B		25					KLI
1990 08 12.02		S	5.2	TI	5.0	B		7					PRA01
1990 08 12.84		S	5.6:	TI	5.0	B		10					FAB
1990 08 12.85		S	4.3:	TI	4.0	B		11			2		STE10
1990 08 12.85		S	4.4	TI	5.0	B		7					KLA01
1990 08 13.06		S	4.8	TI	5.0	B		7					PRA01
1990 08 13.85		S	4.7	TI	5.0	B		7					KLA01
1990 08 13.87		S	4.5	TI	0.0	E		1					HOR02
1990 08 13.88		S	4.6	TI	0.0	E		1					PRA01
1990 08 13.88		S	5.2:	TI	10	B		25					KLI

Comet C/1990 K1 (Levy) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1990 08 13.90		S	4.6	TI	0.0	E		1					DVO
1990 08 13.93		S	4.3:	TI	5.0	B		7			2		STE10
1990 08 13.98		S	5.7	TI	6.0	B		12	17				TRU01
1990 08 14.00		S	5.4:	TI	5.0	B		7					HLO
1990 08 14.02		S	5.3:	TI	6.0	B		12					BUL02
1990 08 14.02		S	5.7:	TI	6.0	B		12					VOR
1990 08 14.03		S	4.6	TI	5.0	B		7					PRA01
1990 08 14.04		S	5.2:	TI	1.8	B		6	20		1.2		GRA05
1990 08 14.88		S	4.8	TI	5.0	B		10					FAB
1990 08 14.88		S	5.4:	TI	8.0	B		10					HUD02
1990 08 14.89		S	4.6	TI	0.0	E		1					FAB
1990 08 14.89		S	4.8:	TI	5.0	B		7					MUS
1990 08 14.90		S	4.3	TI	0.0	E		1					PRA01
1990 08 14.90		S	4.9:	TI	5.0	B		7					HLO
1990 08 15.07		S	4.4	TI	5.0	B		7					STE10
1990 08 15.83		S	5.2:	TI	4.0	B		12					MAC02
1990 08 15.85		S	5.0:	TI	5.0	B		7					VAN11
1990 08 15.86		S	4.7	TI	5.0	B		7			1.5		STE10
1990 08 15.86		S	4.9	TI	5.0	B		7					SEB01
1990 08 15.88		S	5.0:	TI	6.0	B		12					TRU01
1990 08 15.90		S	4.8	TI	5.0	B		7					MUS
1990 08 15.94		S	4.7	TI	5.0	B		10					FAB
1990 08 16.00		S	4.7	TI	6.0	B		12					VOR
1990 08 16.84		S	4.3:	TI	5.0	B		7			2		STE10
1990 08 16.85		S	4.0	TI	5.0	B		7					VAN11
1990 08 16.85		S	4.3:	TI	10	B		25					KLI
1990 08 16.85		S	4.5:	TI	5.0	B		7					VAN12
1990 08 16.86		S	4.3	TI	8.0	B		10					POD
1990 08 16.91		S	4.2:	TI	5.0	B		7					SEB01
1990 08 17.90		S	3.9:	TI	5.0	B		7					STE10
1990 08 17.95		S	4.2:	TI	5.0	B		7			0.35		JAN03
1990 08 18.85		S	4.2	TI	5.0	B		7					KLA01
1990 08 18.85		S	4.3:	TI	5.0	B		7					VAN11
1990 08 18.85		S	4.6	TI	1.8	B		6	20		1.6		GRA05
1990 08 18.85		S	4.7:	TI	5.0	B		7					VAN12
1990 08 18.86		S	4.5:	TI	5.0	B		7			2.5		STE10
1990 08 18.88		S	3.8	TI	0.0	E		1					HOR02
1990 08 18.89		S	3.9	TI	0.0	E		1					HUD02
1990 08 18.89		S	4.6	TI	6.0	B		12	18		0.9		TRU01
1990 08 18.90		S	4.7	TI	4.0	B		8					BEG
1990 08 18.90		S	4.8	TI	5.0	B		7					SEB01
1990 08 19.89		S	4.4:	TI	5.0	B		7			1.6		STE10
1990 08 19.91		S	3.8	TI	0.0	E		1					HUD02
1990 08 19.91		S	4.4	TI	5.0	B		7					SEB01
1990 08 19.91		S	4.8:	TI	4.0	B		12					MAC02
1990 08 19.95		S	4.2:	TI	5.0	B		10					FAB
1990 08 19.95		S	4.3:	TI	5.0	B		7			0.45		JAN03
1990 08 19.95		S	4.4	TI	0.0	E		1					FAB
1990 08 20.88		S	4.5:	TI	5.0	B		7					JAN03
1990 08 20.91		S	4.1:	TI	5.0	B		7			2.5		STE10
1990 08 22.84		S	4.2	TI	0.0	E		1					MAC02
1990 08 22.90		S	4.3	TI	5.0	B		7					PRA01
1990 08 22.96		S	4.0	TI	0.0	E		1					DVO
1990 08 23.86		S	3.4:	TI	5.0	B		7					JAN03
1990 08 23.86		S	3.7	TI	0.0	E		1					HOR02
1990 08 23.87		S	3.3	TI	5.0	B		7					STE10
1990 08 23.90		S	3.9	TI	5.0	B		10					HUD02
1990 08 23.91		S	5.0:	TI	4.0	B		12					MAC02
1990 08 23.97		S	3.3	AA	2.5	B		3					KEI
1990 08 24.84		S	3.9	TI	5.0	B		7					VAN11
1990 08 24.84		S	4.0	TI	0.0	E		1					REZ
1990 08 24.85		S	3.5	TI	5.0	B		7			1.2		JAN03
1990 08 24.85		S	3.7	TI	5.0	B		7					KLA01
1990 08 24.85		S	4.0	TI	0.0	E		1					FAB
1990 08 24.85		S	4.3	TI	5.0	B		10			2.7		FAB

Comet C/1990 K1 (Levy) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1990 08 24.86		S	3.9	TI	5.0	B		7					MUS
1990 08 24.87		S	3.6	TI	0.0	E		1					DVO
1990 08 24.87		S	4.3	TI	5.0	B		7			0.6		DVO
1990 08 24.89		S	3.9	TI	5.0	B		7			3.5		STE10
1990 08 24.91		S	3.9	TI	5.0	B		7		5			PRA01
1990 08 24.99		S	4.1	TI	5.0	B		7					VOR
1990 08 25.84		S	3.9	TI	5.0	B		7					KLA01
1990 08 25.84		S	4.0	TI	5.0	B		7					VAN11
1990 08 25.89		S	4.1	TI	5.0	B		10					HUD02
1990 08 25.95		S	3.7	TI	5.0	B		7			3.5		STE10
1990 08 25.97		S	3.8	AA	1.4	R		3	25	6			MIK
1990 08 26.84		S	3.9	TI	5.0	B		7					KLA01
1990 08 26.85		S	4.1	TI	8.0	B		10		4			HOR02
1990 08 26.89		S	4.0	TI	0.0	E		1					DVO
1990 08 26.89		S	4.2	TI	5.0	B		7			0.8		DVO
1990 08 26.90		S	4.6	TI	4.0	B		12					BUL02
1990 08 27.84		S	3.7:	TI	5.0	B		7					KLA01
1990 08 27.85		S	3.7	TI	5.0	B		7		5			VAN11
1990 08 27.85		S	3.8	TI	0.0	E		1					HOR02
1990 08 27.85		S	4.0	TI	5.0	B		7					VAN12
1990 08 27.87		S	4.2	TI	5.0	B		7					DVO
1990 08 27.87		S	4.2	TI	5.0	B		7		6			PRA01
1990 08 27.87		S	4.4	TI	5.0	B		7					MUS
1990 08 27.88		S	4.4	TI	4.0	B		11			3.0		STE10
1990 08 27.90		S	4.6	TI	4.0	B		12			0.9		BUL02
1990 08 27.93		S	3.7	AA	2.5	B		3					KEI
1990 08 27.96		S	4.4	TI	5.0	B		7					SEB01
1990 08 28.00		B	3.5	AA	5.0	B		7	30			55	VEL03
1990 08 28.81		B	3.5	AA	5.0	B		7	30			80	VEL03
1990 08 28.83		S	3.9	TI	5.0	B		7			0.9		JAN03
1990 08 28.83		S	3.9:	TI	0.0	E		1					HOR02
1990 08 28.86		S	4.1	TI	5.0	B		7		5/			PRA01
1990 08 28.89		S	4.0	TI	5.0	B		7					VAN11
1990 08 28.90		S	4.4	TI	5.0	B		7			0.5		DVO
1990 08 28.91		S	4.4	TI	5.0	B		7					MUS
1990 08 29.83		B	3.5	AA	5.0	B		7	30			80	VEL03
1990 08 29.83		S	4.3	TI	5.0	B		7					KLA01
1990 08 29.85		S	4.2	TI	5.0	B		7					VAN11
1990 08 29.85		S	5.0:	TI	5.0	B		10					HUD02
1990 08 29.86		S	4.3	TI	5.0	B		10			0.3		FAB
1990 08 29.87		S	4.7	TI	5.0	B		7		5			PRA01
1990 08 29.88		S	4.3	TI	5.0	B		7			0.3		DVO
1990 08 29.90		S	4.7	TI	4.0	B		12					BUL02
1990 08 30.83		S	4.6:	TI	5.0	B		7			0.8		JAN03
1990 08 30.86		S	4.4	TI	5.0	B		7					VAN11
1990 09 08.80		S	3.8:	TI	5.0	B		7					PRA01
1990 10 15.49		B	6.0	AA	8.0	B		20	2.4	7	0.8	122	PEA
1990 10 17.49		B	6.0	AA	8.0	B		20	4.0	7	1.1	119	PEA
1990 10 18.49		B	6.0	AA	8.0	B		20	2.4	8	1.0	120	PEA
1990 10 21.49		B	6.0	AA	8.0	B		20	2.8	7	0.4	122	PEA
1990 10 22.48		B	6.0	AA	8.0	B		20		6	0.33		PEA
1991 02 19.02		S	9.2	TI	8.0	B		10	5				PRA01
1991 02 20.97		S	8.1	TI	8.0	B		10	7	5			PRA01
1991 02 21.00		S	8.6	TI	8.0	B		10					REZ
1991 03 14.82		S	10.2:	TI	8.0	B		10	4				PRA01
1991 03 14.84		S	10.7:	TI	13	L	8	69	2				HOR02
1991 03 16.83		S	9.6	TI	6.0	B		12					BUL02

Comet C/1990 N1 (Tsuchiya-Kiuchi)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1990 07 17.87		S	8.7	AA	8.0	B		15	6.0	2			HAV
1990 07 18.91		S	8.9	AA	8.0	B		15					KOR
1990 07 18.93		S	9.2	S	21.4	L		60	1.5	1			BIR
1990 07 19.87		S	8.7	AA	8.0	B		15	6.0	2			HAV

Comet C/1990 N1 (Tsuchiya-Kiuchi) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1990 07 20.93		S	9.2	S	21.4	L		60	2	1			BIR
1990 07 22.86		S	8.4	AA	8.0	B		15	7.0	3			HAV
1990 07 23.81		S	9.0	AA	33.3	L	5	57	7.2	2			BRI03
1990 07 23.83		S	9.0	AA	20.3	T	10	80	1.7	1			TAN02
1990 07 24.83		S	8.8	AA	20.3	T	10	80	3.8	2			TAN02
1990 07 25.82		S	9.0	AA	20.3	T	10	80	3.8	2			TAN02
1990 07 25.93		S	9.2	AA	29.8	L	5	62	2.8	2/			KEI
1990 08 12.83		S	8.2	AA	8.0	B		15	3.0	3			HAV
1990 10 10.15		B	8.7	TI	10	B		25	3				KLI
1990 10 11.15		B	8.6	TI	10	B		25	2.5				KLI
1990 10 12.18		S	6.8	AA	8.0	B		15	2	3			KOR
1990 10 16.15		S	7.4	AA	8.0	B		15	3.5	4			HAV
1990 10 16.16		B	8.1	TI	5.0	B		7	5				PRA01
1990 10 16.16		B	8.1	TI	10	B		25	3				KLI
1990 10 17.15		B	8.2	TI	8.0	B		10	6				POD
1990 10 17.16		B	8.6:	TI	10	B		25	1.7				KLI
1990 10 17.17		B	8.0	TI	8.0	B		10					HOR02
1990 10 18.15		B	7.9	TI	8.0	B		10	6				POD
1990 10 22.15		B	8.0	TI	6.0	B		12					BUL02
1990 10 22.16		B	6.9	TI	4.0	B		11					STE10
1990 10 22.16		B	7.4	TI	8.0	B		10					HOR02
1990 10 22.16		S	7.2	AA	8.0	B		15	4.0	5	0.3	273	HAV
1990 10 22.19		S	7.4	SC	20.3	T	10	50	3.6	4			SCH05
1990 10 23.15		B	7.7	TI	6.0	B		12					BUL02
1990 10 23.16		B	8.1	TI	8.0	B		10					POD
1990 10 23.16		B	8.1:	TI	6.0	B		20	5				KLA01
1990 10 23.17		B	7.0	TI	4.0	B		11					STE10
1990 10 23.17		B	7.9	TI	5.0	B		9					PRA01
1990 10 23.18		S	7.4	SC	8.0	B		20	4.5	4			SCH05
1990 10 24.15		B	8.6:	TI	10	B		25					MAR15
1990 10 24.16		B	8.1	TI	10	B		25					KLI
1990 10 24.17		B	6.8	TI	4.0	B		11					STE10
1990 10 24.18		S	7.4	SC	8.0	B		20	4.5	4			SCH05
1990 10 25.15		B	8.2	TI	10	B		25					KLI
1990 10 25.16		B	7.1:	TI	4.0	B		11					STE10
1990 10 25.16		B	8.3	TI	8.0	B		10					POD
1990 10 25.17		B	7.8	TI	8.0	B		10					HOR02
1990 10 29.19		S	7.3	AA	8.0	B		20	3	3			BIR
1990 11 01.17		B	8.2	TI	10	B		25					KLI
1990 11 19.16		B	8.4:	TI	5.0	B		7					MUS
1990 11 19.17		B	7.1	TI	4.0	B		11					STE10

Comet C/1991 A2 (Arai)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1991 01 09.04		S	9.7	AA	8.0	B		20	6	1			BIR
1991 01 09.04		S	9.9	AA	21.6	L		60	6	2			BIR
1991 01 13.59		S	10.5	AC	36.0	T	11	123	4.5	1			KOR
1991 01 14.03					21.6	L		60	3	1			BIR
1991 01 14.03		S	10.5:	AA	8.0	B		20					BIR

Comet C/1991 F2 (Helin-Lawrence)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1992 10 29.80		P	15.0:		14	A	2		< 1				HAS02

Comet C/1991 T2 (Shoemaker-Levy)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1992 06 17.06		S	9.5	AA	35	L		50	4	2			PAN
1992 06 19.04		S	9.6	AA	35	L		50	3	3			PAN
1992 06 20.99		S	9.3	AA	35	L		50	3	3			PAN
1992 06 21.03		S	8.7	AA	21	L	7	64	2.7	4	0.02	260	BUL01
1992 06 22.95		B	9.3	AC	20.4	L	6	72	2.2	7	0.20	50	JAH
1992 06 22.97		B	9.4	AC	20.4	L	6	35	2.0	6			JAH

Comet C/1991 T2 (Shoemaker-Levy) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1992 06 23.95		B	9.4	AC	20.4	L	6	35	2.1	5	0.10	310	JAH
1992 06 23.97		B	9.6	AC	20.4	L	6	72	1.4	6	0.05	300	JAH
1992 07 02.13		S	7.9	HR	5.0	B		10	6	5			BOR
1992 07 03.11		S	7.9	HR	5.0	B		10	6.5	5			BOR
1992 07 06.93		S	7.8	AA	8.0	B		15	4	5			HUR
1992 07 06.93		S	8.2	AA	21	L	7	89	3.5	2			BUL01
1992 07 06.98		S	7.9	SC	5.0	B		7	3				EVA
1992 07 07.27		S	7.5	HR	5.0	B		10	8.5	5			BOR
1992 07 08.12		S	7.5	HR	5.0	B		10	7	5			BOR
1992 07 08.30		S	7.5	HR	5.0	B		10	6.5	5			BOR
1992 07 10.16		S	7.6	HR	8.0	B		20	3.2	5			BOR
1992 07 14.10		S	7.7	NO	8.0	B		20	4	3			BOR
1992 07 19.10		S	7.5	HR	5.0	B		10	5	5			BOR
1992 07 19.97		S	7.8	SC	5.0	B		7	2	9			EVA
1992 07 20.10		S	7.7	NO	5.0	B		10	4.5	6			BOR
1992 07 21.93		S	7.7	VB	5.0	B		7	5	9			EVA
1992 07 21.93		S	7.9	AA	25.5	L	4	77	3	3			DIA
1992 07 21.95		S	7.7	AA	21	L	7	64	4	2			BUL01
1992 07 22.93			7.7	SC	5.0	B		7	3	9			EVA
1992 07 22.94		S	8.0	AA	25.5	L	4	77	3	3			DIA
1992 07 23.09		S	7.3	NO	5.0	B		10	7	5			BOR
1992 07 23.89		S	8.0	AA	25.5	L	4	77	3	3			DIA
1992 07 24.89		B	8.5	AA	33.3	L	4	125	3				RIP
1992 07 24.89		S	8.0	AA	25.5	L	4	77	3	3			DIA
1992 07 25.09		S	7.4	NO	5.0	B		10	6	6			BOR
1992 07 25.89		B	8.5	AA	33.3	L	4	125	3				RIP
1992 07 26.09		S	7.5	NO	5.0	B		10	4.5	5			BOR
1992 07 26.89		S	8.3	AA	25.5	L	4	77	2	3			DIA
1992 07 29.05		S	7.5	NO	5.0	B		10	5	5			BOR
1992 07 29.89		S	8.6	AA	25.5	L	4	77	3	3			DIA
1992 08 02.08		S	7.9	NO	5.0	B		10	5.5	5			BOR

Comet C/1991 X2 (Mueller)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1992 01 31.80		S	11.0	AC	20.0	L	4	40	6	3			MIK
1992 02 28.19		B	7.6	S	10.0	B		25	2.3	3			HAS02

Comet C/1991 Y1 (Zanotta-Brewington)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1991 12 31.71		M	9.0	S	10	B		25	10	3			LEH
1992 01 02.72		M	9.1	S	10.0	B		25	5	2			LEH
1992 01 03.76		M	9.0	S	10.0	B		25	8	3			LEH
1992 01 07.75		S	8.3	AA	8.0	B		15	& 5	2			KOR
1992 01 10.76		M	8.7	S	10.0	B		25	5	3			LEH
1992 01 10.77			8.0	VB	22.0	L		50	3.0				DAV02
1992 01 20.74		M	8.6	S	10.0	B		25	4	5			LEH
1992 01 21.75		M	8.3	S	10.0	B		25	4.5	4			LEH
1992 01 22.72		M	8.6	S	10.0	B		25	5	4	0.03	162	LEH
1992 01 22.75		M	8.9	S	20.0	R	17	88	3	5	0.06	165	LEH
1992 01 22.78		S	6.8	AA	8.0	B		15	&10	2			KOR
1992 01 23.72		M	8.2	S	10.0	B		25	4	4	0.05	141	LEH
1992 01 23.75		M	8.6	S	20.0	R	17	88	3	5	0.10	145	LEH
1992 01 24.72		M	8.4	S	10.0	B		25	3.5	4	0.07	131	LEH
1992 01 24.75		M	8.7	S	20.0	R	17	88	3	6	0.03	138	LEH
1992 01 25.72		M	8.5	S	10.0	B		25	2.5	2			LEH
1992 01 25.74		M	9.0	S	20.0	R	17	88	2	3			LEH
1992 01 31.38		S	8.7	AA	31.7	L	5	86	1.2	1			JON
1992 01 31.73		S	8.7	S	10.0	B		25	9	2			LEH
1992 02 06.38		S	8.4	CS	31.7	L	5	86	2.5	4			JON
1992 02 09.39		S	8.2	CS	31.7	L	5	86	1.2	6			JON
1992 02 26.37		S	9.1	RC	31.7	L	5	53	2.5	3			JON
1992 03 01.37		S	9.2	RC	31.7	L	5	53	1.6	2/			JON
1992 03 02.38		S	9.2	GA	31.7	L	5	53	2	2/			JON

Comet C/1991 Y1 (Zanotta-Brewington) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1992 03 04.37		S	9.6	GA	31.7	L	5	53	1.6	2			JON
1992 03 09.36		S	10.2	GA	31.7	L	5	53	2	3			JON
1992 03 10.38		S	10.1	GA	31.7	L	5	53	2	2/			JON
1992 03 11.36		S	10.4	GA	31.7	L	5	53	1	1			JON
1992 03 12.37		S	10.7	GA	31.7	L	5	53		1			JON
1992 03 14.37		S	11.0:	GA	31.7	L	5	53	1	1			JON
1992 03 23.33		S	11.4	GA	31.7	L	5	53	0.7	1			JON
1992 03 24.40		S	11.4	GA	31.7	L	5	53	1.0	1			JON
1992 03 26.37		S	11.7	LM	31.7	L	5	53	0.7	2			JON

Comet C/1992 F1 (Tanaka-Machholz)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1992 04 12.10		S	8.3	AA	6.0	B		20	& 5	6			MIK
1992 04 12.13		S	8.5	S	20.3	T	10	80	1.6	4			SCH05
1992 04 18.13		S	9.3:	AA	20.0	L	4	67	& 4	5			MIK
1992 04 20.95		S	8.5	SC	15	L	8	67	4	6			WAR01
1992 04 24.01		S	8.3	S	14	L	3	28	5	6			WAR01
1992 04 25.93		S	8.4	V	14	L	3	28	4	6			WAR01
1992 04 26.11		S	9.6	AA	20.0	L	4	40	& 2	4			MIK
1992 04 27.12		S	8.9	AA	25	L	4	50	2.5	4			PAN
1992 05 02.09		S	8.8	AC	44	L	4	50					BOA
1992 05 04.12		S	8.7	A	25	L	4	50	3	4			PAN
1992 05 10.01		S	7.5	SC	25.4	L	5	45	5				DAN01
1992 05 10.11		S	7.0	AA	7.0	B		20	6.0	3/			TAN02
1992 05 10.94		S	7.5	S	8.0	B		20	3	6			DAN01
1992 05 10.95		S	7.3	S	25	L	5	150	3	6	0.1	110	DAN01
1992 05 10.95		S	7.6	SC	8.0	B	4	20	5	6			AND01
1992 05 10.96		S	7.4	SC	14	L	3	56	4	6			WAR01
1992 05 10.98		S	7.9	A	25	L	4	50	3	3			PAN
1992 05 11.10		S	6.7	AA	7.0	B		20	10.5	3/			TAN02
1992 05 11.92		S	7.7	SC	8.0	B		20	5				AND01
1992 05 11.92		S	7.9	S	8.0	B	5	20	3	6			SCH07
1992 05 11.97		S	7.6	SC	14.0	L	3	56	4				WAR01
1992 05 13.93		S	7.7	SC	8.0	B	4	20	5	6			AND01
1992 05 13.93		S	8.1	A	25	L	4	50	5	3			PAN
1992 05 13.94		S	7.0	S	8.0	B		15	8	3			HUR
1992 05 13.95		S	8.3	S	21	L	7	89	3	5			BUL01
1992 05 13.97		S	8.2	SC	15.2	L	5	63	3				BEN03
1992 05 13.99		S	8.0:	SC	8.0	B		20	6	3			DAN01
1992 05 14.95		S	7.7	S	8.0	B		20	5	4			DAN01
1992 05 16.02		S	8.0	A	25	L	7	50	4	3			PAN
1992 05 16.95		S	8.5	S	24.4	L	5	45	3.5	3			DAN01
1992 05 17.02		S	8.3	A	25	L	4	50	4	3			PAN
1992 05 17.93		S	7.8	S	8.0	B		15	2.0	3			HUR
1992 05 18.07		S	8.5	A	25	L	4	50	3.5	4			PAN
1992 05 18.93		S	7.9	S	8.0	B		15	5	3			HUR
1992 05 19.09		S	8.6	A	25	L	4	50	3	3			PAN
1992 05 27.01		S	8.9	A	25	L	4	50	5	3			PAN

Comet C/1992 U1 (Shoemaker)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1992 12 15.77		P	13.5:		14	A	2		< 1				HAS02

Comet C/1992 W1 (Ohshita)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1993 01 16.85		P	13.5:		14	A	2		< 1				HAS02

Comet C/1994 J2 (Takamizawa)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 03 30.86	a	C	13.2	MK	20.3	T	10		1.0		1.0m	102	GAR02

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

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1994 07 07.89	!	S	8.8	NP	6	R	6	20	4	4			MIL02
1994 07 09.90	!	S	8.9	NP	6	R	6	20	4	4			MIL02
1994 07 12.88	!	S	8.6:	NP	6	R	6	20	> 3	5			MIL02

Comet C/1994 T1 (Machholz)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1994 11 01.01		S	9.6	AA	10.0	B		20	4.4	2			KEI
1994 11 04.13		S	10.8	AC	15.0	R	15	85	3	3			DIE02
1994 11 06.11		S	10.0	NP	10.0	B		20	4.0	0			KEI
1994 12 02.95		S	11.8	AA	20.0	L	7	100	3.0	3			CSU
1994 12 03.92		S	9.0	AC	15.0	R	15	85	2.0	8			DIE02
1995 02 01.83		C	14.2	MK	20.3	T	10		0.5		0.9m	37	GAR02
1995 02 21.82		S	13.2:	HS	35	L	5	207	0.8	1/			HOR02
1995 02 22.74		S	13.7:	HS	15	R	13	80	0.8	3			ZN0
1995 02 22.78		M	13.4:	HS	35	L	5	92	0.8	1/			HOR02

Comet 1P/Halley

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1985 10 17.02		M	11.0	AA	6.3	R	13	52	0.5	2			KOS
1985 10 24.03		M	10.7	AA	6.3	R	13	52	1	2			KOS
1985 10 25.14		M	10.5	AA	6.3	R	13	52	2	3			KOS
1985 10 26.15		M	10.3	AA	6.3	R	13	52	2	3			KOS
1985 11 05.83		M	8.1	AA	6.3	R	13	52	7	6			KOS
1985 11 06.85		M	8.7	AA	6.3	R	13	52	7	6			KOS
1985 11 07.88		M	8.7	AA	6.3	R	13	52	6	6			KOS
1985 11 08.83		B	8.0	AA	5.0	B		7	18	2			VEL03
1985 11 09.92		M	7.6	AA	6.3	R	13	52	7	6			KOS
1985 11 11.83		B	8.5:	AA	5.0	B		7					VEL03
1985 11 12.80		B	7.5	AA	5.0	B		7	9	3			VEL03
1985 11 17.89		M	6.6	AA	6.3	R	13	52	9	7			KOS
1985 11 29.73		M	5.7	AA	6.3	R	13	52	14	8	0.4	95	KOS
1985 11 30.76		B	5.5	AA	5.0	B		7	21	5			VEL03
1985 12 01.69		B	6.0	AA	5.0	B		7					VEL03
1985 12 01.75		M	5.6	AA	6.3	R	13	52	14	8	0.4	94	KOS
1985 12 03.70		M	5.5	AA	6.3	R	13	52	15	8	0.45	93	KOS
1985 12 04.70		M	5.4	AA	6.3	R	13	52	16	8	0.5	100	KOS
1985 12 05.71		M	5.3	AA	6.3	R	13	52	17	8	0.5	105	KOS
1985 12 05.81		B	5.8	AA	5.0	B		7	18	5			VEL03
1985 12 06.65		B	6.0	AA	5.0	B		7		5			VEL03
1985 12 06.69		M	5.2	AA	6.3	R	13	52	15	8			KOS
1985 12 09.71		M	5.5	AA	6.3	R	13	52	14	8			KOS
1985 12 12.72		B	5.5	AA	5.0	B		7	15	3	1	50	VEL03
1985 12 16.68		M	5.8	AA	6.3	R	13	52	7	7	0.8	110	KOS
1985 12 18.72		B	5.5	AA	5.0	B		7				45	VEL03
1985 12 18.76		M	5.9	AA	6.3	R	13	52	6	7			KOS
1985 12 22.71		B	5.5:	AA	5.0	B		7					VEL03
1985 12 22.71		M	5.8	AA	6.3	R	13	52	5	6			KOS
1985 12 23.71		B	5.5:	AA	5.0	B		7	6	5			VEL03
1985 12 23.74		M	5.7	AA	6.3	R	13	52	7	6	0.4	87	KOS
1985 12 28.72		M	5.2	AA	6.3	R	13	52	7	7			KOS
1985 12 30.66		B	5.2	AA	5.0	B		7	9	8			VEL03
1986 01 04.69		M	5.0	AA	6.3	R	13	52	7	9			KOS
1986 01 05.71		M	4.8	AA	6.3	R	13	52	9	9	0.3	80	KOS
1986 01 05.72		B	5.2	AA	5.0	B		7	9	8			VEL03
1986 01 06.72					5.0	B		7			0.5	160	VEL03
1986 01 06.74		M	5.0	AA	6.3	R	13	52	11	9	0.8	43	KOS
1986 01 07.72		M	4.9	AA	6.3	R	13	52	7	9	0.8	30	KOS
1986 01 20.70		M	4.2	AA	6.3	R	13	52	4	9	1	60	KOS
1986 01 23.72		B	4.2	AA	5.0	B		7		3			VEL03
1986 04 24.81		M	4.7	AA	6.3	R	13	52	3	5			KOS
1986 04 25.81		B	5.5	AA	5.0	B		7	18	2			VEL03
1986 04 25.81		M	4.7	AA	6.3	R	13	52	10	6			KOS
1986 04 27.81		B	5.2	AA	5.0	B		7	18	5			VEL03

Comet 1P/Halley [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1986 04 27.81		M	4.9	AA	6.3	R	13	52	7	4			KOS
1986 04 30.81		B	5.5	AA	5.0	B		7	18	5			VEL03
1986 05 01.82		M	5.7	AA	6.3	R	13	52	5	4			KOS
1986 05 01.83		B	5.2	AA	5.0	B		7	30	4			VEL03
1986 05 02.82		M	5.6	AA	6.3	R	13	52	22	4	1.8	105	KOS
1986 05 02.86		B	5.0	AA	5.0	B		7		5			VEL03
1986 05 03.82		M	5.8	AA	6.3	R	13	52	12	5	1.0	70	KOS
1986 05 04.82		M	5.7	AA	6.3	R	13	52	7	5	0.7	95	KOS
1986 05 06.86		B	6.0:	AA	5.0	B		7					VEL03
1986 05 07.82		B	6.0	AA	5.0	B		7	15				VEL03
1986 05 07.83		M	6.2	AA	6.3	R	13	52	6	3	0.7	97	KOS
1986 05 13.81		M	6.8	AA	6.3	R	13	52	4	3	0.1	66	KOS

Comet 2P/Encke

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1957 09 30.2			7.5		16	R		50	1	1			VIN
1957 09 30.2			7.8	HD	10	B		25	3	5	0.2	60	ALC
1961 01 11.75			8.3	S	12	R		16					CAN
1961 01 15.78			7.9	S	12	R		16					CAN
1970 11 19.79			10.8	S	20	L		40	4	2			PAN
1970 12 01			10.5		15	L		60	2	2			YOU02
1970 12 01.76			9.5	S	11.5	R		90	4	2			RID
1970 12 01.77			8.2	S	15	L		25	5	3			STU
1970 12 01.80			9.5	S	12.5	L		18	6	3			PAN
1970 12 06.75			9.0:		11.5	R		90	3	2			RID
1970 12 06.83			8.4	S	15	L		25	5	3			STU
1970 12 16.75			7.3		16	L		50	6	3			LEM
1970 12 19.74			7.1	S	11.5	R		90	4				RID
1970 12 19.76			7.5		6	R		16	6	3			LEM
1970 12 20.73			7.3		8.0	B		11	3	2			BRI02
1970 12 21.73			7.0		10	L		20	3.5	4			STU
1990 09 17.15		B	10.2	TI	13	L	8	69		1			HOR02
1990 09 17.16		S	9.2	AA	5.0	B		10		4			KID
1990 09 19.12		S	8.8	AA	5.0	B		10		5			KID
1990 09 25.12		B	8.4	S	5.0	B		7					PRA01
1990 09 25.12		B	9.8	TI	13	L	8	69		4			HOR02
1990 09 26.13		B	9.4:	TI	10	B		25					STE10
1990 09 26.14		S	9.0	S	20.3	T	10	80	2.4	3			SCH05
1990 09 27.14		B	9.5	TI	10	B		25					STE10
1990 09 29.14		B	8.9:	TI	10	B		25					STE10
1990 09 29.15		S	9.0	S	20.3	T	10	80	2.4	3			SCH05
1990 09 30.15		S	8.8	S	20.3	T	10	80	2.4	3			SCH05
1990 10 02.13		B	9.2	TI	5.0	B		7					DVO
1990 10 03.13		B	8.6	TI	8.0	B		10	10	1			POD
1990 10 03.14		B	8.2	TI	10	B		25					STE10
1990 10 03.14		B	8.5:	TI	5.0	B		7					DVO
1990 10 03.15		B	8.4	S	5.0	B		7		4			PRA01
1990 10 03.15		B	8.4	TI	8.0	B		10		3			HOR02
1990 10 07.14		B	8.1	TI	10	B		25	3				KLI
1990 10 10.13		B	8.1:	TI	10	B		25	3.5				KLI
1990 10 10.15		B	7.6	TI	8.0	B		10					HOR02
1990 10 10.15		B	8.4:	TI	5.0	B		7					DVO
1990 10 11.12		B	8.3	TI	10	B		25					KLI
1990 10 11.14		B	8.4	TI	8.0	B		10					POD
1990 10 12.17		S	7.0	S	8.0	B		15	2	7			KOR
1990 10 16.15		B	8.0	TI	10	B		25					KLI
1990 10 16.16		B	7.8	TI	10	B		25					STE10
1990 10 17.16		B	7.6	TI	10	B		25					STE10
1990 10 22.17		B	7.8	TI	10	B		25					STE10

Comet 4P/Faye

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1969 11 05.02		P	11.5	UL	15	R	5		0.5	6			WAT

Comet 4P/Faye [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1969 11 09.95			11.5	VB	25	L		45	2	5			MIL01
1969 11 15.62			11.9	AC	31.7	L		86					JON
1991 08 07.97		P	12.5:		14	A	2		< 1	5	0.03	245	HAS02
1991 08 17.02		S	12.4	AC	20.3	T	10	133	0.7				DAH
1991 09 03.96		S	13.0:	AC	36.0	T	11	260	0.5	2			KOR
1991 09 12.96		S	11.8	AC	36.0	T	11	123	0.8	4			KOR
1991 09 13.93		S	11.7	AC	36.0	T	11	123	0.7	4			KOR
1991 09 17.07		S	11.3	AC	25	L	4	50	2	2			PAN
1991 09 19.12		S	11.3	AC	25	L	4	50	2	2			PAN
1991 09 20.12		S	11.2	AC	35	L	4	50	2.5	2			PAN
1991 09 21.15		S	11.2	AC	35	L	4	50	2.5	3			PAN
1991 10 03.92		S	11.6	AC	35	L	4	50	0.7	3			PAN
1991 10 04.99		S	11.3	VB	30	R	18	95	1.5	5			SHA02
1991 10 06.83		S	10.9	V	20.3	T	10	80	0.5	5			BJO
1991 10 08.86		S	10.9	V	20.3	T	10	80	0.6	6			BJO
1991 10 08.93		B	10.0	AA	11	L	7	32	3	5			BAR06
1991 10 09.93		S	10.4	AC	20.4	L	6	72	2.1	8			JAH
1991 10 10.92		S	10.1	AC	20.4	L	6	72	2.1	8			JAH
1991 10 11.92		S	10.1	AC	20.4	L	6	72	2.5	7	0.15	270	JAH
1991 10 14.88		B	9.6	AC	20.4	L	6	72	2.7	8	0.20	255	JAH
1991 10 14.89		S	8.5	S	6.0	R	5	9	7.2	1			JAH
1991 10 14.91					20.4	L	6	35	3.4	7	0.23	260	JAH
1991 10 19.09		S	10.6	AA	25	L	4	50	2	3			PAN
1991 10 26.76		S	10.7	AC	20.4	L	6	72	1.5	4			JAH
1991 10 26.77		S	10.3	AC	20.4	L	6	35	2.2	2			JAH
1991 10 27.76		S	10.7	AC	20.4	L	6	72	1.4		0.10	270	JAH
1991 10 27.77		S	10.5	AC	20.4	L	6	35	1.8				JAH
1991 10 27.79		M	10.0:	S	20.0	R	35	87	2.5	5			LEH
1991 10 27.93		M	9.9:	S	20.0	R	35	87	2.5	6			LEH
1991 10 28.84		B	10.7	AC	20.4	L	6	72	1.5	3			JAH
1991 10 30.79		M	10.2:	S	20.0	R	35	87	2	5			LEH
1991 10 30.85		S	10.2	AC	20.4	L	6	72	1.9	4	0.15	280	JAH
1991 10 31.84		M	9.9:	S	20.0	R	35	87	2	6			LEH
1991 11 01.84		M	9.9:	S	20.0	R	35	87	2	6			LEH
1991 11 03.90		S	10.0	AC	25	L	4	50	2	4			PAN
1991 11 05.89		S	10.2	AC	35	L	4	50	3	4			PAN
1991 11 09.85		S	10.0:	AA	5.0	B		8	3.0	6	0.16	270	BEA
1991 11 09.94		S	10.0	AC	25	L	4	50	2	5			PAN
1991 11 09.96		S	10.2	VB	20	R	14	40	1.8	4			SHA02
1991 11 11.86		S	10.3	A	35	L	4	50	2	4			PAN
1991 11 11.87		S	10.3	AC	35	L	4	50	2	4			PAN
1991 11 23.87		S	10.5	A	35	L	4	50	1	5			PAN
1991 11 23.91		S	10.5	AC	35	L	4	50	1	5			PAN
1991 11 29.79		S	10.7	A	35	L	4	50	2.5	3			PAN
1991 11 29.85		S	9.8	AC	36.0	T	11	123	1.5	7			KOR
1991 12 24.81		S	11.2	AA	35	L	4	50	4.5	1			PAN
1992 01 31.79		S	12.5	AC	20.0	L	4	40	2	3			MIK

Comet 6P/d'Arrest

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1976 07 17.99			11.0	UL	25.4	L		44	4	2			DOH
1976 07 20.97			8.0	UL	8.0	B		15					KEI
1976 07 21.00			8.7	UM	3.5	B		9	7.5	2			ROG02
1976 07 21.00			9.4	UL	5.0	B		10	6.7	3			DOH
1976 07 21.95			9.2	UL	8.0	B		15					KEI
1976 07 21.95			9.6	UL	5.0	B		10	5	2			DOH
1976 07 21.95			10.2	UL	15.2	L			12	2			KEI
1976 07 21.97			7.9	BD	5.0	B		10	20	2			HUR
1976 07 22.00			9.0	UM	3.5	B		9	7.5	2			ROG02
1976 07 23.00			8.5	UL	25.4	L		44	6	3			DOH
1976 07 23.98			10.0	UL	8.0	B		10		2			KEI
1976 07 24.00			11.4	HS	21.5	L		20	3	4			STU
1976 07 24.01			8.6	S	3.5	B		9		2			ROG02
1976 07 24.01			10.7	UL	20	L		30	3	2			PAN

Comet 6P/d'Arrest [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1976 07 24.96			10.0	UL	8.0	B		15					KEI
1976 07 25.00			10.5	HS	21.5	L		20	3	2			STU
1976 07 25.01			9.7	UM	3.5	B		9	7.5	2			ROG02
1976 07 26.92			10.5	UL	12.5	R		50	3	3			HEN
1976 07 26.94			8.2	S	5.0	B		10	16	1			HUR
1976 07 26.94		P	10.0	UL	10	R	5		4	5			HEN
1976 07 27.94			8.1	S	5.0	B		10	15	2			HUR
1976 07 27.98			10.2	UL	20	L		30	5	4			PAN
1976 07 27.99			9.0	UM	3.5	B		9	14	3			ROG02
1976 07 28.92			8.2	S	5.0	B		10	8	3	0.25	135	HUR
1976 07 28.93			10.0	UL	12.5	R		50	4	5			HEN
1976 07 28.97			8.5	UL	25.4	L		44	20	3			DOH
1976 07 28.98			9.6	UL	20	L		30	8	3			PAN
1976 07 28.99			7.8	S	3.5	B		9	16	3			ROG02
1976 07 29.00			8.7	S	7.5	R		31	7	1			POT
1976 07 29.88			8.4	S	30	L		96	5	3			HOW
1976 07 29.92			8.2	UL	7.5	R		25	20	3			DOH
1976 07 29.94			9.5	UL	20	L		30	11	2			PAN
1976 07 29.95			8.3	S	5.0	B		10	11	4			HUR
1976 07 30.00			8.2	UL	8.0	B		15					KEI
1976 07 30.00			9.0	UL	20.3	L		131					KEI
1976 07 31.93			7.3	UL	5.0	B		10	20	4			DOH
1976 07 31.97			7.0	S	5.0	B		16	12	2			POT
1976 07 31.98			8.0	S	5.0	B		10	16	2			ENT
1976 07 31.99			8.1	UL	8.0	B		15	13	2			PAN
1976 08 01.00			8.0	S	6	R		35	6	3			STA
1976 08 01.00			8.5	UM	8.0	B		15					KEI
1976 08 01.02			6.9	UL	3.5	B		9	28	3			ROG02
1976 08 01.02			7.8	S	5.0	B		10	35	3			HUR
1976 08 01.97			7.1	UL	5.0	B		10	22	4			DOH
1976 08 02.00			9.8	UL	21	L		64		3			PAL
1976 08 02.08			7.9	S	2.0	B		8	6	3			STA
1976 08 02.60			6.8	UL	12.5	R	15	45					CLA
1976 08 02.92			7.1	UL	5.0	B		10	20	3			DOH
1976 08 02.96			7.5	UX	6.3	R		45		3			SAW02
1976 08 02.96			8.2	UL	8.0	B		15					KEI
1976 08 03.00			9.8	HS	6	R		35	> 7	4			STA
1976 08 03.90			8.5	S	30	L		96	5	3			HOW
1976 08 03.94			8.3	S	6	R		35	7	3			STA
1976 08 03.98			6.7	UL	5.0	B		10	22	4			DOH
1976 08 03.98			7.3	UL	8.0	B		15	15	2			KEI
1976 08 03.99			9.3	UL	8.4	R		38	2				KUK01
1976 08 04.90			7.0	S	5.0	B		10	5				HUR
1976 08 04.92			9.0:	UL	8.4	R		38	4				KUK01
1976 08 04.95			8.1	S	21.5	L		57	10	3			DRI
1976 08 04.98			8.1	S	6	R		35	8	3			STA
1976 08 05.01			6.4	UX	5.0	B		10	16	3			ROG02
1976 08 05.91			7.0:	UL	6	R		22	5				HUR
1976 08 06.05			7.9	UL	6	R		35	7	4			STA
1976 08 14.96			7.5:	UL	6	R		35	5	4			STA
1976 08 15.87			7.3	UX	5.0	B		7	8	3			GAI
1976 08 15.92			6.2	S	5.0	B		10	2				HUR
1976 08 16.00			6.9	UX	15	L		48					SAW02
1976 08 16.84			7.3	UX	5.0	B		7	8	2			GAI
1976 08 16.92			5.5	S	5.0	B		10	5				HUR
1976 08 16.96			8.1	S	6	R		35	6.5				STA
1976 08 16.98			7.0	UX	6.3	R		45					SAW02
1976 08 17.81			7.1	S	5.0	B		7	10	2			GAI
1976 08 18.59			5.6	UL	12.5	R	15	45					CLA
1976 08 18.89			7.1	US	5.0	B		7	17	2			GAI
1976 08 18.96			5.8	S	5.0	B		10	15				HUR
1976 08 19.01			7.3	S	8.0	B		10	7	5			ROG02
1976 08 19.01			9.3	S	32	R	18	95	3.3				ROG02
1976 08 19.65			5.5	UL	12.5	R	15	45					CLA
1976 08 19.92			5.6	S	5.0	B		10	5				HUR

Comet 6P/d'Arrest [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1976 08 19.94			7.4	S	30	L		96	10	3			HOW
1976 08 19.98			7.3	UL	6	R		35	7	5			STA
1976 08 20.79			5.5	UL	0.0	E		1					CLA
1976 08 21.70			5.5	UL	0.0	E		1	20				CLA
1976 08 22.03			6.3	AA	5.0	B		7	14	3			GAI
1976 08 23.02			7.1:	UL	2.0	B		8	6	5			STA
1976 08 24.84			5.6	UL	12.5	R	15	45					CLA
1976 08 24.96			6.1	AA	5.0	B		7	8	2			GAI
1976 08 27.00			6.5	AA	5.0	B		7	14				GAI
1976 08 30.69			5.8	UL	12.5	R	15	45					CLA
1976 09 12.61			6.5	UL	5.0	B		10					CLA
1976 09 14.63			6.6	UL	12.5	R	15	16					CLA
1976 10 16.48			7.5	UM	5.0	B		10					CLA
1976 10 21.48			8.5	UM	5.0	B		10					CLA
1976 10 24.52			9.0	UM	5.0	B		10					CLA
1995 03 31.08			O[13.0	HS	35	L	5	207	& 1				HOR02
1995 03 31.16		1	C[16.7	MK	20.3	T	10						GAR02
1995 05 05.77			C 18.3	GA	60.0	Y	6		< 0.15	9			NAK01
1995 05 08.06			O[13.0	HS	35	L	5	207	& 1				HOR02
1995 05 08.75			C 18.3	GA	60.0	Y	6		< 0.15	9			NAK01
1995 05 23.01			c 18.6	HS	65	L	4		< 0.2				PRA01
1995 05 23.29			S[14.3	GA	35.9	L	7	164	! 0.5				MOD
1995 05 23.73			C 17.5	GA	60.0	Y	6		0.35				NAK01
1995 05 24.01			C 18.3	HS	65	L	4		< 0.2				PRA01
1995 05 24.01			c 18.7	HS	65	L	4		< 0.2				PRA01
1995 05 26.00			O[13.0	HS	35	L	5	207	& 0.8				HOR02
1995 05 28.07		!	V 17.2	HS	36.0	T	7		& 0.3	5			MIK
1995 05 30.01		!	V 17.5	HS	36.0	T	7		& 0.3	6			MIK
1995 05 31.32			S[14.3	GA	35.9	L	7	164	! 0.5				MOD
1995 06 01.68			C 16.7:	HS	60.0	Y	6		0.3				NAK01
1995 06 05.34			S[13.8	GA	35.9	L	7	164	! 0.5				MOD
1995 06 05.72			C 16.4	GA	60.0	Y	6		0.45				NAK01
1995 06 08.06		!	V 16.9	GA	36.0	T	7		& 0.3	6			MIK
1995 06 16.03			C 16.4	HS	65	L	4		0.2		8	s 270	PRA01
1995 06 16.03			c 17.0	HS	65	L	4		0.2		8	s 270	PRA01
1995 06 19.94			O[12.8	HS	35	L	5	207	& 1				HOR02
1995 06 19.95			O[11.9	HS	35	L	5	207	& 0.6				PLS
1995 06 19.96		!	V 16.0	GA	36.0	T	7		& 1	5			MIK
1995 06 20.95			O[12.9	HS	35	L	5	207	& 0.8				HOR02
1995 06 21.02			C 15.1	HS	65	L	4		0.8		50	s 240	PRA01
1995 06 21.02			c 16.5	HS	65	L	4		0.8		50	s 240	PRA01
1995 06 27.03		!	V 13.6	GA	36.0	T	7		& 4	5			MIK
1995 06 27.95			C 13.7	HS	65	L	4		1.5		60	s 240	PRA01
1995 06 27.95			c 15.7	HS	65	L	4		1.5		60	s 240	PRA01
1995 06 29.04		!	V 14.7	L	65	L	4		+ 0.85		1.7m	235	PRA01
1995 06 29.04		!	u 16.2	L	65	L	4		2.5		1.7m	235	PRA01
1995 06 29.06		!	V 13.0	GA	36.0	T	7		& 4	5			MIK
1995 07 01.01			C 13.9	HS	65	L	4		2.0		1.8m	240	PRA01
1995 07 01.01			c 16.1	HS	65	L	4		2.0		1.8m	240	PRA01
1995 07 01.05		!	V 12.5	GA	36.0	T	7		& 6	5			MIK
1995 07 09.05		!	V 11.7	YF	20.0	T	2		& 7	6			MIK

Comet 8P/Tuttle

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1967 03 05.83			11.0	HS	22	L		34	5	2			GAI

Comet 9P/Tempel 1

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1972 04 20.10			P 12.0	UL	15	R	5		0.5	7	0.03	205	RUT
1972 05 07.94			P 12.5	UM	8	A	5						RID
1972 05 10.92			P 12.0	UL	15	R	5						WAT
1972 05 10.94			P 12.5	UM	8	A	5						RID
1972 05 12.94			P 12.5	UM	8	A	5						RID

Comet 9P/Tempel 1 [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1972 05 15.55			12.0:	UL	30	L		132		4			MAT01
1972 05 31.97		P	12.0	UL	15	R	5						WAT
1972 06 05.97		P	12.0	UL	15	R	5						WAT

Comet 10P/Tempel 2

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1967 06 06.00		P	12.5	UL	15	R	5						WAT
1967 06 12.99		P	12.0	UL	15	R	5						WAT
1967 06 29.98		P	11.5	UL	15	R	5						WAT
1967 07 08.94	*		9.1	S	22	L		90	4	2			LEM
1967 07 08.99	*		10.7	HS	22	L		35	2	3			GAI
1967 07 09.94	*		9.8:	S	22	L		90	4	2			LEM
1967 07 10.03			10.2	UL	8.0	B		10		2			BRO02
1967 07 10.03			10.4	UL	30	L		54	2				BRO02
1967 07 10.99	*		10.9	HS	22	L		35	2	2			GAI
1967 07 12.97	*		8.9	S	22	L		90	4	2			LEM
1967 07 16.99		P	10.8	UL	15	R	5						WAT
1967 07 24.92	*		9.5	HS	22	L		90	4	2			LEM
1967 07 26.92	*		10.1	HS	22	L		90	3	3			LEM
1967 07 26.92		P	10.5	UL	15	R	5						WAT
1967 07 28.94	*		9.3	HS	22	L		90	3.5	3			LEM
1967 08 03.99			9.3	UL	30	L		54	3	4			BRO02

Comet 15P/Finlay

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1960 09 18.09			10.5:		15	L		60					HEN

Comet 16P/Brooks 2

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 03 25.84	1	C	[15.0	MK	20.3	T	10						GARO2
1995 03 30.83	1	C	[15.7	MK	20.3	T	10						GARO2

Comet 19P/Borrelly

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1994 10 11.11		S	8.5	AA	35.0	L	5	103	4.0	5			BRO04
1994 10 14.14		S	8.5	AC	15.0	R	15	85	3.0	7			DIE02
1994 11 01.03		S	8.2	AA	5.0	B		10	6.4				KEI
1994 11 01.03		S	8.3	AA	10.0	B		20	5.1	6	0.23	295	KEI
1994 11 02.06		S	7.9	AA	35.0	L	5	103	7.0	7			BRO04
1994 11 04.11		S	8.9	AA	15.6	L	10	54	9.0	5			KOS
1994 11 05.12		S	8.2	AA	5.0	B		10	3.6	5	1.00		KEI
1994 11 06.12		S	8.2	NP	10.0	B		20	3.7	6	0.17	301	KEI
1994 12 03.92		S	8.5	AA	15.0	R	15	85	3.0	8			DIE02
1994 12 05.00		S	8.4	AA	21.0	L	7	64	4.0	6	0.13	260	BUL01
1994 12 15.03		S	8.3	AA	8.0	B		11					BUL01
1994 12 22.88		S	7.9	AA	8.0	B		15	6.6	2			HUR
1994 12 23.90		S	8.0	AA	8.0	B		15	4.9	2			HUR
1994 12 31.03		S	9.0	AA	8.0	B		11					BUL01
1995 01 06.97		S	9.3	AA	21.0	L	7	64	3.5	4	0.10	320	BUL01
1995 01 27.88		S	10.7	TI	11	L	8	54	2	3			KYS
1995 01 29.20		S	10.2	TI	11	L	8	32	2.5	3			KYS
1995 01 29.21		B	10.3	TI	11	L	8	54	2.3	2/			KYS
1995 02 02.06		C	9.7	MK	20.3	T	10		1.7		2.7m	229	GARO2
1995 02 02.82		S	10.8	TI	11	L	8	54	2	2			KYS
1995 02 03.83		S	10.9	AC	15.6	L	10	54	3.0	1			KOS
1995 02 07.86		M	10.6	TI	20	L	5	48	2				PLS
1995 02 08.82		M	11.2:	TI	20	L	5	48	2	2			HOR02
1995 02 09.86		M	11.3	TI	35	L	5	207	1				PLS
1995 02 09.87		M	11.3	TI	35	L	5	207	1	3			HOR02
1995 02 13.80		M	11.0	TI	30	L	5	40	1.5	0			POP
1995 02 16.88		M	10.6	TI	20	L	5	48	2.2	3/			HOR02

Comet 19P/Borrelly [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 02 16.90		M	10.6	TI	20	L	5	48	2.4				PLS
1995 02 19.81		M	10.7	TI	20	L	5	48	2.4	3			HOR02
1995 02 19.81		M	11.4	TI	30	L	5	40	2	4			POP
1995 02 19.82		M	10.9	TI	20	L	5	48	1.6				PLS
1995 02 20.81		M	10.7	TI	20	L	5	48	2.3	3			HOR02
1995 02 20.82		M	10.8	TI	20	L	5	48	2.2				PLS
1995 02 21.80		M	10.7	TI	35	L	5	92	2.3	2/			HOR02
1995 02 21.80		M	10.9	TI	20	L	5	48	2.1				PLS
1995 02 21.93		S	10.6	AC	15.0	R	15	85	2.0	2			DIE02
1995 02 22.75		M	11.2	TI	10	B		25	2	3			ZNO
1995 02 22.77		M	11.0	TI	20	L	5	48	2.2				PLS
1995 02 22.82		M	10.8	TI	35	L	5	92	2.2	2			HOR02
1995 03 25.25		S	14.0	GA	35.9	L	7	164	0.6	2/			MOD
1995 04 03.85		P	13.5	HS	14.0	A	1	7	1.0	2			HAS02
1995 04 07.29		S	14.0	GA	35.9	L	7	164	0.6	1			MOD
1995 04 21.84		O[	15.0	HS	35	L	5	207	& 0.3				HOR02
1995 04 22.96		S	14.8	HS	35	L	5	207	0.6	2			HOR02
1995 04 23.20		S[	14.3	GA	35.9	L	7	164	! 0.5				MOD
1995 04 25.86		S	14.9	HS	35	L	5	207	0.7	2			HOR02
1995 05 18.56		C	13.8	GA	60.0	Y	6		2.2		6.9m	280	NAK01
1995 05 23.53		C	14.2	GA	60.0	Y	6		2.3		7.3m	280	NAK01
1995 06 20.53		C	14.9:	HS	60.0	Y	6		1.4		3.5m	291	NAK01
1995 06 29.89		C	15.5	HS	65	L	4		1.2		>0.07	293	PRA01

Comet 23P/Brorsen-Metcalf

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1989 08 23.15		S	5.7	SP	5.0	B		10	3.9	7	0.5	292	KEI
1989 08 23.15		S	5.8	SP	8.0	B		20	2.2	7	0.5	292	KEI
1989 08 28.15		S	5.8	AA	5.0	B		10	3.4	8/	3	309	KEI
1989 09 01.15		S	5.3	AA	5.0	B		10	2.4	8/	2	312	KEI
1989 09 06.17		B	5.7	AA	5.0	B		10	2.0	9	1.0	309	KEI
1989 09 07.15		S	5.7	AA	5.0	B		10	2.0				KEI

Comet 24P/Schaumasse

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1992 12 16.81		P	11.5:		14	A	2		1.4	2			HAS02
1993 02 16.86		S	9.3	AC	15.0	L	4	26	4	2			PER01
1993 02 17.93		S	9.4	AC	15.0	L	4	26	4	1			PER01
1993 02 18.78		S	8.0	SC	5.0	B		16	14	4			MCC05
1993 02 19.83		S	8.2	SC	5.0	B		16	12	4			MCC05
1993 02 19.92		S	9.0	AA	5.0	B		8		4			BEA
1993 02 20.80		S	8.5	SC	5.0	B		16	6	3			MCC05
1993 02 20.96		S	9.0	AA	5.0	B		8		4			BEA
1993 02 21.94		S	9.0	AA	5.0	B		8		4			BEA
1993 02 22.81		S	8.5	AA	5.0	B		8		4			BEA
1993 02 28.94		S	8.5	AA	5.0	B		8		4			BEA
1993 03 11.87		S	9.8	VB	44.0	L	4	70	2.5	2			HUR
1993 03 11.88		S	10.0	VB	44.0	L	4	165	2.5	3			HUR
1993 03 12.87		S	9.8	VB	44.0	L	4	70	3	2			HUR
1993 03 12.88		S	9.8	VB	44.0	L	4	165	3	2			HUR
1993 03 14.83		S	9.8	VB	44.0	L	4	165	3	3			HUR
1993 03 15.80		S	9.5	VB	20.3	T	10	80	2.4	1			TAN02
1993 03 15.85		S	9.4	S	44.0	L	4	165	4	3			HUR
1993 03 19.80		S	9.4	VB	20.3	T	10	80	3.8	1			TAN02
1993 03 19.89		S	10.1	VB	44.0	L	4	165	1.5	1			HUR
1993 03 20.81		S	9.5	VB	20.3	T	10	80	3.7	1			TAN02
1993 03 21.84		B	9.0	AA	5.0	B		7	5	1			KOS
1993 03 21.89		S	9.3	VB	20.3	T	10	80	3.7	1			TAN02
1993 03 23.91		S	10.9	V	44.0	L	4	165	2.5	2			HUR
1993 03 26.86		S	10.9	VB	44.0	L	4	165	1.3	2			HUR

Comet 29P/Schwassmann-Wachmann 1

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1976 11 22.90			11.7:		26	L		80	3	2			HUR
1976 11 23.85			11.8:		26	L		80	4	4			HUR
1976 11 25.89			11.7:		26	L		80	4	3			HUR
1995 02 02.97		C	14.6	MK	20.3	T	10		0.6				GARO2
1995 02 03.23		M	14.5	GA	35.9	L	7	164	0.3	3			MOD
1995 02 21.88		O[	14.1	HS	35	L	5	207	& 1				HORO2
1995 02 22.81		O[	14.4	HS	35	L	5	207	& 0.7				HORO2
1995 03 25.20		S[	14.4	GA	35.9	L	7	164	! 0.5				MOD
1995 03 25.87		C	14.7	MK	20.3	T	10		0.7		0.5m	117	GARO2
1995 03 30.93		C	15.0	MK	20.3	T	10		0.9		1.0m	105	GARO2
1995 04 07.25		S[	13.3	GA	35.9	L	7	164	! 0.5				MOD
1995 04 21.85		O[	13.9	HS	35	L	5	207	& 0.8				HORO2
1995 04 22.93		O[	13.9	HS	35	L	5	207	& 0.9				HORO2
1995 04 23.18		S[	13.7	GA	35.9	L	7	164	! 0.5				MOD
1995 04 25.88		O[	14.0	HS	35	L	5	207	& 0.8				HORO2
1995 05 02.86		O[	13.7	HS	35	L	5	207	& 0.8				HORO2
1995 05 22.87		O[	13.0	HS	35	L	5	207	& 0.9				HORO2
1995 05 23.14		S[	13.2	GA	35.9	L	7	164	! 0.5				MOD
1995 05 23.50	a	C	13.9	GA	60.0	Y	6		2.3				NAKO1
1995 05 23.50	a	c	16.9	GA	60.0	Y	6						NAKO1
1995 05 31.11		S[	13.1	GA	35.9	L	7	164	! 0.5				MOD

Comet 31P/Schwassmann-Wachmann 2

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1975 03 13.03		P	14.0	UL	20	L	6		1	7			KAIO2
1975 03 15.04		P	14.0	UL	20	L	6		1	7			KAIO2
1995 06 29.92		C	18.4	HS	65	L	4		0.3				PRAO1
1995 06 29.92		c	19.4	HS	65	L	4		0.3				PRAO1

Comet 40P/Vaisala 1

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1993 03 19.93		P	14.0:		14	R	2		< 1				HASO2

Comet 41P/Tuttle-Giacobini-Kresák

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 05 23.48	a	C	17.6:	GA	60.0	Y	6		0.35				NAKO1
1995 06 20.48		C	15.3:	HS	60.0	Y	6		0.45				NAKO1

Comet 45P/Honda-Mrkos-Pajdušáková

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1969 09 23.18			8.6	S	15	L		20	3	2			PAN
1990 08 30.15		S	7.5	S	8.0	B		20	2.6	2/			KEI
1990 09 03.15		S	8.2	S	8.0	B		20	1	3			BIR
1990 09 17.22		S	7.7	AA	5.0	B		10		3			KID

Comet 51P/Harrington

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 02 01.87		C[	16.2	MK	20.3	T	10						GARO2

Comet 59P/Kearns-Kwee

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1972 11 15.03		P	15.6	NP	15	R	5		0.3	5			WAT
1972 12 02.96		P	14.5	NP	15	R	5						WAT
1973 01 06.00		P	13.9	NP	15	R	5						RUT

Comet 64P/Swift-Gehrels

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1981 11 17.80		P	12.0:		10	A	5		2.0	5			HEN

Comet 64P/Swift-Gehrels [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1981 11 18.80			12.0:		21.6	L		35	2	3			STU
1981 11 20.82			11.7	HS	21.6	L		35	2	1			STU
1981 11 23.83			11.8	HS	21.6	L		35	2	1			STU
1981 11 24.80			11.6	HS	21.6	L		35	3	2			STU
1981 11 24.80		P	12.2		10	A	5		1.5				HEN
1981 11 27.93			11.8	HS	21.6	L		35	2.3	1			STU
1981 11 28.80			11.1	HS	21.6	L		35	4.5	1			STU
1981 11 30.81			11.8	HS	21.6	L		35	3	1			STU
1981 12 01.80			11.4	HS	21.6	L		35					STU
1981 12 17.90		S	12.2	NP	25	L	5	40	3	2			PAN

Comet 65P/Gunn

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1975 03 13.06		P	16		20	L			0.7	3			KAI02
1975 03 15.11		P	16 :		20	L			0.7	3			KAI02
1995 03 31.06		C	15.8	MK	20.3	T	10		0.6				GAR02
1995 04 03.49		C	15.3	GA	60.0	Y	6		1.05		2.0m	287	NAK01
1995 04 20.61		C	15.6	GA	60.0	Y	6		0.95			315	NAK01
1995 05 18.54		C	15.5	GA	60.0	Y	6		1.05				NAK01
1995 05 22.55		C	16.2	HS	25.4	T	6		0.3				YOS
1995 05 23.52		C	15.7	GA	60.0	Y	6		1.0				NAK01
1995 06 20.53		C	16.0:	HS	60.0	Y	6		0.6				NAK01
1995 06 25.88		C	15.5	HS	50	Y	4		0.27		0.03	293	CAV

Comet 71P/Clark

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 03 31.18	1	C	[13.2	MK	20.3	T	10						GAR02
1995 05 02.08		O	[11.7	HS	35	L	5	207	& 0.8				HOR02
1995 05 03.08		O	[11.6	HS	35	L	5	207	& 1				HOR02
1995 05 12.80		S	11.5	HS	41.0	L	5	71	2	3	2 m	267	KOB01
1995 05 22.67		C	12.7	HS	25.4	T	6		0.5				YOS
1995 05 23.75	a	C	11.5	GA	60.0	Y	6		4.0		> 7.4m	262	NAK01
1995 05 31.35	&	S	12.2	GA	35.9	L	7	85	0.8	1			MOD
1995 06 01.75	a	C	11.3	GA	60.0	Y	6		3.5		7.6m	263	NAK01
1995 06 05.74	a	C	11.2	GA	60.0	Y	6		3.8		8.0m	264	NAK01
1995 06 23.08		B	11.7	HS	20.3	T	10	77	3	6			BIV
1995 06 24.06		B	11.6	HS	20.3	T	10	77	2.5	5	&0.10	280	BIV
1995 06 25.11		B	11.7	HS	20.3	T	10	77	3	4/	&0.07	280	BIV
1995 06 27.14		B	11.6:	HS	20.3	T	10	77	3	4			BIV

Comet 73P/Schwassmann-Wachmann 3

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1990 06 01.89		S	10.9	VN	20	L	4	45	1.8	5			PEA

Comet 75P/Kohoutek

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1975 03 12.91			15 :		20	R			0.7	3			KAI02

Comet 76P/West-Kohoutek-Ikemura

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1975 03 12.82			13 :		20	R			1	4			KAI02
1975 03 12.84			13 :		20	R			1	4			KAI02
1975 03 14.80			13 :		20	R			1	5			KAI02

Comet 77P/Longmore

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 03 26.03		C	16.3	LB	20.3	T	10		0.5				GAR02
1995 03 31.01		C	16.9	MK	20.3	T	10		0.4		0.3m	118	GAR02
1995 04 03.48		C	16.5	GA	60.0	Y	6		0.7			125	NAK01

Comet 77P/Longmore [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1995 04 20.59		C	16.8	GA	60.0	Y	6		0.35		1.1m	114	NAK01
1995 04 26.52		C	16.6	GA	60.0	Y	6		0.5		1.3m	111	NAK01
1995 05 18.53		C	16.6	GA	60.0	Y	6		0.5		1.1m	110	NAK01

Comet 78P/Gehrels 2

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1973 11 16.91		P	15.5	UL	15	R	5		0.5	5			WAT

Comet 85P/Boethin

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1975 02 27.81		P	12		10	R			1.5				HEN
1975 03 12.88			14 :		20	R			2	2			KAI02
1975 03 14.84			14 :		20	R			2	2			KAI02

Comet 95P/Chiron [= (2060) Chiron]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1992 02 06.35		I	15.9	MT	40	L	7	395	0.0	9			MOD
1992 04 06.11		I	16.5	MT	40	L	7	395	0.0	9			MOD
1992 04 29.10		I	16.4	MT	40	L	7	395	0.0	9			MOD
1992 12 21.35		I	15.9	GA	40	L	7	190	0.0	9			MOD
1992 12 28.31		I	15.9	GA	40	L	7	190	0.0	9			MOD
1993 01 20.33		I	15.9	GA	40	L	7	190	0.0	9			MOD
1995 02 03.38		I	15.3	GA	35.9	L	7	214	0.0	9			MOD
1995 02 10.82		C	15.7	GA	60.0	Y	6			9		290	NAK01
1995 04 25.89		I	15.4:	HS	35	L	5	207					HOR02
1995 04 26.67		C	15.3	HS	25.4	T	6			9			YOS
1995 05 02.91		I	15.0	HS	30	L	5	200					POP
1995 05 18.56		C	16.0	HS	25.4	T	6			9			YOS
1995 05 22.52		C	16.1	HS	25.4	T	6			9			YOS

Comet 97P/Metcalf-Brewington

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1991 01 11.77					21.6	L		60	5	3			BIR
1991 01 11.77		S	9.2	AA	8.0	B		20					BIR
1991 01 12.77		S	8.5	S	25.4	L	5	45	& 6	3			DAN01
1991 01 13.75		S	9.5:	AA	20.3	T	10	50	3	4			SCH05
1991 01 13.76		S	8.6	AA	8.0	B		15	& 8	3			HUR
1991 01 13.80		S	9.4	AA	8.0	B		20	3	2			BIR
1991 01 14.75		S	8.6	AA	8.0	B		15	3	3			KOR
1991 01 14.75		S	9.5:	AA	20.3	T	10	50	3	4			SCH05
1991 01 14.80					21.6	L		60	3	1			BIR
1991 01 14.80		S	9.5:	AA	5.0	B		20					BIR
1991 01 15.79		S	8.9	AA	8.0	B		15	5	2			KOR
1991 01 16.74		S	9.1	AA	10.0	B		25	1.8	3			KOR
1991 01 17.74		S	8.9	AA	8.0	B		15	4	2			KOR

Comet 103P/Hartley 2

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1991 08 13.11		S	8.8	AA	20.3	T	10	80	5	2			SCH05
1991 08 14.11		S	8.8	AA	20.3	T	10	80	5	2			SCH05
1991 08 16.08		M	10.7	AA	33.3	L	4	55	5.2	2			BRI03
1991 08 19.12		S	8.3	AA	20.3	T	10	80	4	2			SCH05
1991 08 20.12		S	8.3	AA	20.3	T	10	80	4	2			SCH05
1991 08 21.12		S	8.3	AA	20.3	T	10	80	4	2			SCH05
1991 08 21.12		S	9.1	AA	25	L	4	37	2	3			PAN
1991 08 22.11		S	8.3	AA	20.3	T	10	80	4	2			SCH05
1991 08 23.13		S	8.9	AA	25	L	4	37	3.5	3			PAN
1991 08 25.13		S	8.8	AA	35	L	4	50	3.5	3			PAN
1991 08 27.12		S	8.8	AA	35	L	4	50	4.5	3			PAN
1991 08 29.10		S	8.8	AA	25	L	4	37	4.5	4			PAN

Comet 103P/Hartley 2 [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1991 08 30.09		S	8.4	AA	8.0	B		15	3	3			KOR
1991 08 30.13		S	8.8	AA	20.3	T	10	80	4	3			SCH05
1991 08 31.14		S	8.8	AA	20.3	T	10	80	4	3			SCH05
1991 08 31.15		S	9.1	AA	25	L	4	37	4	2			PAN
1991 09 05.13		S	8.8	AA	20.3	T	10	80	3.4	3			SCH05
1991 09 07.15		S	8.5	AA	20.3	T	10	80	3	3			SCH05
1991 09 07.15		S	8.5	AA	6.0	B		20	5	4			PAN
1991 09 08.15		S	8.5	AA	25	L	4	50	4	4	0.17	245	PAN
1991 09 08.15		S	8.5	AA	20.3	T	10	80	3	3			SCH05
1991 09 09.15		S	8.5	AA	20.3	T	10	80	3	3			SCH05
1991 09 10.14		S	8.4	AA	20.3	T	10	80	4	3			SCH05
1991 09 10.15		S	8.4	AA	25	L	4	50	5	4			PAN
1991 09 13.15		S	8.4	AA	25	L	4	50	5	4			PAN
1991 09 13.16		S	8.5	AA	20.3	T	10	80	3	3			SCH05
1991 09 14.16		S	8.5	AA	20.3	T	10	80	3	3			SCH05
1991 09 17.16		S	8.4	AA	25	L	4	50	5	4			PAN
1991 09 18.15			8.6		20.3	T		80	3	3			SCH05
1991 09 19.16		S	8.1	AA	25	L	4	50	5	4			PAN
1991 09 20.17		S	8.1	AA	8.0	B		15	6	4			PAN
1991 09 21.17		S	8.3	AA	6.0	B		20	7	2			PAN
1991 10 04.16		S	8.4	AA	25	L	4	50	3	3			PAN
1991 10 05.09		B	8.4	AA	11	L	7	32	5	4			BAR06
1991 10 06.06		B	8.4	AA	11	L	7	32	5	4			BAR06
1991 10 07.06		B	8.4	AA	11	L	7	32	5	4			BAR06
1991 10 08.06		B	8.5	AA	11	L	7	32	5	4			BAR06
1991 10 09.06		B	8.6	AA	11	L	7	32	5	4			BAR06
1991 10 18.22		S	9.0	AA	8.0	B		15	5	3			PAN
1991 10 20.18		S	8.0	S	6.0	R	5	9	8	2			JAH
1991 10 20.19		B	8.7	S	20.4	L	6	72	4.5	7	0.15	275	JAH
1991 10 28.19		S	8.7	S	20.4	L	6	72	3.7	4			JAH
1991 11 02.22		S	9.4	AC	25	L	4	50	2.5	2			PAN
1991 11 13.24		S	9.9	A	25	L	4	50	3.5	2			PAN
1991 11 18.17		S	10.4	AC	20.0	L	4	40	6	3			MIK
1991 11 20.25		S	10.5	A	25	L	4	50	7	1			PAN

Comet 104P/Kowal 2

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1991 12 29.96		P	13.5:		14	A	2		< 1				HAS02

Comet 108P/Ciffréo

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1992 12 15.75		P	14.0:		14	A	2		< 1				HAS02

Comet 109P/Swift-Tuttle

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1992 10 10.84		S	7.9	SC	8.0	B		20		1			ST003
1992 10 13.78		S	7.7	S	8.0	B		15	2.5	2			HUR
1992 10 15.78		S	6.2	AA	25	L	6	55	9				BRA03
1992 10 15.79		S	7.5	S	8.0	B		15	6	4			HUR
1992 10 15.81		S	7.9	SC	8.0	B		20	6	6			ST003
1992 10 16.79		S	7.3	S	8.0	B		15	8	3			HUR
1992 10 16.82		S	8.0	SC	7.0	B		16	5	2			TAY
1992 10 17.80		S	8.4	S	20.3	T	10	80	5	2			SCH05
1992 10 17.81		S	7.4	S	8.0	B		15	10	3			HUR
1992 10 17.94		S	8.0	SC	9	R	11	50	4	5			FRA01
1992 10 18.76		S	8.3	SC	21	L	5	41	2	2			TAY
1992 10 18.83		S	8.2	S	20.3	T	10	80	5	2			SCH05
1992 10 18.85		S	8.4	AA	7.5	R		50		4	0.2		BEA
1992 10 19.77		S	8.4	AA	7.5	R		50		5	0.2		BEA
1992 10 19.77		S	8.4	SC	21	L	5	41	4.5	3			TAY
1992 10 20.79		S	8.4	AA	7.5	R		50		4	0.3		BEA
1992 10 20.82		S	8.2	SC	21	L	5	41	5	2			TAY

Comet 109P/Swift-Tuttle [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1992 10 21.85		S	7.4	SC	14	S	3	19	7.0	0			EVA
1992 10 23.81		S	7.2	SC	5.0	B		16	4	4			MCC05
1992 10 23.83		S	6.5	HP	7.5	R		50		4	0.3		BEA
1992 10 23.86		S	7.0	SC	14	S		19	4.0	0			EVA
1992 10 23.88		S	6.9	SC	4.0	B		8	8.5	3			TAY
1992 10 23.88		S	7.0	SC	5.0	B		7					EVA
1992 10 24.05		S	6.9	SC	5.0	B		10	8	5			FRA01
1992 10 24.79		S	6.7	SC	8.0	B		20	8	6			ST003
1992 10 24.81		S	6.5	HP	7.5	R		50		5	0.3		BEA
1992 10 24.82		S	6.6	S	8.0	B		15	7	5			HUR
1992 10 24.84		S	7.1	SC	5.0	B		16	4	4			MCC05
1992 10 24.88		S	7.7	SC	4.0	B		8	8	2			TAY
1992 10 24.89		S	6.7	SC	5.0	B		10	8	6			FRA01
1992 10 25.77		S	7.0:	S	6.0	B	5	20	&20	5			PAR03
1992 10 25.80					10	M	10	50	&23.5	5			PAR03
1992 10 25.84		S	6.7	SC	5.0	B		10	10	5			FRA01
1992 10 27.78		S	7.0	SC	5.0	B		16	8	4			MCC05
1992 10 27.79		S	6.4	HP	8.0	B		15	10.5	4			HUR
1992 10 27.80		S	6.5	V	3.5	B		9	8	4			HEN
1992 10 27.81		S	6.7	VB	5.0	B		7	7.0	2			EVA
1992 10 27.92		S	5.3	AA	5.0	B		10	10	4			ABB
1992 10 27.98		S	7.0	AA	21.0	L	7	64	4.7	8	0.17	270	BUL01
1992 10 28.76		S	7.0	SC	5.0	B		16	6	5			MCC05
1992 10 28.81		S	7.3	SC	8.0	B		20	7	7			ST003
1992 10 29.55		S	7.0	AA	5.0	B		8		4	0.25	180	BEA
1992 10 29.65		S	7.1	SC	7.0	B		16	6	3			TAY
1992 10 29.77		S	6.2	HP	8.0	B		15	10	6			HUR
1992 10 29.79		S	7.0	AA	8.0	B		20	6	4			SCH05
1992 10 29.82		S	6.8	SC	5.0	B		16	5	3			MCC05
1992 10 29.89		S	6.5	VB	5.0	B		7	6.0	0			EVA
1992 10 30.57		S	7.1	SC	7.0	B		16	10	3			TAY
1992 10 30.78		S	6.0	HP	8.0	B		15	9	6			HUR
1992 10 30.81		S	6.5	VB	5.0	B			7	2			EVA
1992 10 30.82		S	6.1	AA	5.0	B		10	14	5			PAN
1992 10 30.88		S	6.3	AA	5.0	B		8		4	0.33	180	BEA
1992 10 30.88		S	6.7	SC	5.0	B		16	6	3			MCC05
1992 10 30.92		S	5.8	AA	5.0	B		10	9	3			ABB
1992 10 30.93		S	7.0	AA	21.0	L	7	64	4.7	7	0.17	270	BUL01
1992 10 31.75		S	7.0	AA	8.0	B		20	6	4			SCH05
1992 10 31.76		S	6.3	V	3.5	B		9					HEN
1992 10 31.77		S	6.5	SC	5.0	B		16	8	4			MCC05
1992 10 31.90		S	5.9	AA	5.0	B		10	8	3			ABB
1992 10 31.92		S	5.9	HP	8.0	B		15	8	5			HUR
1992 11 01.72		S	6.0:	S	6.0	B	5	20	&10	6			PAR03
1992 11 02.75		S	6.5	S	7.0	B		16	11	3	1.00	60	TAY
1992 11 02.79			5.9	VB	5.0	B		10	8	6			RAM01
1992 11 02.80		S	5.7	SC	5.0	B		16	8	5			MCC05
1992 11 02.83		M	5.7	AA	5.0	B		7					DIJ
1992 11 02.83		S	6.0	VB	5.0	B		7	5.5	5			EVA
1992 11 02.83		S	6.8	AA	8.0	B		11					BUL01
1992 11 03.74		S	6.8	SC	8.0	B		20	7	4			SCH05
1992 11 03.75		M	5.7	AA	5.0	B		7			0.7		DIJ
1992 11 03.75		S	5.9	SC	5.0	B		16	10	4			MCC05
1992 11 04.74		S	6.8	SC	8.0	B		20	7	4			SCH05
1992 11 06.74		S	6.8	SC	8.0	B		20	7	4			SCH05
1992 11 06.75		S	5.5	SC	5.0	B		16	7	6			MCC05
1992 11 06.76		S	6.1	S	7.0	B		16	9	3		70	TAY
1992 11 06.79		S	5.4	S	8.0	B		15	11	6	0.7	35	HUR
1992 11 07.75		S	6.3	S	7.0	B		16	9	2			TAY
1992 11 07.77		S	5.5	AA	5.0	B		8		3	0.33	180	BEA
1992 11 08.78		S	5.6	S	8.0	B		15	8	4			HUR
1992 11 08.79		S	5.3	S	5.0	B		10	8	4			HUR
1992 11 08.84		S	5.8	AA	5.0	B		7	5.0	2			EVA
1992 11 09.80		S	5.2	SC	5.0	B		16	7	5			MCC05
1992 11 10.74		S	5.5	SC	8.0	B		20	7	4			SCH05

Comet 109P/Swift-Tuttle [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1992 11 11.71		S	5.4	SC	8.0	B		20	7	4			SCH05
1992 11 11.78		S	5.7	AA	5.0	B		7	6.0	5			EVA
1992 11 11.78		S	5.7	S	8.0	B		15	11	5	0.5	20	HUR
1992 11 11.79		S	5.5	S	5.0	B		10	10	6			HUR
1992 11 11.83		S	5.3	SC	5.0	B		16	9	6		345	MCC05
1992 11 11.88		S	6.2	AA	8.0	B		11					BUL01
1992 11 12.72		S	5.5	SC	5.0	B		16	6	6			MCC05
1992 11 12.75		S	5.7	V	3.5	B		9					HEN
1992 11 12.77		S	5.4	S	7.0	B		16	9	3			TAY
1992 11 12.78		S	5.6	AA	5.0	B		7	6.0	5			EVA
1992 11 13.73		S	6.2	S	7.0	B		16	12	7			TAY
1992 11 13.75		M	5.5	AA	5.0	B		7			1.5		DIJ
1992 11 13.75		S	5.5	V	3.5	B		9	10	8			HEN
1992 11 14.75		M	5.4	AA	5.0	B		7			2.0		DIJ
1992 11 16.74		S	5.4	S	7.0	B		16	10	5	0.15	55	TAY
1992 11 16.75		S	5.3	AA	5.0	B		8		3	0.33		BEA
1992 11 16.77		S	5.9	S	7.0	B		16	6	6	0.15	55	TAY
1992 11 16.78		S	5.2	SC	8.0	B		20	7	4			SCH05
1992 11 16.82		S	4.7	SC	5.0	B		10	6.5	6	0.5	45	HUR
1992 11 16.82		S	4.9	SC	8.0	B		15	8.5	6	1.0	45	HUR
1992 11 16.85		S	5.0	SC	5.0	B		16	7	6		0	MCC05
1992 11 17.74		S	5.2	AA	5.0	B		8		3	0.33		BEA
1992 11 17.75		S	5.3	V	3.5	B		9		7			HEN
1992 11 17.76			5.1	VB	5.0	B		10	10	7			RAM01
1992 11 17.76		S	5.6	S	7.0	B		16	5	6			TAY
1992 11 17.77		S	5.0	SC	5.0	B		16	8	6		0	MCC05
1992 11 17.80		S	4.6	SC	8.0	B		15	9	6	1.1	35	HUR
1992 11 17.80		S	5.2	AA	5.0	B		7	6.0	6			EVA
1992 11 17.81		S	4.5	SC	5.0	B		10	9	6	0.8	35	HUR
1992 11 17.83		S	5.2	AA	8.0	B		11					BUL01
1992 11 18.77		S	5.5	S	7.0	B		16	8	5	0.70	55	TAY
1992 11 19.74		S	5.2	SC	8.0	B		20	6	5	1.00	40	SCH05
1992 11 19.76		M	5.4	AA	5.0	B		7					DIJ
1992 11 20.73		S	5.7	SC	8.0	R	15	66	4	6			STO03
1992 11 20.73		S	5.7	SC	8.0	B		20	4	6	0.25	56	STO03
1992 11 20.75		S	4.9	V	3.5	B		9	10	7			HEN
1992 11 20.77		S	5.0	AA	5.0	B		7	5.0	6	0.04	305	EVA
1992 11 23.72		M	5.2	AA	5.0	B		7		7			DIJ
1992 11 23.74		S	5.3	SC	8.0	B		20	5	5	1.00	30	SCH05
1992 11 23.76		S	6.3	S	7.0	B		16	6	5	0.50	50	TAY
1992 11 26.72		S	5.3	SC	8.0	B		20	5	5	1.00	30	SCH05
1992 11 26.74		S	5.0	AA	7.5	R		50		3	0.40		BEA
1992 11 26.75		S	5.8	S	7.0	B		16	6	4	0.50	45	TAY
1992 11 26.75		S	5.9	V	3.5	B		9		6			HEN
1992 11 26.77		S	4.8	AA	8.0	B		11					BUL01
1992 11 26.77		S	4.9	AA	5.0	B		7	6.0	6	0.08	320	EVA
1992 11 26.78		S	4.8	SC	5.0	B		16	7	7		340	MCC05
1992 11 26.80		S	4.9	SC	8.0	B		15	5	7	1.0	45	HUR
1992 11 26.81		S	5.0	SC	5.0	B		10	4	7	0.5	45	HUR
1992 11 28.73		S	5.1	AA	5.0	B		10	5.6	7	1.00	40	ABB
1992 11 28.73		S	6.6	S	7.0	B		16	6	5	0.10	45	TAY
1992 11 28.75		S	4.6	AA	7.5	R		50		3	0.40		BEA
1992 11 28.77		M	4.9	AA	5.0	B		7		7			DIJ
1992 11 29.73		M	4.9	AA	5.0	B		7		7			DIJ
1992 11 30.71		M	4.8	AA	5.0	B		7		8	4.5		DIJ
1992 11 30.74		S	5.3	AA	8.0	B		20	5	5	0.50	40	SCH05
1992 11 30.80		S	4.5	SC	5.0	B		16	7	5		300	MCC05
1992 11 30.80		S	5.5	S	7.0	B		16	10	5	0.10	50	TAY
1992 12 01.74		S	5.5	SC	7.0	B		15	7	5			TAY
1992 12 03.72		S	4.8	AA	5.0	B		10		7	0.66	68	ABB
1992 12 03.78		S	5.0	V	3.5	B		9		5			HEN
1992 12 04.76		S	5.2	AA	21.0	L	7	64	3	7	0.20	300	BUL01
1992 12 04.78		S	5.3	SC	5.0	B		16	8	5		340	MCC05
1992 12 05.74		M	4.9	AA	5.0	B		7		7			DIJ
1992 12 05.75		S	5.1	SC	5.0	B		16	7	5		345	MCC05

Comet 109P/Swift-Tuttle [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1992 12 05.76		S	5.0	SC	5.0	B		10	7	7	0.5	30	HUR
1992 12 05.76		S	5.0	SC	8.0	B		15	7	7	0.6	30	HUR
1992 12 05.76		S	5.2	AA	37.0	L	5	95	3	8	0.20	45	BUL01
1992 12 07.38		M	5.8	AA	5.0	B		7		5			WOL01
1992 12 08.38		M	5.8	AA	5.0	B		7		5			WOL01
1992 12 08.71		S	5.9	SC	7.0	B		16	5	4			TAY
1992 12 08.75		S	5.0	SC	5.0	B		16	6	4			MCC05
1992 12 10.72		S	6.0	SC	7.0	B		16	5	4	0.50	53	TAY
1992 12 12.79		S	4.5	AA	8.0	B		15	4	7			HUR
1992 12 14.38		M	6.0	AA	5.0	B		7		5			WOL01
1992 12 16.38		M	5.6	AA	5.0	B		7		5			WOL01
1992 12 16.71		M	5.1	AA	15.6	L	5	29					DIJ
1992 12 19.68		M	5.6	AA	6.0	B	5	20	& 6	4			PAR03
1992 12 20.72		S	6.2	SC	21	L	5	41	6	6			TAY
1992 12 22.72		S	6.0	SC	5.0	B		16	5	4			MCC05
1992 12 24.76		S	5.5	V	21.0	L	7	64	3		0.03		BUL01
1993 02 27.69		S	9.6	GA	31.7	L	5	86	2	1			JON
1993 02 28.69		S	9.6	GA	25	L	5	50	3	1			JON
1993 03 05.69		S	9.6	GA	25	L	5	50	3	1			JON
1993 03 14.52		M	10.6	VN	21	L	9	76	0.6	1			WOL01
1993 03 15.56		M	10.8	VN	21	L	9	76	0.6	1			WOL01
1993 03 15.70		S	10.8:	GA	31.7	L	5	86	1.5	0			JON
1993 03 18.70		S	11.0:	GA	31.7	L	5	86	1	0			JON
1993 03 21.70		S	10.5	GA	31.7	L	5	86	3	1			JON
1993 03 22.70		S	10.5	GA	31.7	L	5	86	2.8	1			JON
1993 03 25.70		S	10.9	GA	31.7	L	5	86	3	1			JON
1993 03 28.71		S	10.9	GA	31.7	L	5	86	3	1			JON
1993 04 01.71		S	11.2	GA	31.7	L	5	86	1.5	1			JON

Comet 110P/Hartley 3

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1994 10 31.83	a	C	16.3	GA	60.0	Y	6		0.45		1.6m	292	NAK01
1994 12 06.84		C	17.0	GA	60.0	Y	6		0.45		2.1m	297	NAK01
1995 01 26.82		C	17.1	GA	60.0	Y	6		0.35		2.2m	299	NAK01
1995 02 27.71		C	16.4	GA	60.0	Y	6		0.7		3.2m	303	NAK01
1995 03 08.68		C	16.6	GA	60.0	Y	6		0.6			325	NAK01
1995 04 03.56		C	16.9	GA	60.0	Y	6		0.55				NAK01
1995 05 18.55		C	18.1	GA	60.0	Y	6		0.4				NAK01

Comet 116P/Wild 4

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1990 03 01.96		S	12.2	AC	20.3	T	10	80	1.0				DAH
1990 03 03.04		S	12.5	AC	20.3	T	10	133	0.7	3			DAH
1990 03 24.99		S	12.0:	AC	29.8	L	5	62	1.0	3			KEI
1990 03 25.89		S	11.6	AC	29.8	L	5	62	1.0	3			KEI
1990 03 26.95		S	11.9	AC	29.8	L	5	62	1.3	3/			KEI
1990 04 11.85		S	12.7	AC	20.4	L	6	72	0.7	2			JAH
1990 04 11.87		S	13.5	AC	36.0	T	11	123	0.2	6			KOR
1990 04 14.89		S	12.9	AC	36.0	T	11	260	0.3	5			KOR
1990 04 15.85		S	12.9	AC	20.4	L	6	72	0.9	4			JAH
1990 04 25.89		S	12.9	AC	20.4	L	6	72	1.5	1			JAH
1990 05 22.94		S	13.0:	AC	29.8	L	5	124	0.5				KEI

Comet P/1991 L3 (Levy)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1991 06 26.20		S	8.0	AA	5.0	B		10					KID
1991 07 07.02		M	9.2	S	10	B		25					LEH
1991 07 08.03		M	9.0	S	10	B		25					LEH
1991 07 12.04		M	8.3	S	10	B		25					LEH
1991 07 19.04		B	9.0	TI	10	B		25					BUL02
1991 07 19.04		B	9.1	TI	10	B		25		4			MUS
1991 07 23.05		B	9.1	TI	10	B		25	4	5			PRA01

Comet P/1991 L3 (Levy) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1991 07 23.09		M	9.4	AA	33.3	L	4	55	4.1	1			BRI03
1991 07 24.04		B	9.1	TI	10	B		25	5	4			PRA01
1991 07 24.06		B	9.0	TI	10	B		25	6				DV0
1991 08 08.05		M	10.5:		10	B		25					LEH
1991 08 13.05		B	10.5	TI	10	B		25	3	1			BUL02
1991 08 16.09		M	9.6	AA	33.3	L	4	55	2.8	1			BRI03

Comet P/1991 V1 (Shoemaker-Levy 6)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1991 11 28.84		S	12.5	AC	20.0	L	4	40	4	1			MIK
1991 12 28.88		P	14.0:		14	A	2		< 1				HAS02

Comet P/1992 Q1 (Brewington)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1992 11 23.99		P	13.5:		14	A	2		< 1				HAS02

Comet P/1993 W1 (Mueller 5)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
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Comet P/1994 P1 (Machholz 2)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
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The *ICQ* now has a homepage on the World Wide Web on the Internet. The URL to be invoked for the ICQ's homepage is:

`http://cfa-www.harvard.edu/cfa/ps/icq.html`

General information and sample pages of the *ICQ* may be read, and access can also be gained (via this homepage) to homepages for the IAU's Central Bureau for Astronomical Telegrams and Minor Planet Center, to Charles Morris' Comets homepage (with nice images of comets), etc.