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CORRIGENDA

• In the July 2001 issue (*ICQ* 119), all of the even-numbered pages from page 108 to page 150 should, of course, carry the date "July 2001" in the upper right corner (rather than "April 2001" as printed).

• In the July 2001 issue (*ICQ* 119), page 150, line one of text, *for* on this page and the next, *read* on this page,

J. MAYO GREENBERG (1922-2001)

Comet science lost a giant when J. Mayo Greenberg succumbed to pancreatic cancer on 2001 November 29 at his home in Leiden, Holland. He was 79. Fair to say the world's expert on dust in the universe, Greenberg was a leading experimental and theoretical astrophysicist and a pioneer in the fields of astrochemistry and astrobiology. Because he so successfully tied the basic physics and chemistry of interstellar dust to comets, his influence in cometary astronomy is immense.

The day after his death, some details of Mayo's academic career were posted by George Miley at the website¹ of Leiden Observatory where Mayo had worked since 1975. These are summarized in this and the next paragraph. Born in Baltimore on 1922 January 14, Mayo exhibited extraordinary mathematical talents. He entered the Johns Hopkins University to study physics at the age of 15, and just over two years later he advanced to its graduate school. With World War II came a pause in his university career — he was recruited to analyze the air-flow problems that caused the experimental P-38 dive bomber to crash repeatedly — but he returned to Johns Hopkins to obtain his Ph.D. in theoretical physics in 1948 on the theory of atomic scattering of radiation. Appointed in 1952 as Assistant Professor at Rensselaer Polytechnic Institute in Troy, New York, he rapidly rose to the rank of Full Professor before moving on in 1970 to chair the physics department at the State University of New York in Albany.

During the 1950s and 1960s, Greenberg applied his knowledge of light scattering by small particles to the problem of absorption and polarization of starlight by interstellar dust. Developing an increasing interest in astronomy, he spent a sabbatical year in 1961 at University of Leiden to study with the great Dutch astronomers Henk van de Hulst ("my dear friend and mentor") and Jan Oort, who first postulated the vast cloud of comets about the sun that now bears his name. Greenberg returned to Leiden in 1968 as a Visiting Professor, and on a permanent basis in 1975 as Chair of the newly created Department of Laboratory Astrophysics.

Van de Hulst had theorized in the 1940s that, in the ultracold 5° to 10°K environment of interstellar space, some of the atoms known to exist there — hydrogen, oxygen, carbon, and nitrogen — would adhere to the cold surfaces of tiny silicate dust grains to form mantles of frozen water, methane, and ammonia. Greenberg set out to model this process in his new laboratory in Leiden. He built an ultracold 10°-K vacuum chamber — into which he introduced gases such as water, carbon monoxide, ammonia, and methane, which are found in interstellar space. While the gases accumulated as simple ices on a clear quartz window inside (dubbed the "cold finger" — the model's equivalent of the silicate-grain cores), he radiated them with ultraviolet light to mimic the ambient radiation fields found in cold molecular clouds and then analyzed the residue by infrared spectroscopy (Greenberg 1981, 1982). He found that new, more complex molecules had formed — including formaldehyde, which is abundant in interstellar space and in comets. On warming this frost, the free radicals in the mixture combined at about 27°K in violent chemiluminescent explosions, resulting in even more complex organic compounds and biochemicals such as glycerol, glyceramide, and the amino acids glycine, serine, and alanine. On further warming to room temperature, the frost became goeey and yellow. His colleagues toyed with names like "Greenberg glue" and "Mayo-nnaise" for this residue, but the term that stuck in the literature was simply "yellow stuff." In 1992 the European *EURECA* satellite carried some of the Leiden "yellow stuff" into orbit via the U.S. *Space Shuttle*, which retrieved the sample a year later after it had been exposed to the sun's ultraviolet rays to simulate the harsher environment that the grains would experience after being ejected into diffuse clouds following star formation. "What went up yellow came back brown," wrote Greenberg (2000). The "brown stuff" gave better matches to absorption spectra of actual interstellar dust sources, and on mass-spectroscopic analysis it was rich in polycyclic aromatic hydrocarbons (PAHs; cf. Greenberg *et al.* 2000), which are now thought to be ubiquitous in the interstellar medium.

These experiments bolstered Greenberg's earlier conclusions — based on interstellar extinction and polarization curves and on his laboratory studies of microwave scattering by cm-sized grain analogs — that interstellar grains were predominantly (80% by mass) elongated, larger particles averaging 0.2 mm × 0.4 mm with silicate cores and processed mantles of refractory and variably volatile organics. The remainder were two types of tiny carbonaceous grains of average sizes 0.005 and 0.002 mm, the latter consisting of PAHs in the current scenario. Most astronomers now believe that comets condense at very low temperatures from this dust during cloud collapse and star and planet formation. According to Greenberg, a comet should retain this dust in a rather pristine state, with the small carbonaceous particles and ices accreting onto the larger particle mantles during comet formation. In 1986, the *Giotto* and *Vega 1* and *Vega 2* probes to 1P/Halley provided dramatic support for Greenberg's interstellar-grain model of comet dust. The instruments detected a wide variety of particle masses, including the 10⁻¹⁴ gram expected for individual core-mantle dust grains, and the 10⁻¹⁸ gram typical of smaller carbonaceous particles in the mantles. Time-of-flight ion spectrometers gave further evidence (Jessberger and Kissel 1991), based on the fact that the oxygen, carbon, and nitrogen ions from the organic mantles hit the spacecraft detectors just before the silicon, magnesium, and iron ions from the cores did (Greenberg 2000). No less than Fred Whipple, the originator of the "dirty snowball" model of comet nuclei, pronounced that "the general nature of the particles is consistent with Greenberg's (1982) theory that they are indeed made by interstellar dust and that '~ 20% of comets consists of complex non-volatile organic molecules of prebiotic type'" (Whipple 1987).

Greenberg (1986) also predicted that the nucleus of Halley's comet would be extremely dark at a time when many cometary astronomers were still thinking of comets as snowy and bright. He reasoned that the tiny grains would strongly forward-scatter sunlight inward, where it would be then be absorbed by repeated scatterings within the body. The images from the *Giotto* spacecraft proved Greenberg right.

¹<http://www.strw.LeidenUniv.nl/mayo/mayo.html>

Greenberg's comet-nucleus dust model predicts a "bird's nest" structure of very porous, fluffy, fragile material of very low thermal conductivity and tensile strength — most of it empty space. The model well accommodates the non-gravitational forces observed in comets as well as the high propensity for comets to split. It also explains the unusually hot thermal spectrum and high silicate emission observed in comet C/1995 O1 (Hale-Bopp) as due to grains that are more porous than those of other comets (Li and Greenberg 1998). This is quite in contrast to the currently prevailing explanation (*e.g.*, Mason *et al.* 2001) that C/1995 O1 had an excess of especially small grains. In a conversation with him a month before he died, I can attest that Mayo was adamant on this issue — he thought that the smaller-grain idea had no coherent astrophysical basis on first principles. In the coming years or decades, this debate may be resolved as spacecraft head for scientifically sophisticated encounters with comets.

Throughout his career, Greenberg was intensely interested in the relation of organic interstellar grains and their comet progeny to the origin of life on earth. He led in switching the paradigm of the biochemical evolution toward life from the surface of the earth to the depths of interstellar space. He had little patience for the particular speculation of the cosmologist Sir Fred Hoyle (1915-2001) that putative comet viruses from space spread epidemic disease on earth (see references in Marcus and Olsen 1991), but he was open to the general possibility of panspermia. Greenberg and his colleague Peter Weber put one aspect of the idea to a tough experimental test by embedding the hardy spores of *Bacillus subtilis* in a protective layer of "yellow stuff" on the cold finger and radiating them with the ultraviolet equivalent of 4.5-45 million years exposure in a molecular cloud. They found that, at the protective 10°K temperature of deep space, the spores survived! They concluded that star-to-star transport of viable bacteria is in principle possible (Weber and Greenberg 1985).

Greenberg's most sensational achievement in astrobiology was inspired by William Bonner, a chemist at Stanford University. In all earth life, the central biomolecules — proteins, polysaccharides, and nucleic acids (RNA and DNA) — are found in only left-handed or only right-handed mirror (or "enantiomer") forms. But on the early earth, the corresponding monomer biochemicals — amino acids, sugars, and nucleic acid bases, respectively — would be racemized, that is, the left- and right-handed enantiomers would be in exactly equal proportions. As such, they would be unable to polymerize to the more complex biomolecules — a chemical effect known as "enantiomeric inhibition" — which poses a central problem to paradigms for the origin of life. Bonner and his Stanford colleague, Edward Rubenstein, proposed a space-based solution (Bonner 1991) at the conference "Comets and the Origins and Evolution of Life" (Marcus 1991). Organic-laden interstellar dust clouds pass by neutron stars, which produce strong, circularly polarized, synchrotron ultraviolet radiation that would selectively destroy either the right- or the left-handed forms of prebiotic molecules in the grain mantles — depending on which pole of the star that the cloud passed by — leaving the other-handed forms intact. Greenberg was intrigued (Marcus 1991). At that conference, he had proposed that the extreme fluffiness of comets dictated by his interstellar-grain model would allow a significant fraction of cometary material to land chemically intact on the early-earth's surface, where Bonner's chiral precursors to life could chemically evolve (Marcus 1991). Greenberg went back to Leiden to test Bonner's hypothesis on the "cold finger." He radiated the racemized amino-acid tryptophan with circularly polarized ultraviolet radiation and, voila, produced an excess of the right-handed enantiomer that would be equivalent to a 50% excess in interstellar-cloud conditions (Greenberg 1996). Based on the numbers, lifetimes, and encounter frequencies of neutron stars and interstellar clouds, he argued that homochiralization of organic compounds in pre-comet grains by neutron stars would be widespread throughout the galaxy (Greenberg 1996). Support for this prediction came only a short time later with the discovery of non-racemic extraterrestrial amino acids in the primitive Murchison meteorite (Engel and Macko 1997).

Those who encountered Mayo were struck by his child-like sense of wonder and enthusiasm for his work, at which he spent long hours. His prolific output — over 300 articles in Astrophysical Data Service² — is exceeded by few astronomers. And over 100 of these came in the last decade of his life! He was that rare scientist whose deep grounding and restive creativity combusted to push envelopes and change paradigms. His ideas have had enduring influence on his peers in cometary astronomy, and from his well-funded Astrophysical Laboratory in Leiden, he has spun off many brilliant proteges who themselves are now scientific leaders in their own rights. Mayo was also an enthusiastic and effective populizer of science, somewhat of a Carl-Sagan figure in Europe, where he appeared on numerous television and radio programs and in the printed press, giving interviews until the final weeks of his life.

Mayo is survived by Naomi, his wife of 54 years (and a cellist and counseling psychologist), and their two sons, two daughters, and grandchildren. Daughter Shelly is an accomplished violinist in the Rotterdam Philharmonic, and son Jon Greenberg is familiar to many in the United States for his stint as a reporter for National Public Radio. After the diagnosis of his mortal illness last spring, his friends — concerned that he would not reach his 80th birthday in January 2002 — decided to celebrate it early. On September 17, 60 colleagues from Leiden and around the world gathered at the Observatory to honor Mayo. The title of the mini-symposium, in which Mayo was an active participant, aptly summarized his career: "From Interstellar Dust to Comets: A Journey Through Space and Time".

— Joseph N. Marcus (19 Arbor Road; St. Louis, MO 63132; U.S.A.; e-mail jnm4248@bjc.org)

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²<http://adswww.harvard.edu/>

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New Comet Publications

2001 COMET HANDBOOK

The *2002 Comet Handbook* (a special annual edition of the *ICQ*, published as a December 2001 issue) was mailed to all *ICQ* subscribers and complimentary recipients in the first week of January 2002. The largest edition yet of the *Comet Handbook* at 142 pages, it contains orbital elements, magnitude parameters, and ephemerides for 143 comets predicted to be brighter than mag ≈ 22 in the year 2002. The price remains unchanged at US\$15.00 per copy (with one copy only available to *ICQ* subscribers at the special rate of \$8.00).

2001 CATALOGUE OF COMETARY ORBITS

The 14th edition of Brian Marsden's *Catalogue of Cometary Orbits (CCO)* was also issued in December, containing orbits for 924 cometary apparitions spanning comet 1P/Halley in 240 BC to comet C/2001 W2 (BATTERS). The *CCO* can be obtained from the *ICQ* (address and payment information on page 152 of this issue) for \$40.00 (\$60.00 airmail).

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COMETS FOR THE VISUAL OBSERVER IN 2002

Alan Hale

Southwest Institute for Space Research

The year 2002 begins with the appearance of a relatively bright long-period comet that may become faintly visible to the unaided eye. C/2000 WM₁, discovered by the LINEAR program in November 2000 and at perihelion on 2002 January 22 ($q = 0.555$ AU), has been under visual observation since August 2001, and — although developing nicely — it has (as of this writing) consistently remained approximately one magnitude fainter than the earliest (perhaps somewhat optimistic) projections. If this trend is maintained, the comet should be at $m_1 \sim 5.5-6$ in December 2001 (being closest to the earth, at $\Delta = 0.32$ AU, early that month), and perhaps one magnitude brighter during January (when it will be located at $\delta \sim -50^\circ$ and visible only from the southern hemisphere).

[text continued from page 155]

Following conjunction with the sun in late January, the comet emerges into the morning sky in early February, perhaps at $m_1 \sim 6$, and should remain visually detectable for the next several months, fading below $m_1 \sim 13$ by perhaps June or July.

Other Long-Period Comets

Several other long-period comets of moderate to large perihelion distance (the majority of which have been discovered by the LINEAR program) should be visually observable during 2002. One of these, C/2000 SV₇₄, was at opposition in October 2001 and has been detectable at $m_1 \sim 13.5$ for the past several months. It is at perihelion on 2002 April 30 ($q = 3.541$ AU), at which time it will be in northern circumpolar skies, reaching $\delta = +84^\circ$ in mid-June. It will remain in far northern skies and should also remain near $m_1 \sim 13.5$ until the latter months of 2002.

Among other LINEAR-discovered comets, C/2001 N₂, at perihelion on 2002 August 19 ($q = 2.669$ AU) and at opposition two months earlier, may reach $m_1 \sim 13$ during the middle months of 2002. C/2001 K₅, at perihelion on 2002 October 11 at a distant q of 5.183 AU, is at opposition in early June 2002 and may also reach $m_1 \sim 13$ during the year's middle months. The more recent discovery C/2001 RX₁₄, which is at perihelion on 2003 January 18 ($q = 2.058$ AU), may reach $m_1 \sim 10-11$ in late 2002 and be perhaps a magnitude brighter when near perihelion and at opposition early the following year.

Another comet, C/2001 HT₅₀, independently discovered by both the LINEAR and NEAT programs, does not pass perihelion until 2003 July 8, at $q = 2.804$ AU. It is at opposition in early March 2002, at which time it will probably still be too faint for visual observations; however, when it emerges into the morning sky during the latter months of the year enroute to another opposition in mid-January 2003, it may be as bright as $m_1 \sim 12-13$.

Two additional large- q long-period comets that will remain in southern circumpolar skies throughout 2002 may possibly become visually detectable for observers in the southern hemisphere. Comet C/1999 F₁ (Catalina), at perihelion on 2002 February 13 ($q = 5.787$ AU), will be at opposition in late January ($\delta = -75^\circ$) and again in late November ($\delta = -67^\circ$). The LINEAR discovery C/2001 C₁, at perihelion on 2002 March 28 ($q = 5.105$ AU), is at opposition in late April ($\delta = -65^\circ$). Neither object is likely to become brighter than $m_1 \sim 14$.

Finally, the very distant comet C/2001 Q₄, discovered by the NEAT program on 2001 August 24 when it was located at $r = 10.1$ AU, reaches perihelion on 2004 May 16 at $q = 0.962$ AU (according to the most recent orbit available at this writing), at which time it theoretically could become a moderately conspicuous naked-eye object. It is at opposition in late October 2002, when it is located at $r = 6.7$ AU and at $\delta \sim -40^\circ$. Any brightness predictions made at the time of this writing [early Nov. 2001] must be regarded as extremely uncertain; however, it is possible that the comet may be visually detectable at perhaps $m_1 \sim 14$ during the latter months of 2002.

Short-Period Comets

19P/Borrelly

This comet has already passed perihelion on 2001 September 14 ($q = 1.358$ AU) and was successfully encountered by the *Deep Space 1* spacecraft a week later. It has remained in the morning sky throughout this apparition, and reached a peak brightness near $m_1 \sim 10$ in September and October. Comet 19P is nearest Earth in late December 2001 ($\Delta = 1.28$ AU) and is at opposition in mid-March 2002. The comet should still be visually observable at $m_1 \sim 12$ in January 2002 but should fade beyond visual detectability within one to two months after that.

31P/Schwassmann-Wachmann

After its previous (and very favorable) return in 1994, this comet passed 0.25 AU from Jupiter in March 1997, which increased its perihelion distance from 2.07 to 3.41 AU and its orbital period from 6.4 to 8.7 years. Although the dramatically increased perihelion distance will most likely keep the comet beyond the range of visual observations for the foreseeable future, the geometric circumstances in 2002 (with perihelion occurring on January 18, and opposition only two weeks later) happen to be extremely favorable. There is thus some possibility that the comet may become visually detectable around that time as an extremely faint object, perhaps at $m_1 \sim 14$.

7P/Pons-Winnecke

This rather "classic" short-period comet, which made several close approaches to the earth during the early 20th century (including one to within 0.04 AU in 1927), has had a very spotty visual observational record during the recent past. A small handful of visual observations were reported at both the 1983 and 1989 returns (with the 1996 return being extremely unfavorable). The 2002 return, with perihelion taking place on May 15 ($q = 1.258$ AU) is the best in over three decades, with opposition occurring in mid-September and closest approach to the earth ($\Delta = 0.63$ AU) taking place in early June.

It should thus be possible to scrutinize its brightness behavior rather thoroughly at this return. Using the reported 1983 and 1989 magnitudes as a rough guide, the peak brightness may be near $m_1 \sim 11$ during May-July, although this should be regarded as rather uncertain (and it is possible that the heliocentric light curve may be asymmetric with respect to perihelion). Beginning in early August, the comet remains south of $\delta = -40^\circ$, so southern-hemisphere observers will be favored during this part of the apparition.

57P/du Toit-Neujmin-Delporte

Although normally quite faint, at this comet's previous (and unfavorable) return in 1996, it underwent an apparent outburst several months after perihelion, reaching $m_1 \sim 12$. The 2002 return, meanwhile, is extremely favorable, with perihelion taking place on July 31 ($q = 1.730$ AU) and opposition and closest approach to the earth ($\Delta = 0.72$ AU) occurring almost simultaneously with this. Any brightness forecasts must be regarded as highly uncertain, but if some semblance of the 1996 activity is still being maintained, the comet may become as bright as $m_1 \sim 10-11$.

67P/Churyumov-Gerasimenko

This comet's 2002 return (perihelion August 18, $q = 1.292$ AU) is only moderately favorable; at the time of perihelion the comet will be located in the morning sky at an elongation of just under 50° . At that time, it should be near a peak brightness of $m_1 \sim 11-12$, a brightness that it may maintain for the next two to three months before it commences fading.

46P/Wirtanen

Like the above comet, this object's 2002 return is also only moderately favorable; perihelion takes place on August 26 ($q = 1.059$ AU), at which time it will be located in the morning sky at an elongation of just under 40° (and only 10° to the east-southeast of the above comet). Based upon the comet's brightness at its 1991 return (which took place under somewhat similar geometric conditions), a peak brightness near $m_1 \sim 11$ may be expected during August and September.

92P/Sanguin

In 2002 this comet makes its third observed return, under geometric circumstances quite similar to those at its discovery apparition in 1977; perihelion, at $q = 1.807$ AU, occurs on September 23, approximately six weeks after the comet is at opposition. No visual observations seem to have been attempted in 1977, but based upon the brightest photographic magnitudes that were reported then, a peak brightness near $m_1 \sim 13$ may be expected around the time of perihelion.

22P/Kopff

The 2002 return of this comet is quite unfavorable, and when at perihelion on December 12 ($q = 1.584$ AU), its elongation will be $< 15^\circ$. Because of this comet's rather high intrinsic brightness, it is possible that it may be detectable visually around August-September, when it will be located in the evening sky at an elongation of $40^\circ-50^\circ$ and possibly at $m_1 \sim 12-13$.

P/1986 A1 (Shoemaker)

This object is making its first predicted return following its discovery in January 1986; perihelion is predicted to occur on 2002 December 15, at $q = 1.834$ AU. Opposition occurs in early February 2003. The geometric conditions are quite similar to those at the discovery return, and based upon visual observations that were obtained then, a peak brightness of $m_1 \sim 13$ may be expected in December 2002 and January 2003.

30P/Reinmuth

Although this comet was discovered as long ago as 1928 and it has been recovered at every subsequent return except one, its visual observational record is very spotty. The 2002 return (perihelion December 24, $q = 1.878$ AU) is quite favorable, with opposition taking place in early March 2003. Although brightness predictions are necessarily uncertain, a peak brightness of $m_1 \sim 13$ may be obtained in January and February 2003; it may be a half-magnitude fainter than this during late 2002.

29P/Schwassmann-Wachmann

During its 2001 viewing season, this comet underwent an extended period of activity from May through August, with several outbursts being detected. In 2002 the comet emerges into the morning sky about March, is at opposition in early August, and remains accessible in the evening sky until December. As always, monitoring of the comet for additional outburst activity is encouraged.

Other objects

During early 2002 two recently-discovered objects, apparently minor planets but traveling on distinctly cometary orbits, should be bright enough for visual observations. Cometary activity has been unsuccessfully searched for in both of these objects; however, it is possible that — as they continue to approach perihelion — either or both of them may begin to exhibit such activity. If that does occur, then they could conceivably become brighter than the brightnesses indicated here, which are based upon the standard asteroidal brightness formula.

Discovered by the LONEOS program on 2001 July 28, 2001 OG₁₀₈ is traveling in an orbit distinctly representative of a Halley-type comet ($e = 0.925$, $i = 80^\circ$, $P = 48.5$ years); it is at perihelion on 2002 March 15, at $q = 0.994$ AU

[text continued from page 157]

(and thus can be considered an Apollo-type minor planet). It is in conjunction with (although well north of) the sun in mid-February 2002, and in early April it reaches a declination of $+87^\circ$. After that it travels rapidly southward, passing 0.55 AU from the earth on April 18. At that time, it should be at $m_v \sim 14$ but will fade rapidly as it recedes from the sun and the earth.

2001 TX₁₆ was discovered by LINEAR on 2001 October 13 and was subsequently identified in NEAT images obtained in August. The orbit is representative of a typical Jupiter-family comet ($e = 0.599$, $P = 6.8$ years), and it has made two moderately close approaches to Jupiter during recent decades (Marsden 2001). Perihelion occurs on 2002 January 17, at $q = 1.440$ AU, and it is at opposition a month later. A peak brightness of $m_v \sim 14$ should be reached between late December 2001 and late February 2002.

REFERENCES

Marsden, B. G. (2001). *MPEC* 2001-U45.

Φ Φ Φ

New Format for CCD Observations

As mentioned in the April 2001 issue (page 41), we now inaugurate a new format for tabulated CCD photometry of comets. This new format has been long overdue, as there are additional data needed for CCD photometry that were not needed in the 20-year-old *ICQ* tabulation format for visual data. The old format, based on 80 columns (because the *ICQ* started archiving data in the era of 80-character punched cards), will be retained for visual observations, to lessen confusion. The new format will involve only the addition of additional information beyond column 80, and this new format is explained here. Beginning in the January 2002 *ICQ*, we will begin tabulating CCD data in a different manner to incorporate these new bits of information that observers will be expected now to contribute. Note that, in another long-overdue change, we have begun separate tabulations of visual and CCD data on comets in this issue; photographic data will be tabulated with CCD data. Non-visual measurements have long been known to be quite different from visual measurements, and readers have commented that they have found it increasingly awkward to have visual and non-visual photometry tabulated together. Contributors may continue to send visual and non-visual data together, as our computer programs will separate the two types of data before publication.

Below is a table showing the new *ICQ* format for tabulated data, intended to include more CCD information, starting in column 81. First is given two lines to indicate the line number, followed by a line with helpful headings, followed by two example lines that might show actual data contributed by the observer, followed again by two lines indicating the column number. Note that certain codes representing camera name, type of CCD chip, etc., will be defined in future issues of the *ICQ* as data arrive from observers and are published; for now, contributors of CCD data should spell out such information in descriptive information for coding by the *ICQ* staff via the new codes (the first list of which will be given in the January 2002 issue). While the details may seem extensive at first, it will soon be realized that many or most of the fields in columns 81-129 will remain identical for many individual observers from observation to observation. The data indicated below should help analysts of cometary photometry to learn more about the brightness of comets than was possible with the earlier, more-limited data.

```

          90          100          110          120          130
123456789 123456789 123456789 123456789 123456789

f InT APERTURcamchip SFW C ## u.uu xx.x PIXELSIZE

I      S 0.57mST5 T25 G70 1 U4          7.2 11.5s 5.5
15a120C 1.0 mST5aT25 FPr 3 P5 0.55 12.5 1.0m 1.0

123456789 123456789 123456789 123456789 123456789
          90          100          110          120          130

```

Explanation of columns:

Columns 81-82, f: if comparison stars are in the same frame as the comet, write "I" in column 81; if comparison stars are in the next field (one instrumental field size outside that of the comet), write "N" in column 81; otherwise, put a two-digit number in columns 81-82 (flush right) indicating the estimated distance of comparison-star field from the comet in whole degrees (with 99 indicating 99° or greater; 00 indicates $< 1^\circ$).

Columns 83-86, InT: integration time of comparison-star field when the field is outside that of (or different from) the comet exposure (given in seconds, flush right); use identical column format to that used for CCD exposure of comet field in columns 44-47.

Columns 87-93, APERTUR: columns 88-92 hold numerical dimension of photometric aperture size, with decimal in column 90; column 93 has letter to denote units (d = degrees, m = arcmin, s = arcsec); column 87 gives the shape of the photometric aperture (S = square, C = circular). *NOTE that this means that only actual, measured coma diameters will appear in columns 50-54 — and that the plus-sign (+), which indicated an aperture size for electronic photometry, will no longer be used in column 49.*

Columns 94-100, camchip: three-character code to specify CCD camera in columns 94-96; then three-character code to specify camera's CCD chip in columns 98-100 (e.g., T25 = TC255); column 97 contains "a" to denote an anti-blooming CCD.

Columns 102-104, SFW: 3-character code to denote the software package used to derive the magnitudes (e.g., G70 = Guide 7.0; FPr = FitsPro, etc.). This is different from the source of comparison-star magnitudes.

Column 106, C: 1 = correction for bias; 2 = flat-field corrected; 3 = both.

Columns 108-109, ##: number of CCD frames taken of comet on same night, for verification of proper identification (flush right); if accurate astrometry was performed and submitted formally to the ICQ/MPC/CBAT for publication, place either a "P" for "published" or a "U" in column 108 for either "unpublished" or "publication status unknown" (and, if more than 9 images were obtained on a single night of this comet and astrometry was also reported, simply put a "9" in column 109 in addition to the letter in column 108).

Columns 111-114, u.uu: estimated error/uncertainty in magnitude (decimal point in column 112).

Columns 116-119, xx.x: magnitude of the comparison star closest in brightness to that of the comet.

Columns 121-129, PIXELSIZE: assumed rectangular shape, with one pixel side given numerically in columns 121-124 (decimal point in column 123) and the other (perpendicular) side given numerically in columns 126-129 (decimal point in column 128); column 125 contains the letter that denotes the units (d = degrees, m = arcmin, s = arcsec).

Φ Φ Φ

Tabulation of Comet Observations

Beginning with this issue, the tabulated CCD and visual data are segregated into separate groups. Note also that the usual ordering of comets in the descriptive and tabulated sections (long-period comets, numbered short-period comets, unnumbered short-period comets) has been changed also: listed first are the numbered short-period comets, followed by all the unnumbered comets [long- and short-period comets merged together, by year/letter(s)/number(s) designations].

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

See the July 2001 issue (page 98) for explanations of the abbreviations used in the descriptive information. The descriptive information below complements both the CCD/photographic tabulated data and the visual tabulated data (with non-visual and visual information combined into the same text).

◊ *Comet 2P/Encke* ⇒ 2000 July 31.10-Aug. 11.13: Guide 6.0 software used for comparison-star magnitudes [REN].

◊ *Comet 19P/Borrelly* ⇒ 2001 July 31.78, Aug. 21.79, 28.78, Sept. 17.78, Oct. 13.76, 14.77, and 29.84: Guide 7.0 software used for photometry [YOS02]. Aug. 14.79: "rather difficult due to nearby moon and drifting mist; not as confident of the accuracy of the estimate as I desired" [SEA]. Aug. 15.78, 17.77, 22.74, Sept. 17.79, 22.79, Oct. 18.68, and 24.72: Guide 6.0 software used for photometry [NAG08]. Aug. 18.13: w/ 25.6-cm L (169×), central cond. of mag 13.7; 1' jet/fan in p.a. 90° [BIV]. Aug. 23.77, 24.79, Sept. 18.79, and Oct. 19.76: Guide 6.0 software used for photometry [TSU02]. Aug. 28.79, Sept. 16.79, and 22.80: Guide 6.0 used for photometry [HAS08]. Aug. 29.10: slight enhancement w/ a Lumicon Swan Band Filter [MEY]. Sept. 1.14: w/ 25.6-cm L (169×), central cond. of mag 13.3; 1' jet in p.a. 85° [BIV]. Sept. 15.11: w/ 25.6-cm L (169×), central cond. of mag 13.3; 1' jets in p.a. 85° and 130° [BIV]. Sept. 21.16: astrometry reported to MPC (co-observer S. Sanchez) [ROD03]. Sept. 22.74, 24.76, and Oct. 13.79: Guide 7.0 software used for photometry [MIY01]. Sept. 23.16: w/ 20.3-cm L (95×), central cond. of mag 13.5 [BIV]. Sept. 30.16: w/ 25.6-cm L (169×), central cond. of mag 13.8; 1' jets in p.a. 95° and 65° [BIV]. Oct. 14.16: CCD at focus of 200-mm-focal-length f/3.5 telephoto lens, mounted on a Nexstar 5 for altazimutal tracking; this same set-up was used for obs. of P/2001 Q2, C/2000 WM₁, and C/2000 SV₇₄ on same night [MOR09]. Oct. 16.20: w/ 20.3-cm L (95×), central cond. of mag 13.8 [BIV]. Oct. 25.81 and 26.81: Guide 7.0 software used for photometry [WAT01]. Oct. 28.17: w/ 25.6-cm L (169×), central cond. of mag 13.7; main jet in p.a. 110°, curving to 95° [BIV].

◊ *Comet 24P/Schaumasse* ⇒ 2001 Aug. 13.45: Guide 6.0 software used for photometry [TSU02].

◊ *Comet 29P/Schwassmann-Wachmann* ⇒ 2001 July 24.58, Aug. 13.51, and 18.54: Guide 6.0 software used for photometry [TSU02]. Aug. 13.51: in outburst [TSU02]. Aug. 23.60: Milky Way interference [MAT08].

◊ *Comet 41P/Tuttle-Giacobini-Kresák* ⇒ 2000 Dec. 8.23: enhanced w/ Swan-band filter; Guide 6.0 software used for comparison-star magnitudes [REN].

◊ *Comet 44P/Reinmuth* ⇒ 2001 Aug. 24.82, Sept. 18.77, and Oct. 14.84: Guide 6.0 software used for photometry [TSU02].

◇ *Comet 51P/Harrington* ⇒ 2001 Sept. 23.74: Guide 6.0 was used for photometry [TSU02]. Sept. 24.74: in outburst w/ a very strong central cond. and a faint tail (astrometry reported to MPC) [KAD02].

◇ *Comet 74P/Smirnova-Chernykh* ⇒ 2001 Mar. 27.91: comet verified w/ "Deep Sky Survey"; Guide 6.0 software used for comparison-star magnitudes [REN]. June 10.78-14.78: obs. from the Great Karroo, South Africa, under superb skies; limiting stellar magnitude generally 1.5 mag fainter than comet; comet usually followed for 10-20 min to ensure proper identification, appearance being diffuse and extended and very different from images of nearby stars; obs. charts prepared from Guide 6.0 software, usually with 1° field and showing stars to mag 15 or limit of Guide — comet plotted using latest orbital elements from ICQ/CBAT/MPC website or from latest *MPECs* [BOU].

◇ *Comet 110P/Hartley* ⇒ 2000 Nov. 24.11: comet identified by its motion; Guide 6.0 software used for comparison-star magnitudes [REN]. Nov. 30.05: comet less enhanced w/ Swan-band filter; Guide 6.0 software used for comparison-star magnitudes [REN].

◇ *Comet C/1997 BA₆ (Spacewatch)* ⇒ 2001 Aug. 13.65, Sept. 12.57, and Oct. 11.51: Guide 6.0 software used for photometry [TSU02].

◇ *Comet C/1998 T1 (LINEAR)* ⇒ 1999 July 4.00: comet brighter w/ Swan-band filter [DEA]. July 4.97: comet slightly brighter w/ Swan-band filter [DEA].

◇ *Comet C/1999 F1 (Catalina)* ⇒ 2001 June 11.73 and 12.72: small, well-condensed object; very faint, but unambiguously identified using Digital Sky Survey image as a ref.; obs. from the Great Karroo, South Africa, under superb skies; limiting stellar magnitude generally 1.5 mag fainter than comet; comet usually followed for 10-20 min to ensure proper identification, appearance being diffuse and extended and very different from images of nearby stars; obs. charts prepared from Guide 6.0 software, usually with 1° field and showing stars to mag 15 or limit of Guide — comet plotted using latest orbital elements from ICQ/CBAT/MPC website or from latest *MPECs* [BOU].

◇ *Comet C/1999 J2 (Skiff)* ⇒ 2001 June 10.79-14.80: obs. from the Great Karroo, South Africa, under superb skies; limiting stellar magnitude generally 1.5 mag fainter than comet; comet usually followed for 10-20 min to ensure proper identification, appearance being diffuse and extended and very different from images of nearby stars; obs. charts prepared from Guide 6.0 software, usually with 1° field and showing stars to mag 15 or limit of Guide — comet plotted using latest orbital elements from ICQ/CBAT/MPC website or from latest *MPECs* [BOU]. Aug. 22.47: Guide 7.0 software used for photometry [NAK01].

◇ *Comet C/1999 K8 (LINEAR)* ⇒ 2000 Nov. 30.78: ephemeris from "Minor Planet Electronic Service" (<http://cfa-www.harvard.edu/iau/MPEph/MPEph.html>), checked with Real Sky software [HAS02]. 2001 Oct. 14.74: Guide 7.0 software used for photometry [NAK01].

◇ *Comet C/1999 L3 (LINEAR)* ⇒ 2000 Jan. 21.20: obs. during total lunar eclipse [MOR03]. Jan. 25.92: comet less enhanced w/ Swan-band filter; Guide 6.0 software used for comparison-star magnitudes [REN].

◇ *Comet C/1999 N2 (Lynn)* ⇒ 1999 July 13.95: comet discovery confirmed w/ this obs. [DEA]. July 14.93 and 17.93: comet slightly brighter w/ Swan-band filter [DEA].

◇ *Comet C/1999 S2 (McNaught-Watson)* ⇒ 2001 Oct. 14.73: Guide 7.0 software used for photometry [NAK01].

◇ *Comet C/1999 S4 (LINEAR)* ⇒ 1999 Nov. 4.05-2000 July 30.89: Guide 6.0 software used for HS and TT comparison-star magnitudes [REN].

◇ *Comet C/1999 T1 (McNaught-Hartley)* ⇒ 2000 Dec. 22.25-2001 Apr. 26.01: Guide 6.0 software used for comparison-star magnitudes [REN]. Dec. 22.29: comet appears same brightness with Swan-band filter [DEA]. 2001 Jan. 6.42: slight brightening w/ Swan-band filter [SHA04]. Feb. 15.09 and 16.10: only a central part of coma was measured, w/in a square aperture of size 1'60 × 1'60; the fully visible coma was 6'0 in dia. [HOR02]. Feb. 19.23: poor sky; round coma [LOO01]. July 11.99: moonlight [RES]. July 14.93: m_1 was measured in a square aperture of size 1'60 × 1'60 [HOR02]. Aug. 11.90: limiting stellar mag 15.0; ephemeris from MPES (see entry for C/1999 K8 on 2000 Nov. 30.78, above) [HAS02]. Aug. 13.49, Sept. 4.44, and Oct. 11.43: Guide 6.0 software used for photometry [TSU02]. Aug. 22.88-23.04: motion detected in this time interval (orbital elements from MPEC site, imported to Guide 7) [RES]. Aug. 23.89: motion checked between Aug. 23.89 and 23.94 (ephemeris as in note for Aug. 22.88, above) [RES].

◇ *Comet C/1999 T2 (LINEAR)* ⇒ 2000 July 5.99: comet less enhanced w/ Swan-band filter; Guide 6.0 software used for comparison-star magnitudes [REN]. July 30.99: obs. in mountains at elevation 1000 m; Guide 6.0 software used for comparison-star magnitudes [REN].

◇ *Comet C/1999 U4 (Catalina-Skiff)* ⇒ 2001 Aug. 29.09: small, somewhat-condensed object; reality checked versus Digital Sky Survey [BOU].

◇ *Comet C/1999 Y1 (LINEAR)* ⇒ 2000 Aug. 28.98: comet less enhanced w/ Swan-band filter; Guide 6.0 software used for comparison-star magnitudes [REN]. 2001 Aug. 18.68: Guide 6.0 software used for photometry [TSU02]. Aug. 27.71: Guide 7.0 software used for photometry [NAK01].

◇ *Comet C/2000 CT₅₄ (LINEAR)* ⇒ 2001 June 10.80, 11.83, 12.84, 13.88, and 14.83: comparison stars on all dates selected from nearby field of NGC 121, with Johnson V magnitudes as given in Skiff's LONEOS ftp file; obs. from the Great Karroo, South Africa, under superb skies; limiting stellar magnitude generally 1.5 mag fainter than comet; comet

usually followed for 10-20 min to ensure proper identification, appearance being diffuse and extended and very different from images of nearby stars; obs. charts prepared from Guide 6.0 software, usually with 1° field and showing stars to mag 15 or limit of Guide — comet plotted using latest orbital elements from ICQ/CBAT/MPC website or from latest MPECs [BOU]. June 10.80: comet close to star of mag 15 [BOU].

◊ *Comet C/2000 OF₈ (Spacewatch)* ⇒ 2001 June 10.72-14.77: obs. from the Great Karroo, South Africa, under superb skies; limiting stellar magnitude generally 1.5 mag fainter than comet; comet usually followed for 10-20 min to ensure proper identification, appearance being diffuse and extended and very different from images of nearby stars; obs. charts prepared from Guide 6.0 software, usually with 1° field and showing stars to mag 15 or limit of Guide — comet plotted using latest orbital elements from ICQ/CBAT/MPC website or from latest MPECs; this comet was off-track by ~ 1', later confirmed by new orbital elements [BOU].

◊ *Comet C/2000 SV₇₄ (LINEAR)* ⇒ 2001 July 22.03: diffuse object at correct position; due to twilight, motion not obs. [RES]. July 28.99: jets 0'6 long in p.a. 320° and 0'4 long jet in p.a. 40° [HOR02]. July 31.03: jet 0'5 long in p.a. 35° [HOR02]. Aug. 11.86: limiting stellar mag 15.0; ephemeris from MPES (see entry for C/1999 K8 on 2000 Nov. 30.78, above) [HAS02]. Aug. 15.92: elongated coma in p.a. 50° [HOR02]. Aug. 16.93: elongated coma in p.a. 47° [HOR02]. Oct. 8.79, 15.84, and 16.94: comparison stars used from Henden sequence of V723 Cas, as adopted by the AAVSO [BOU]. Oct. 11.54: Guide 6.0 software used for photometry [TSU02]. Oct. 18.63 and 24.66: Guide 6.0 software used for photometry [NAG08].

◊ *Comet C/2000 W1 (Utsunomiya-Jones)* ⇒ 2000 Dec. 5.95: comet appears brighter and more condensed with Swan-band filter [DEA]. Dec. 6.95 and 7.94: comet slightly brighter w/ Swan-band filter [DEA].

◊ *Comet C/2000 WM₁ (LINEAR)* ⇒ 2001 Aug. 18.13: although faint, comet was seen under good skies (naked-eye limiting mag 6.3); the comet's motion was checked over 2 hr "and no group of stars could have been confusing" (via comparison with the Digital Sky Survey); independent measures at 169× at this time yielded $m_1 = 14.1$ (MM = S, ref = HS), coma dia. 0'6, DC = 3 [BIV]. Aug. 24.74, Sept. 17.65, Oct. 13.61, and 19.63: Guide 6.0 software used for photometry [TSU02]. Aug. 29.11: "comet appeared harder to see than C/2000 SV₇₄, so the HS mags may be too bright" [SHA02]. Sept. 14.90: comet close to star of mag 11 [BOU]. Sept. 17.68, Oct. 13.67, 14.67, 18.73, and 29.82: Guide 7.0 software used for photometry [YOS02]. Sept. 22.78, Oct. 11.58, 18.65, and 24.64: Guide 6.0 software used for photometry [NAG08]. Sept. 23.66: co-added CCD frame (total integration time 420 sec) taken w/ 35.0-cm C shows a 0'5 coma and a 3'0 tail in p.a. 270° [TSU02]. Sept. 25.02: astrometry reported to MPC (co-observer S. Sanchez) [ROD03]. Oct. 12.94: comet close to bright star, interfering w/ estimate [RES]. Oct. 13.64: Guide 7.0 software used for photometry [MIY01]. Oct. 13.91: coma elongated E-W [HAS02]. Oct. 16.18: w/ 20.3-cm L (95×), central cond. of mag 13.9 [BIV]. Oct. 16.91: comet well visible and becoming more condensed; tail length and p.a. determined at 143× [BOU]. Oct. 22.08: comet only barely visible due to bright sky background; major auroral display this night [GRA04]. Oct. 23.04: coma appeared diffuse and ill-defined [GRA04]. Oct. 23.75, 25.79, and 26.80: Guide 7.0 software used for photometry [WAT01]. Oct. 28.15: w/ 25.6-cm L (169×), central cond. of mag 13.3 [BIV].

◊ *Comet C/2001 A2 (LINEAR)* ⇒ 2001 Apr. 1.39-July 22.45: comparison-star magnitudes taken from Bill Gray's Guide software [JON]. Apr. 15.04 and 22.04: slight brightening w/ Swan-band filter [SHA04]. Apr. 27.04: definite brightening w/ Swan-band filter [SHA04]. May 3.96 and 5.96: ref. stars SAOC 170506 (mag 5.54) and SAOC 170715 (5.88) [MAN04]. May 11.97, 13.96, 16.94, 17.93, 18.93, 19.92, and 21.92: ref. stars SAOC 170506 (mag 5.54), SAOC 170613 (mag 5.28), SAOC 170715 (mag 5.88) [MAN04]. June 28.04: low alt., bright background, twilight [RES]. July 1.01: clear gaps in the heavy clouds, and not the best seeing; twilight, low alt. [RES]. July 3.98: moonlight; w/ 0.41-m L, diffuse nuclear cond., very faint tail ~ 0'7 long [RES]. July 4.99: full moon [RES]. July 5.98: moonlight; near very red variable TX Psc [RES]. July 6.98: moonlight [RES]. July 12.89, 14.91, 15.89, 18.01, 19.96: w/ 6.3-cm f/13 R (52×), $m_2 = 10.0$ [KOS]. July 12.91: easy naked-eye object in excellent conditions; w/ 41-cm f/5 L, comet condensed (DC = 6, dia. = 18') w/ tail ~ 1° long in p.a. 145° [RES]. July 13.99: w/ 15×70 B, coma dia. 40', DC = 0 [MER05]. July 15.97: w/ 15×70 B, coma dia. 35', DC = 0 [MER05]. July 28.68, 30.68, Aug. 2.77, 8.47, 12.61, 13.58, 15.72, 17.75, and 22.70: Guide 6.0 software used for photometry [NAG08]. July 28.68: w/ 32-cm L (58×), tail ~ 30' long in p.a. 200° [NAG08]. July 31.80, Aug. 14.49, 22.55, 28.74, and Sept. 11.54: Guide 7.0 software used for photometry [YOS02].

Aug. 3.02: moonlight, haze [BAR06]. Aug. 5.84: moonlight [HOR02]. Aug. 6.89 and 7.90: comparison stars HIP 101741 (mag 8.5) and HIP 101657 (mag 9.0) [MAR02]. Aug. 6.97: visibility clearly inferior to open cluster NGC 7789 [GRA04]. Aug. 7.95: diffuse and ill-defined coma; comet only barely seen w/ 7.0-cm R (24×); gibbous Moon and astronomical twilight [GRA04]. Aug. 8.52: moonlight [MAT08]. Aug. 9.92: w/ 25.6-cm L (169×), central cond. of mag 13.9 [BIV]. Aug. 10.50: comet appeared somewhat enhanced using Swan Band Filter [SEA]. Aug. 10.91: w/ 25.6-cm L (169×), central cond. of mag 14.4 [BIV]. Aug. 11.94: w/ 25.6-cm L (169×), central cond. of mag 14.5 [BIV]. Aug. 12.29: faint tail [LIN04]. Aug. 13.58, Sept. 12.51, and Oct. 11.48: Guide 6.0 software used for photometry [TSU02]. Aug. 13.90: very diffuse coma, slightly condensed towards center; at 333×, small knot of material (dia. 15'') w/ an overall brightness of mag 13 at center [KAM01]. Aug. 17.99: comet very faint in 7.0-cm R, but easier in 20.3-cm T, in a moderately dark sky [GRA04]. Aug. 18.14: "central cond. of dia. < 3'' and mag 14.4; the coma was strongly asymmetrical in p.a. 165° and may indicate the beginning of a broad, diffuse dust tail whose observed length of 3' was totally defined by the system-limited field-of-view; no substructure was noted to be associated with the tail's point of origin" [ROQ]. Aug. 18.95: "comet was an object of low surface brightness, clearly inferior to that of M33 and NGC 205, also slightly weaker than the E part of the Veil Nebula (NGC 6992)" [GRA04]. Aug. 23.97: comet close to bright star TT 1625.1596 (mag 8.35) [LEH]. Aug. 25.14: "central cond. of dia. 2'' and mag 14.8; coma pronouncedly asymmetrical

in p.a. 162° , possibly indicating the initial beginning of a very diffuse, short tail; comet's apparent motion measured as $\approx 38''/\text{hr}$ in p.a. 233° [ROQ]. Aug. 29.05: rather large, diffuse object, involved with several stars, hence difficult to estimate accurately [BOU]. Sept. 14.85: comet just a very faint, diffuse glow [BOU]. Sept. 19.90: interference from faint stars in field [RES]. Oct. 5.81: at Observatorio Montcabrer, Cabrils, Spain (MPC code 213, for which astrometry is usually submitted in conjunction with CCD photometry); measurer is listed as Montse Campas for astrometry; Meade 25.4-cm LX200 T + Starlight MX-916 CCD camera [NAV01]. Oct. 15.85: astrometry sent to MPC; LX200 30.5-cm $f/6.3$ reflector + CCD w/ ST9E window; R magnitudes from USNO-SA2.0 and -SA1.0 catalogues [MAN05].

◇ Comet C/2001 K3 (Skiff) \Rightarrow 2001 June 13.89: obs. from the Great Karroo, South Africa, under superb skies; limiting stellar magnitude generally 1.5 mag fainter than comet; comet usually followed for 10-20 min to ensure proper identification, appearance being diffuse and extended and very different from images of nearby stars; obs. charts prepared from Guide 6.0 software, usually with 1° field and showing stars to mag 15 or limit of Guide — comet plotted using latest orbital elements from ICQ/CBAT/MPC website or from latest MPECs [BOU]. July 12.94: motion detected after 45 min (orbital elements from ICQ/MPC website); at $262\times$, limiting stellar mag ~ 16.3 in comet field [RES]. July 24.65 and Aug. 13.56: Guide 6.0 software used for photometry [TSU02].

◇ Comet C/2001 K5 (LINEAR) \Rightarrow 2001 June 9.73-13.73: obs. from the Great Karroo, South Africa, under superb skies; limiting stellar magnitude generally 1.5 mag fainter than comet; comet usually followed for 10-20 min to ensure proper identification, appearance being diffuse and extended and very different from images of nearby stars; obs. charts prepared from Guide 6.0 software, usually with 1° field and showing stars to mag 15 or limit of Guide — comet plotted using latest orbital elements from ICQ/CBAT/MPC website or from latest MPECs [BOU]. Aug. 22.46 and Sept. 16.43: Guide 7.0 software used for photometry [NAK01].

◇ Comet C/2001 MD₇ (LINEAR) \Rightarrow 2001 Aug. 18.56: Guide 6.0 software used for photometry [TSU02].

◇ Comet P/2001 O2 (NEAT) \Rightarrow 2001 Aug. 27.68: Guide 7.0 software used for photometry [NAK01].

◇ Comet P/2001 Q2 (Petriew) \Rightarrow 2001 Aug. 20.09: easy object; some interference from GSC star of mag 11.7 at edge of coma [BOU]. Aug. 21.07: variable conditions w/ fog forming and disappearing; moreover, comet close to GSC star of mag 10.7 [BOU]. Aug. 21.77, 28.80, Oct. 13.78, and 14.80: Guide 7.0 software used for photometry [YOS02]. Aug. 22.72, Sept. 17.80, and 22.80: Guide 6.0 software used for photometry [NAG08]. Aug. 22.79, 28.78, Sept. 16.80, and 22.82: Guide 6.0 used for photometry [HAS08]. Aug. 23.08: brighter inner coma seems elongated, while fainter outer coma seems more spherical; photograph taken on Aug. 23.11 w/ T-Max 400 film yields the tabulated data for that time [HOE]. Aug. 23.74, 24.77, Sept. 18.82, and Oct. 19.81: Guide 6.0 software used for photometry [TSU02]. Aug. 26.10 and 30.10: m_1 was measured in a square aperture $1'60 \times 1'60$ [HOR02]. Aug. 29.10: somewhat brighter and more condensed w/ a Lumicon Swan Band Filter [MEY]. Aug. 31.08: obs. disturbed by light from Jupiter (in same field-of-view) [LEH]. Sept. 1.11: some interference from Jupiter, only $20'$ away [BOU]. Sept. 1.16: w/ 25.6-cm L ($169\times$), central cond. of mag 13.6 [BIV]. Sept. 5.79: bright moonlight; comet was a little enhanced using Swan Band filter [SEA]. Sept. 15.13: w/ 25.6-cm L ($169\times$), central cond. of mag 14.1 [BIV]. Sept. 22.76, 24.78, and Oct. 13.80: Guide 7.0 software used for photometry [MIY01]. Sept. 26.76: rather low surface brightness, but enhanced using Swan Band filter [SEA]. Sept. 29.16: comet close to star of mag 10 [BOU].

◇ Comet C/2001 Q4 (NEAT) \Rightarrow 2001 Sept. 18.74: "has an obvious coma at $r = 10$ AU!" [NAK01]. Sept. 21.08: astrometry reported to MPC (co-observer S. Sanchez) [ROD03]. Sept. 23.69: Guide 6.0 was used for photometry [TSU02].

◇ Comet P/2001 Q5 (LINEAR-NEAT) \Rightarrow 2001 Oct. 13.52: Guide 6.0 software used for photometry [TSU02].

◇ Comet P/2001 Q6 (NEAT) \Rightarrow 2001 Oct. 13.55: Guide 6.0 software used for photometry [TSU02]. Oct. 13.64 and 14.74: Guide 7.0 software used for photometry [YOS02]. Oct. 18.64 and 24.65: Guide 6.0 software used for photometry [NAG08].

◇ Comet C/2001 S1 (Skiff) \Rightarrow 2001 Oct. 12.66: Guide 7.0 software used for photometry [NAK01]. Oct. 24.61: Guide 6.0 software used for photometry [NAK01].

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Key to observers with observations published in this issue, with 2-digit numbers between Observer Code and Observer's Name indicating source [11 = Dutch Comet Section (via A. Scholten); 13 = Agrupacion Astronomica de Madrid (via J. Carvajal); 16 = Japanese observers (via Akimasa Nakamura, Kuma, Japan); 23 = Czech group (via V. Znojil); 32 = Hungarian group (via K. Sarneczky); 36 = Italian observers (via Antonio Milani); 37 = Ukrainian Comet Section (via A. R. Baransky); 42 = Belarus observers (via V. S. Nevski and S. E. Shurpakov); etc.]. Those with asterisks (*) preceding the 5-character code are new additions to the Observer Key:

ADA02 18	Jacek Adamik, Poland	*BAN01 18	Robert Bankowski, Sanok, Poland
BAL03 42	Igor I. Baluk, Gomel, Belarus	BAR	Sandro Baroni, Italy
BAL05 18	Andrzej Balcerek, Wronki, Poland	BAR06 37	Alexandr R. Baransky, Ukraine

BEG01	15	Mike Begbie, Harare, Zimbabwe	MEY	28	Maik Meyer, Germany
BIV		Nicolas Biver, France	MIY01	16	Osamu Miyazaki, Ibaraki, Japan
BOHO2	18	Jerzy Bohusz, Gdynia, Poland	MOR03		Warren C. Morrison, Canada
BOU		Reinder J. Bouma, Netherlands	MOR09		Philippe Morel, France
BRL	12	Pál Brlás, Budapest, Hungary	NAG08	16	Yoshimi Nagai, Koufu, Japan
BURO4	18	Wojciech Burzynski, Poland	NAK01	16	Akimasa Nakamura, Kuma, Japan
CHE03	33	Kazimieras T. Cernis, Lithuania	*NAV01		Ramon Naves, Barcelona, Spain
CH001	18	Franciszek Chodorowski, Poland	NEV		Vitali S. Nevski, Belarus
CHR	18	Antoni Chrapek, Pikulice, Poland	NOW		Gary T. Nowak, VT, U.S.A.
COM	11	Georg Comello, The Netherlands	OOT	16	Isao Ootsuki, Miyagi, Japan
COO02		Tim P. Cooper, South Africa	ORI	16	Takaaki Oribe, Tottori, Japan
CRE02	36	Claudio Cremaschini, Italy	OSS	18	Piotr Ossowski, Poland
CSU01	32	István Csuti, Maglód, Hungary	PAC03	18	Pawel Paczkowski, Serock, Poland
DEA		Vicente F. de Assis Neto, Brazil	PAR03	18	Mieczyslaw L. Paradowski, Poland
DES01		Jose G. de Souza Aguiar, Brazil	*PIL	18	Aleksandra Pilecka, Poland
DIE02		Alfons Diepvens, Belgium	POW01	18	Jacek Powichrowski, Poland
DIJ		Edwin van Dijk, The Netherlands	PRI04	15	David Pringlewood, Zimbabwe
DUS	18	Grzegorz Duszanowicz, Sweden	REN		Alexandre Renou, France
END	16	Tsunenobu Endo, Matsumoto, Japan	RES	18	Maciej Reszelski, Poland
FIL04	18	Marcin Filipek, Poland	ROD01		Diego Rodriguez, Mallorca, Spain
FUKO2	16	Hideo Fukushima, Tokyo, Japan	ROD03		Juan Rodríguez, Palma, Spain
GIA01		Antonio Giambersio, Italy	ROQ		Paul Roques, AZ, U.S.A.
GRA04	24	Bjoern Haakon Granslo, Norway	RZE	18	Zbigniew Rzepka, Poland
GRA09	18	Krzysztof Graczeński, Poland	SAD	18	Piotr Sadowski, Poland
GRE		Daniel W. E. Green, MA, U.S.A.	SAN04	38	Juan M. San Juan, Madrid, Spain
GUZ	18	Piotr Guzik, Krosno, Poland	SAN07	32	Gábor Sánta, Hungary
HAS02		Werner Hasubick, Germany	SAR02	32	Krisztián Sárneckzy, Hungary
HAS08	16	Yuji Hashimoto, Hiroshima, Japan	SCH04	11	Alex H. Scholten, Netherlands
HOE		Sebastian F. Hoenig, Germany	SCI		Tomasz Sciezor, Poland
HORO2	23	Kamil Hornoch, Czech Republic	SEA	14	David A. J. Seargent, Australia
JON		Albert F. Jones, New Zealand	SEA01	14	John Seach, Australia
KADO2	16	Ken-ichi Kadota, Saitama, Japan	SEG	38	Carlos Segarra, Valencia, Spain
KAMO1		Andreas Kammerer, Germany	SER02		Jérôme Serant, Chevillon, France
KEMO1		Paul Kemp, Auckland, New Zealand	SHA02	07	Jonathan D. Shanklin, England
*KEZ	18	Piotr Kezwon, Jasienica, Poland	SHA04		Gregory T. Shanos, U.S.A.
KIDO1	18	Krzysztof Kida, Elbląg, Poland	SHU		Sergey E. Shurpakov, Belarus
*KISO3	18	Adam Kisielewicz, Turka, Poland	SIE	33	Henryk Sielewicz, Lithuania
KOP		Joerg Kopplin, Germany	*SIK01	18	Mieczyslaw Sikora, Poland
KOS		Attila Kósa-Kiss, Romania	*SKR	18	Emilian Skrzynecki, Poland
KOU	23	Jakub Koukal, Czech Republic	SMY	18	Jaroslav Smyslo, Poland
KUB	23	Pavel Kubicek, Czech Republic	SOS		Giovanni Sostero, Italy
KWI	18	Maciej Kwinta, Krakow, Poland	SOW	16	Toshihide Sowa, Wakayama, Japan
KYS	23	J. Kysely, Czech Republic	SPE01	18	Jerzy Speil, Poland
LEG	18	Marian Legutko, Gliwice, Poland	STO03	07	David Storey, Oxfordsh., England
LEH		Martin Lehky, Czech Republic	SWI	18	Mariusz Swietnicki, Poland
LINO4		Mike Linnolt, HI, U.S.A.	TIC		Milos Tichy, Czech Republic
LOO01		Frans R. van Loo, Belgium	TOT03	32	Zoltán Tóth, Hungary
MAKO2	18	Pawel Maksym, Lodz, Poland	TSU02	16	Mitsunori Tsumura, Japan
MAN04		Luis Alberto Mansilla, Argentina	WAL03	18	Lukasz Walec, Poland
*MAN05		Jose Manteca Vazquez, Spain	WAT01	16	Nobuo Watanabe, Hokkaido, Japan
MARO2	13	Jose Carvajal Martinez, Spain	WLO	18	Robert Wlodarczyk, Poland
MAR12	18	Leszek Marcinek, Poland	YOS02	16	Katsumi Yoshimoto, Japan
MAR13	18	Jerzy Marcinek, Poland	YOS04	16	Seiichi Yoshida, Ibaraki, Japan
MAT08		Michael Mattiazzo, S. Australia	ZAN		Mauro Vittorio Zanotta, Italy
*MERO5	07	Cliff Meredith, England	ZNO	23	Vladimír Znojil, Czech Republic

TABULATED DATA

NOTE: The CCD and visual tabulated data are separated for the first time in this issue. For this issue only, the tabulated CCD data are given in the old format (see page 158 of this issue for more details); a new printed format will be displayed in the January 2002 issue for CCD data only.

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

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

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

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

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Non-Visual Data

Comet 2P/Encke

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 28.66	a	C	19.7	GA	60.0	Y	6	a240	0.2				NAK01

Comet 16P/Brooks

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 16.74			C 16.0	TJ	18.0	L	6	a120	0.25				KAD02
2001 08 22.69			C 16.0	TJ	18.0	L	6	a180	0.3		0.7m	250	KAD02
2001 08 27.81			C 15.8:	GA	60.0	Y	6	a120	0.5			260	NAK01
2001 09 23.76			C 16.2	TJ	18.0	L	6	a240	0.45				KAD02
2001 09 24.04			C 16.0	UO	25.4	T	5	a180		7			NAVO1
2001 10 11.70			C 16.6	TJ	18.0	L	6	a180	0.35		0.4m	252	KAD02
2001 10 26.73			C 16.5	TJ	18.0	L	6	a240	0.3				KAD02

Comet 19P/Borrelly

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 16.77			C 12.9	TJ	18.0	L	6	a 60	0.7				KAD02
2001 08 03.77			C 12.4:	TJ	18.0	L	6	a 60	0.75				KAD02
2001 08 11.12			& C 11.8	HS	10.5	R	5	a060	0.5	2			MOR09
2001 08 13.10			& C 11.4	HS	10.5	R	5	a060	0.8	2			MOR09
2001 08 18.15			& C 11.1	HS	10.5	R	5	a060	1.0	2			MOR09
2001 08 22.14			! C 11.3:	HI	30	T	9	a 60	> 1	D7			ROD03
2001 08 22.78			C 11.3	TJ	18.0	L	6	a 40	1.8				KAD02
2001 08 24.13			& C 11.6	HS	10.5	R	5	a060	0.7	1			MOR09
2001 08 24.79			x C 11.4	TT	35.0	C	14	a600	1.3	5	2.0m	253	TSU02
2001 08 25.15			! C 11.1	HI	30	T	9	a 20	> 1	D7			ROD03
2001 08 28.80			a C 10.7	GA	60.0	Y	6	a 60	3.4		> 6.2m	256	NAK01
2001 09 04.76			C 11.1	TJ	18.0	L	6	a 40	2.1		1.6m	265	KAD02
2001 09 18.79			C 10.9	TJ	18.0	L	6	a 60	1.7		0.8m	263	KAD02
2001 09 18.79			x C 11.1	HJ	35.0	C	10	a600	1.0	5	5.0m	266	TSU02
2001 09 19.15					40	L	4	a180	> 2.7	D6	> 3.8m	274	ROD03
2001 09 19.15			! C 12.3	GA	40	L	4	a 8	> 0.5	D6	> 1.5m	274	ROD03
2001 09 21.16			! C 12.8	GA	40	L	4	a 5	> 0.9	D6	> 2.4m	274	ROD03
2001 09 21.18					40	L	4	a240	> 2.4	D6	> 4.1m	274	ROD03
2001 09 22.71			C 10.8	TJ	18.0	L	6	a 60	2.5		2.3m	267	KAD02
2001 09 23.13			C 11.2	HS	20.3	L	6	a060	0.4	1			MOR09
2001 09 23.82			C 10.6	TJ	18.0	L	6	a 40	2.6				KAD02
2001 09 24.12			c 13.3	UO	25.4	T	5	a 20	8.0	4	40 s	252	NAVO1
2001 09 28.78			C 10.6	TJ	18.0	L	6	a 90	2.8		4.9m	268	KAD02
2001 10 02.74			C 10.7	TJ	18.0	L	6	a 60	2.7		3.4m	271	KAD02
2001 10 12.81			C 10.9	TJ	18.0	L	6	a 60	2.6		6.2m	278	KAD02
2001 10 14.16			C 11.1	HS	5.7	R	4	a060	0.8	1	1.3m	295	MOR09
2001 10 19.78			C 10.8	TJ	18.0	L	6	a 60	2.3		4.3m	281	KAD02
2001 10 26.77			C 11.2	TJ	18.0	L	6	a 90	1.9		3.0m	286	KAD02

Comet 24P/Schaumasse

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 13.45			x C 15.9:	TT	35.0	C	14	a180	0.3	3			TSU02

Comet 29P/Schwassmann-Wachmann

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 24.58			x C 12.1:	TT	35.0	C	14	a720	0.7	2			TSU02
2001 08 13.51			x C 12.0	TT	35.0	C	14	a720	0.7	5			TSU02
2001 08 18.54			x C 12.2	TT	35.0	C	14	a600	1.0	3			TSU02

Comet 30P/Reinmuth

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 09 22.70			! k 20.3	LA	103.0	C	4	a240		9			ORI
2001 10 13.68			! k 19.9	LA	103.0	C	4	a240		9			ORI

Comet 44P/Reinmuth

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 24.82			xa C 16.8:	TT	35.0	C	14	a240	0.3	4			TSU02
2001 08 28.79			C 16.6	GA	60.0	Y	6	a120	0.5		0.8m	261	NAK01
2001 09 18.77			xa C 16.0	HJ	35.0	C	10	a960	0.3	3			TSU02
2001 09 23.79			C 16.6	TJ	18.0	L	6	a240	0.3				KAD02

Comet 44P/Reinmuth [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 09 24.07			C 16.9	UD	25.4	T	5	a180		7			NAV01
2001 10 14.84	xa		C 17.2	HJ	35.0	C	9	a600	0.3	4			TSU02

Comet 51P/Harrington (component A)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 12.74			C 15.1	TJ	18.0	L	6	a120	0.4		1.8m	250	KAD02
2001 07 21.76			C 15.5	TJ	18.0	L	6	a120	0.35		0.8m	247	KAD02
2001 08 22.77			C 16.2	TJ	18.0	L	6	a120	0.3		1.1m	255	KAD02
2001 08 27.80			C 16.1	GA	60.0	Y	6	a120	0.45		4.1m	259	NAK01
2001 09 23.74			C 14.6	HJ	35.0	C	10	a120	0.3	4	0.7m	270	TSU02
2001 09 23.76			C 14.3	TJ	18.0	L	6	a240	0.6		0.5m	276	KAD02
2001 09 24.74			C 14.2	TJ	18.0	L	6	a240	0.7		0.5m	277	KAD02
2001 09 28.82			C 14.2	TJ	18.0	L	6	a 90	0.6		0.6m	270	KAD02
2001 10 02.73			C 14.3	TJ	18.0	L	6	a120	0.55		0.7m	270	KAD02
2001 10 12.78			C 14.7	TJ	18.0	L	6	a180	0.5		1.0m	273	KAD02
2001 10 19.77			C 15.2	TJ	18.0	L	6	a180	0.4		0.9m	274	KAD02
2001 10 26.74			C 15.8:	TJ	18.0	L	6	a180	0.35				KAD02

Comet 71P/Clark

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 28.75			C 18.9	GA	60.0	Y	6	a240	0.3		0.8m	243	NAK01
2001 10 14.65			C 18.5	GA	60.0	Y	6	a240	0.3				NAK01

Comet 73P/Schwassmann-Wachmann (component C)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 16.75			C 16.8	TJ	18.0	L	6	a180	0.25				KAD02
2001 08 28.76			C 18.0	GA	60.0	Y	6	a240	0.6		3.0m	242	NAK01

Comet 107P/Wilson-Harrington

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1997 01 12.41			C 18.6	GA	60.0	Y	6	a120		9			NAK01

Comet 116P/Wild

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 10 12.77			C 17.6:	TJ	18.0	L	6	a180	0.2				KAD02

Comet 124P/Mrkos

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 09 22.79	!	k	20.2	LA	103.0	C	4	a240		9			ORI
2001 10 13.72	!	k	19.8	LA	103.0	C	4	a240		9			ORI

Comet 151P/Helin

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 15.07			C 17.6	UD	57.0	P	5	a 90					TIC
2001 08 28.69			C 17.8	GA	60.0	Y	6	a240	0.4				NAK01
2001 09 18.62			C 17.2	GA	60.0	Y	6	a240	0.4				NAK01
2001 10 13.59			C 17.6	GA	60.0	Y	6	a240	0.35				NAK01
2001 10 13.66	!	k	17.1	LA	103.0	C	4	a240	0.3				ORI

Comet C/1997 BA6 (Spacewatch)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 12.70			C 15.6	TJ	18.0	L	6	a180	0.55				KAD02
2001 07 30.96			C 14.6	UD	57.0	P	5	a120	& 1				TIC
2001 08 13.65	x		C 16.0	HV	35.0	C	14	a840	0.3	4			TSU02
2001 08 27.59			C 15.4	GA	60.0	Y	6	a120	0.8				NAK01
2001 09 12.57	x		C 16.5	HJ	35.0	C	14	a960	0.4	4			TSU02
2001 09 16.51			C 15.3	GA	60.0	Y	6	a120	1.1				NAK01

Comet C/1997 BA6 (Spacewatch) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 09 22.51		C	16.4	TJ	18.0	L	6	a180	0.5				KAD02
2001 09 23.93		C	16.0	UO	25.4	T	5	a180		7			NAV01
2001 10 04.83		C	16.5	UO	25.4	T	5	a300		5			NAV01
2001 10 07.83		C	16.8	UO	25.4	T	5	a180		5			NAV01
2001 10 11.51	x	C	15.4	TT	35.0	C	9	a960	0.4	3			TSU02
2001 10 13.46		C	16.5	TJ	18.0	L	6	a180	0.4				KAD02

Comet C/1999 J2 (Skiff)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 14.89		d k	16.3	FD	35	L	5	a600	0.35				HOR02
2001 08 22.47	x	C	17.3	TJ	60.0	Y	6	a120	0.3			25	NAK01

Comet C/1999 K8 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 10 14.74	x	C	17.3	HV	60.0	Y	6	a120	0.45				NAK01

Comet C/1999 S2 (McNaught-Watson)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 10 14.73	x	C	18.7	HV	60.0	Y	6	a240	0.3				NAK01

Comet C/1999 T1 (McNaught-Hartley)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 02 15.09		d k	9.9	LB	35	L	5	a540	+ 1.60		>10	m 253	HOR02
2001 02 16.10		d k	10.0	LB	35	L	5	a300	+ 1.60		12	m 251	HOR02
2001 06 26.63		C	15.8	TJ	18.0	L	6	a180	0.45				KAD02
2001 07 01.54		C	15.5	TJ	18.0	L	6	a180	0.5				KAD02
2001 07 14.93		d k	14.0	FD	35	L	5	a600	2.2		6	m 240	HOR02
2001 07 28.97		d k	14.2	FD	35	L	5	a720	1.5		5.5m	228	HOR02
2001 07 31.02		d k	14.2	FD	35	L	5	a720	1.5		7	m 230	HOR02
2001 08 11.05		C	15.9	HS	14.3	D	4	a060	0.3	0			MOR09
2001 08 13.49	x	C	16.2	HJ	35.0	C	14	A560	0.3	4			TSU02
2001 08 15.86		d k	15.2	FD	35	L	5	a720	1.2				HOR02
2001 08 16.84		d k	15.1	FD	35	L	5	a720	1.1				HOR02
2001 08 22.49		C	16.1	GA	60.0	Y	6	a120	0.75				NAK01
2001 08 25.81		d k	15.4:	FD	35	L	5	a420	1.1				HOR02
2001 09 04.44	x	C	16.0	HJ	35.0	C	14	A320	0.4	4			TSU02
2001 10 11.43	x	C	15.9	HJ	35.0	C	9	a360	0.4	3			TSU02
2001 10 12.46		C	17.0	GA	60.0	Y	6	a120	0.6				NAK01

Comet C/1999 T2 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 01.53		C	14.6	TJ	18.0	L	6	a180	0.55				KAD02

Comet C/1999 U4 (Catalina-Skiff)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 22.65		C	16.1	TJ	18.0	L	6	a180	0.35				KAD02
2001 08 30.07		d k	15.6	LB	35	L	5	a810	0.6		1.1m	270	HOR02
2001 09 22.64		C	16.6	TJ	18.0	L	6	a180	0.35				KAD02
2001 09 24.77		C	16.3	TJ	18.0	L	6	a240	0.4				KAD02
2001 10 12.83		C	16.3	TJ	18.0	L	6	a180	0.4		0.6m	305	KAD02
2001 10 23.67		C	16.1	TJ	18.0	L	6	a180	0.45				KAD02

Comet C/1999 Y1 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 01.71		C	13.7	TJ	18.0	L	6	a 90	0.4				KAD02
2001 07 16.71		C	13.3	TJ	18.0	L	6	a 60	0.8				KAD02
2001 07 17.76		C	13.1	TJ	18.0	L	6	a 60	0.9				KAD02
2001 08 03.75		C	14.1:	TJ	18.0	L	6	a 60	0.5				KAD02

Comet C/1999 Y1 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 18.68	x	C	12.5	TT	35.0	C	14	a360	1.5	5	4.0m	10	TSU02
2001 08 22.67		C	12.4	TJ	18.0	L	6	a 60	1.2				KAD02
2001 08 27.71	x	C	12.4	HV	60.0	Y	6	a120	1.9				NAK01

Comet C/2000 K2 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 27.77		C	16.7	GA	60.0	Y	6	a240	0.5		1.7m	256	NAK01
2001 09 18.68		C	16.6	GA	60.0	Y	6	a120	0.5		1.7m	266	NAK01
2001 09 24.70		C	16.5	TJ	18.0	L	6	a240	0.3				KAD02
2001 10 13.59		C	16.7	TJ	18.0	L	6	a240	0.3				KAD02
2001 10 14.63		C	16.4	GA	60.0	Y	6	a120	0.45		2.0m	276	NAK01

Comet C/2000 SV74 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 06 27.72		C	15.0	TJ	18.0	L	6	a180	0.4				KAD02
2001 07 10.67		C	14.9	TJ	18.0	L	6	a120	0.5				KAD02
2001 07 21.69		C	14.8	TJ	18.0	L	6	a180	0.55				KAD02
2001 07 28.99	d	k	14.1	FD	35	L	5	a630	0.8				HOR02
2001 07 31.03	d	k	14.2	FD	35	L	5	a450	0.8				HOR02
2001 08 01.06	d	k	14.2	FD	35	L	5	a630	0.8				HOR02
2001 08 03.70		C	15.1:	TJ	18.0	L	6	a180	0.55				KAD02
2001 08 15.92	d	k	13.9	FD	35	L	5	a720	0.8				HOR02
2001 08 16.93	d	k	13.9	FD	35	L	5	a720	0.9				HOR02
2001 08 22.64		C	14.4	TJ	18.0	L	6	a180	0.8				KAD02
2001 08 25.88	d	k	13.8	FD	35	L	5	a540	0.8				HOR02
2001 08 26.07		C	14.9	HS	10.5	R	5	a060	0.3	0	1.5m	255	MOR09
2001 08 27.74		C	14.1	GA	60.0	Y	6	a120	1.3				NAK01
2001 09 04.70		C	14.2	TJ	18.0	L	6	a120	0.7				KAD02
2001 09 18.81		C	14.2	TJ	18.0	L	6	a 90	0.55				KAD02
2001 09 22.56		C	14.0	TJ	18.0	L	6	a 90	0.8				KAD02
2001 09 23.02		C	14.6	HS	20.3	L	6	a060	0.3	0			MOR09
2001 09 28.71		C	13.6	GA	60.0	Y	6	a120	1.3				NAK01
2001 10 02.72		C	14.1	TJ	18.0	L	6	a120	0.8				KAD02
2001 10 11.54	xa	C	14.4	HJ	35.0	C	9	a420	0.7	4			TSU02
2001 10 11.68		C	13.7	TJ	18.0	L	6	a120	0.85				KAD02
2001 10 13.47		C	13.7	TJ	18.0	L	6	a120	0.9				KAD02
2001 10 13.57		C	13.3	GA	60.0	Y	6	a120	1.6				NAK01
2001 10 14.14		C	12.8	HS	5.7	R	4	a060	0.7	0			MOR09
2001 10 14.86		c	15.2	HS	20	T	10	a 30		4			ROD01
2001 10 19.74		C	13.6	TJ	18.0	L	6	a 90	0.85				KAD02
2001 10 23.64		C	13.7	TJ	18.0	L	6	a 90	0.9				KAD02
2001 10 26.72		C	13.8	TJ	18.0	L	6	a120	0.8				KAD02

Comet C/2000 WM1 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 10.68		C	16.0	TJ	18.0	L	6	a180	0.3				KAD02
2001 07 29.01	d	k	15.1	FD	35	L	5	a810	0.5		0.4m	294	HOR02
2001 07 31.05	d	k	14.8	FD	35	L	5	a720	0.5		0.6m	296	HOR02
2001 08 01.08	d	k	14.6	FD	35	L	5	a720	0.55		0.6m	296	HOR02
2001 08 13.12	!	C	16.1	GA	40	L	5	a240	> 0.5	s7	> 1.1m	290	ROD03
2001 08 14.03		C	15.1	HS	10.5	R	5	a060	0.4	0			MOR09
2001 08 15.99	d	k	14.5	FD	35	L	5	a720	0.6		1.0m	289	HOR02
2001 08 16.97	d	k	14.5	FD	35	L	5	a600	0.55		1.1m	289	HOR02
2001 08 22.11	!	C	16.2	GA	30	T	9	a240	> 0.4	s7	> 1.0m	290	ROD03
2001 08 22.75		C	14.8	TJ	18.0	L	6	a120	0.45		1.2m	290	KAD02
2001 08 23.09		C	13.5	HS	20.3	L	6	a060	0.4	2	0.7m	263	MOR09
2001 08 24.74	x	C	15.4	HV	35.0	C	14	a600	0.3	4	1.5m	280	TSU02
2001 08 25.11	!	C	15.9	GA	30	T	9	a240	> 0.5	s6	> 1.5m	294	ROD03
2001 08 25.96	d	k	14.2	FD	35	L	5	a630	0.6		1.2m	272	HOR02
2001 08 25.98		C	13.9	HS	10.5	R	5	a060	0.3	0			MOR09
2001 08 27.79		C	14.4	GA	60.0	Y	6	a120	0.75		1.9m	288	NAK01
2001 09 04.79		C	14.4	TJ	18.0	L	6	a120	0.6		1.3m	280	KAD02

Comet C/2000 WM1 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 09 17.65	x	C	14.5	HJ	35.0	C	14	a480	0.5	4	2.0m	275	TSU02
2001 09 18.72		C	13.5	TJ	18.0	L	6	a120	0.55		0.7m	274	KAD02
2001 09 19.06	!	C	15.5	GA	40	L	4	a240	> 0.8	D5	> 2.1m	278	ROD03
2001 09 22.63		C	12.6	TJ	18.0	L	6	a180	1.1		1.9m	275	KAD02
2001 09 25.05	!	C	15.0	GA	40	L	4	a240	> 0.9	D6	> 2.0m	276	ROD03
2001 09 28.70		C	12.5	TJ	18.0	L	6	a 90	0.9		2.6m	273	KAD02
2001 10 02.68		C	12.3	TJ	18.0	L	6	a 60	1.0		2.3m	273	KAD02
2001 10 03.89		C	11.3	HS	20	T	6	300	1.5				GIA01
2001 10 11.61		C	12.0	TJ	18.0	L	6	a 90	0.95		2.4m	270	KAD02
2001 10 12.70		C	11.6	TJ	18.0	L	6	a 90	1.3		2.6m	268	KAD02
2001 10 13.61	x	C	10.7	HJ	35.0	C	9	a120	0.8	5	5.0m	275	TSU02
2001 10 13.62		C	11.4	TJ	18.0	L	6	a120	1.6		2.7m	266	KAD02
2001 10 14.07		C	11.4	HS	5.7	R	4	a060	0.5	2	3.4m	249	MOR09
2001 10 19.75		C	10.9	TJ	18.0	L	6	a 60	1.9		3.0m	263	KAD02
2001 10 23.63		C	10.9	TJ	18.0	L	6	a 60	2.3		3.6m	262	KAD02
2001 10 24.69		C	10.4	GA	60.0	Y	6	a120	4.5		> 9.3m	261	NAK01
2001 10 26.76		C	10.5	TJ	18.0	L	6	a 60	2.8		4.0m	260	KAD02

Comet C/2001 A2 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 30.71	s	H	9.5	LA	50.0	C	12	a360	6	4	> 6.7m	205	FUK02
2001 07 31.68	s	H	9.0	LA	50.0	C	12	a180	4.9	4	> 6.7m	205	FUK02
2001 07 31.78	s	V	10.3	LA	50.0	C	12	a180	4.9	4	> 6.7m	205	FUK02
2001 08 03.63		C	10.5	TJ	18.0	L	6	a 60	2.6		1.9m	195	KAD02
2001 08 04.89		C	10.1	HS	10.5	R	5	a060	1.2	1	2.2m	173	MOR09
2001 08 08.92		C	11.0	HS	10.5	R	5	a060	1.0	1	7.3m	186	MOR09
2001 08 10.89		C	10.8	HS	10.5	R	5	a060	1.2	2	5.2m	188	MOR09
2001 08 11.92		C	10.6	HS	10.5	R	5	a060	1	1	7.2m	180	MOR09
2001 08 12.92		C	11.2	HS	10.5	R	5	a060	0.8	1	6.7m	156	MOR09
2001 08 13.96		C	11.8	HS	10.5	R	5	a060	0.7	1	3.9m	176	MOR09
2001 08 14.56		C	11.5	TJ	18.0	L	6	a 60	2.2		1.0m	183	KAD02
2001 08 18.00		C	12.0	HS	10.5	R	5	a060	0.7	1	4.5m	180	MOR09
2001 08 18.14	J	9.7	SC	25.4	T	5	a100	5.26	s5	?			ROQ
2001 08 20.84	H	12.2	HI	31	T	3	a300	+ 0.7					SOS
2001 08 20.84	H	13.2	HI	31	T	3	a300	+ 0.2					SOS
2001 08 20.87	J	12.8	HI	31	T	3	a300	+ 0.7					SOS
2001 08 20.87	J	14.1	HI	31	T	3	a300	+ 0.2					SOS
2001 08 20.87	k	12.6	HI	31	T	3	a300	+ 0.7					SOS
2001 08 20.87	k	13.6	HI	31	T	3	a300	+ 0.2					SOS
2001 08 20.89	L	13.5	HI	31	T	3	a300	+ 0.7					SOS
2001 08 22.56	C	12.0	TJ	18.0	L	6	a120	1.9			0.7m	150	KAD02
2001 08 23.98	C	13.0	HS	10.5	R	5	a060	0.4	0				MOR09
2001 08 24.97	C	12.8	HS	10.5	R	5	a060	0.6	0				MOR09
2001 08 25.14	J	10.7	SC	25.4	T	5	a100	5.70	s5	?			ROQ
2001 08 25.95	C	12.6	HS	10.5	R	5	a060	0.8	2		0.7m	169	MOR09
2001 08 27.58	C	11.5	GA	60.0	Y	6	a 60	2.7					NAK01
2001 09 05.88	H	13.1	HI	31	T	3	a300	+ 0.5					SOS
2001 09 05.88	H	13.9	HI	31	T	3	a300	+ 0.2					SOS
2001 09 05.89	J	13.8	HI	31	T	3	a300	+ 0.5					SOS
2001 09 05.89	J	14.9	HI	31	T	3	a300	+ 0.2					SOS
2001 09 05.89	k	13.5	HI	31	T	3	a300	+ 0.5					SOS
2001 09 05.89	k	14.4	HI	31	T	3	a300	+ 0.2					SOS
2001 09 09.86	H	13.9	HI	31	T	3	a300	+ 0.5					SOS
2001 09 09.86	H	14.3	HI	31	T	3	a300	+ 0.2					SOS
2001 09 09.86	k	14.3	HI	31	T	3	a300	+ 0.5					SOS
2001 09 09.86	k	14.8	HI	31	T	3	a300	+ 0.2					SOS
2001 09 09.87	J	14.5	HI	31	T	3	a300	+ 0.5					SOS
2001 09 09.87	J	15.1	HI	31	T	3	a300	+ 0.2					SOS
2001 09 12.51	x	C	14.8:	HJ	35.0	C		a720	0.6	4			TSU02
2001 09 16.47	C	12.6	GA	60.0	Y	6	a120	2.2					NAK01
2001 09 18.96	!	C	16.4	GA	40	L	4	a240	> 0.3	d5	> 0.6m	117	ROD03
2001 09 22.48		C	14.7	TJ	18.0	L	6	a180	0.7				KAD02
2001 09 22.94		C	16.2	HS	20.3	L	6	a060	0.3	0			MOR09
2001 09 23.85	c	15.4	UO	25.4	T	5	a 60			5			NAV01

Comet C/2001 A2 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 09 26.81		C	16.4	UO	25.4	T	5	a 60		7			NAV01
2001 09 29.83		C	15.6	UO	25.4	T	5	a 60		5			NAV01
2001 10 04.80		C	16.2	UO	25.4	T	5	a 60		5			NAV01
2001 10 05.81		C	15.6	UO	25.4	T	5	a180		5			NAV01
2001 10 05.91		C	16.3	UO	25.4	T	5	a180		5			NAV01
2001 10 05.91		C	16.3	UO	25.4	T	5	a180		5			NAV01
2001 10 07.81		C	16.1	UO	25.4	T	5	a180		5			NAV01
2001 10 08.83		C	16.1	UO	25.4	T	5	a180		5			NAV01
2001 10 11.48	x	C	16.6	HJ	35.0	C	9	a840	0.4	3			TSU02
2001 10 11.85		C	16.3	UO	25.4	T	5	a180		5			NAV01
2001 10 12.49		C	14.1:	GA	60.0	Y	6	a120	1.3				NAK01
2001 10 12.87		C	16.4	UO	25.4	T	5	a180		5			NAV01
2001 10 13.42		C	15.9	TJ	18.0	L	6	a180	0.4				KAD02
2001 10 15.85		C	16.5	UO	31.0	T	5	a120		5			MAN05
2001 10 18.77		C	16.6	UO	25.4	T	5	a180	0.2	5			NAV01
2001 10 21.84		C	16.6	UO	25.4	T	5	a180	0.2	5			NAV01
2001 10 23.47		C	15.8	GA	60.0	Y	6	a120	0.8				NAK01

Comet C/2001 B1 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 28.78		C	18.3	GA	60.0	Y	6	a240	0.35				NAK01
2001 10 14.67		C	17.8	GA	60.0	Y	6	a240	0.4				NAK01

Comet C/2001 K3 (Skiff)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 16.70		C	15.8	TJ	18.0	L	6	a180	0.55				KAD02
2001 07 24.65	x	C	15.7	TT	35.0	C	14	a720	0.3	4			TSU02
2001 08 13.56	x	C	15.7	HJ	35.0	C	14	a720	0.3	4			TSU02
2001 08 14.59		C	16.0	TJ	18.0	L	6	a180	0.35				KAD02
2001 08 27.61		C	16.1	GA	60.0	Y	6	a120	0.35				NAK01
2001 09 16.48		C	16.2:	GA	60.0	Y	6	a120	0.4				NAK01
2001 10 12.45		C	16.7:	GA	60.0	Y	6	a120	0.35				NAK01

Comet C/2001 K5 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 22.46	x	C	16.3	TJ	60.0	Y	6	a120	0.25	8		190	NAK01
2001 09 16.43	x	C	16.3	TJ	60.0	Y	6	a120	0.35				NAK01

Comet C/2001 M10 (NEAT)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 09 16.49		C	17.6:	GA	60.0	Y	6	a240	0.4				NAK01

Comet P/2001 MD7 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 15.05	d	k	15.4	FD	35	L	5	a660	0.25				HOR02
2001 08 18.56	x	C	15.3	TT	35.0	C	14	a720	0.3	4			TSU02
2001 08 22.53		C	15.6	TJ	18.0	L	6	a180	0.25				KAD02
2001 09 16.44	a	C	14.6:	GA	60.0	Y	6	a120	0.6				NAK01
2001 09 22.44		C	14.6	TJ	18.0	L	6	a120	0.4				KAD02
2001 10 12.44	a	C	13.5:	GA	60.0	Y	6	a120	1.0		1.5m	73	NAK01
2001 10 13.40		C	13.9	TJ	18.0	L	6	a120	0.6				KAD02

Comet C/2001 N2 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 22.62		C	16.9	TJ	18.0	L	6	a180	0.2				KAD02
2001 08 27.70		C	16.8	GA	60.0	Y	6	a120	0.3			90	NAK01
2001 09 16.59		C	16.7	GA	60.0	Y	6	a120	0.35				NAK01
2001 09 22.50		C	16.6	TJ	18.0	L	6	a180	0.25				KAD02
2001 09 23.89		C	16.3	UO	25.4	T	5	a180		7			NAV01

Comet C/2001 N2 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 10 07.88		C	16.6	UO	25.4	T	5	a180		5			NAV01
2001 10 12.48		C	16.5	GA	60.0	Y	6	a120	0.3				NAK01
2001 10 13.44		C	16.6	TJ	18.0	L	6	a180	0.25				KAD02
2001 10 18.80		C	16.6	UO	25.4	T	5	a180	0.1	5			NAV01
2001 10 21.82		C	16.5	UO	25.4	T	5	a180	0.1	5			NAV01
2001 10 23.47		C	16.5	GA	60.0	Y	6	a120	0.4				NAK01

Comet C/2001 O2 (NEAT)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 27.68		x C	18.0	HV	60.0	Y	6	a240	0.3			90	NAK01
2001 09 16.57		a C	18.2	GA	60.0	Y	6	a240	0.3				NAK01

Comet C/2001 Q1 (NEAT)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 19.90		C	17.8	UO	57.0	P	5	a120					TIC
2001 08 26.86		C	18.0	UO	57.0	P	5	a 90					TIC
2001 09 16.53		C	18.4	GA	60.0	Y	6	a240	0.25				NAK01
2001 10 12.51		a C	18.3	GA	60.0	Y	6	a240	0.3				NAK01

Comet P/2001 Q2 (Petriew)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 20.72		C	12.4	TJ	18.0	L	6	a 60	1.2		1.0m	275	KAD02
2001 08 22.79		C	11.8	TJ	18.0	L	6	a 40	1.4		1.5m	272	KAD02
2001 08 23.11		p	10.3	HS	3.9	A	3		2	3/			HOE
2001 08 24.11		& C	11.7	HS	10.5	R	5	a060	0.5	2	0.8m	273	MOR09
2001 08 24.77		x C	12.1	TT	35.0	C	14	a480	1.5	4	1.5m	275	TSU02
2001 08 26.10		d k	11.9	LB	35	L	5	a360	3.0		5.7m	278	HOR02
2001 08 26.13		& C	11.8	HS	10.5	R	5	a060	0.8	1	1.3m	269	MOR09
2001 08 27.82		C	10.6	GA	60.0	Y	6	a 60	3.9		> 5.9m	277	NAK01
2001 08 30.10		d k	11.6	LB	35	L	5	a600	2.5		5.4m	274	HOR02
2001 09 04.80		C	11.8	TJ	18.0	L	6	a 40	1.5		1.2m	279	KAD02
2001 09 18.82		x C	12.5	HJ	35.0	C	10	a480	0.7	4	8.0m	277	TSU02
2001 09 22.80		! k	11.5	LA	103.0	C	4	a 30	5		> 5.3m	280	ORI
2001 09 23.80		C	12.0	TJ	18.0	L	6	a 60	1.4		4.2m	278	KAD02
2001 09 24.15		c	13.4	UO	25.4	T	5	a 10		5			NAV01
2001 09 28.81		C	12.5	TJ	18.0	L	6	a 90	1.5		2.4m	281	KAD02
2001 10 02.77		C	13.1	TJ	18.0	L	6	a 90	1.0		3.3m	281	KAD02
2001 10 12.82		C	13.6	TJ	18.0	L	6	a120	0.9		4.0m	283	KAD02
2001 10 14.18		C	12.5	HS	5.7	R	4	a060	0.5	1			MOR09
2001 10 19.81		C	13.9	TJ	18.0	L	6	a120	0.7		6.5m	284	KAD02
2001 10 26.83		C	14.2	TJ	18.0	L	6	a120	0.6		2.5m	287	KAD02

Comet C/2001 Q4 (NEAT)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 27.08		& C	17.8	UO	57.0	P	5	a 90					TIC
2001 09 18.74		a C	18.6	GA	60.0	Y	6	a240	0.25				NAK01
2001 09 21.08		! C	20.0:	GA	40	L	4	a240		d3			ROD03
2001 09 22.75		! k	18.0	LA	103.0	C	4	a240	0.2				ORI
2001 09 23.69		x C	17.7	HJ	35.0	C	10	A080	0.3	3			TSU02
2001 10 12.68		a C	18.2	GA	60.0	Y	6	a240	0.3				NAK01
2001 10 24.62		a C	18.4	GA	60.0	Y	6	a240	0.3				NAK01

Comet P/2001 Q5 (LINEAR-NEAT)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 31.70		C	16.7	GA	60.0	Y	6	a120	0.5		1.9m	248	NAK01
2001 09 04.73		C	16.9	TJ	18.0	L	6	a180	0.3				KAD02
2001 09 18.69		C	16.8	GA	60.0	Y	6	a240	0.5		1.9m	242	NAK01
2001 09 18.70		C	17.0	TJ	18.0	L	6	a180	0.25				KAD02
2001 09 22.56		C	16.7	TJ	18.0	L	6	a180	0.3				KAD02
2001 09 22.76		! k	16.3	LA	103.0	C	4	a240	0.45		3.7m	238	ORI

Comet P/2001 Q5 (LINEAR-NEAT) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 09 23.98		C	16.7	UO	25.4	T	5	a180		7			NAV01
2001 09 28.72		C	16.8	GA	60.0	Y	6	a240	0.6		2.2m	237	NAK01
2001 10 12.74		C	16.8	TJ	18.0	L	6	a180	0.35				KAD02
2001 10 13.52	x	C	16.1	HJ	35.0	C	9	a120	0.3	3			TSU02
2001 10 13.66		C	16.6	GA	60.0	Y	6	a240	0.55		2.7m	233	NAK01
2001 10 18.90		C	16.7	UO	25.4	T	5	a180	0.1	3			NAV01
2001 10 21.88		C	16.7	UO	25.4	T	5	a180	0.3	5			NAV01

Comet P/2001 Q6 (NEAT)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 09 18.71		C	15.8	TJ	18.0	L	6	a 90	0.3				KAD02
2001 09 18.72		C	15.3	GA	60.0	Y	6	a120	1.2				NAK01
2001 09 22.66		C	15.6	TJ	18.0	L	6	a 90	0.6				KAD02
2001 09 23.74		C	15.6	TJ	18.0	L	6	a 90	0.55				KAD02
2001 09 24.00		C	16.0	UO	25.4	T	5	a 60		6			NAV01
2001 09 24.71		C	15.4	TJ	18.0	L	6	a 90	0.65				KAD02
2001 09 28.68		C	14.6	TJ	18.0	L	6	a 90	0.75				KAD02
2001 09 28.75		C	13.6	GA	60.0	Y	6	a120	1.9				NAK01
2001 10 12.70		C	12.9	GA	60.0	Y	6	a120	2.0			225	NAK01
2001 10 12.75		C	14.2	TJ	18.0	L	6	a 60	1.0		0.7m	216	KAD02
2001 10 13.50		C	14.0	TJ	18.0	L	6	a 90	0.8		0.6m	210	KAD02
2001 10 13.55	x	C	14.4	HJ	35.0	C	9	a060	0.5	5	1.0m	210	TSU02
2001 10 14.89		c	15.6	HS	20	T	10	a 60		5			ROD01
2001 10 19.75		C	13.4	TJ	18.0	L	6	a 90	1.2				KAD02
2001 10 23.65		C	13.1	TJ	18.0	L	6	a 90	1.4		1.0m	179	KAD02
2001 10 26.71		C	13.3	TJ	18.0	L	6	a120	1.3				KAD02

Comet P/2001 R1 (LONEOS)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 09 16.54		a C	18.2	GA	60.0	Y	6	a240	0.25			50	NAK01

Comet P/2001 R6 (LINEAR-Skiff)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 10 13.62		a C	17.4	GA	60.0	Y	6	a240	0.35				NAK01
2001 10 24.57		C	17.3	GA	60.0	Y	6	a240	0.35				NAK01

Comet C/2001 S1 (Skiff)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 10 12.66		x C	19.0	TJ	60.0	Y	6	a240	0.2				NAK01
2001 10 24.61		x C	19.3	HV	60.0	Y	6	a240	0.2				NAK01

Comet P/2001 T3 (NEAT)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 10 18.58		a C	17.6	GA	60.0	Y	6	a240	0.45				NAK01
2001 10 24.66		C	17.5	GA	60.0	Y	6	a240	0.3				NAK01

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Visual Data

Comet 2P/Encke

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2000 07 31.10		x M	12.0	HS	33	L	4	115		2			REN
2000 08 01.10		x M	12.0	HS	33	L	4	115	& 1.5	2/			REN
2000 08 08.36		S	11.0	AC	44.5	L	4	167	1.1	1			MOR03

Comet 2P/Encke [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2000 08 11.13	x	M	10.6:	HS	40	L	4	94	1	3			REN
2000 08 13.36	s	S	10.6	AC	44.5	L	4	167	1.2	2			MOR03
2000 08 20.37	s	S	10.3	AC	44.5	L	4	80	1.3	2			MOR03
2000 08 25.17			[6 :		12	L	6	38					REN
2000 08 25.38	s	S	8.8	AC	15	R	5	42	2				MOR03

Comet 16P/Brooks

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 09 22.05		S	[14.5	HS	44.5	T	4	224	! 0.5				SAR02

Comet 19P/Borrelly

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 31.78	xs	S	11.0	HS	25.4	L	4	113	1.2	3	2	m 230	YOS02
2001 08 11.11		S	11.3	TK	25.6	L	5	84	1.2	4			BIV
2001 08 12.12		S	11.1	TK	25.6	L	5	84	1.5	4			BIV
2001 08 14.79		S	10.4	AA	10.0	B		25					SEA
2001 08 15.78	x	S	11.0:	HS	32.0	L	5	58	2	3			NAG08
2001 08 16.09		M	9.1	TT	10	B	4	25	3	3			LEH
2001 08 17.07		M	8.8	TT	10	B	4	25	4	3			LEH
2001 08 17.11		S	10.5	TT	20	T	10	75	2.0	3			SHA02
2001 08 17.77	x	S	10.5	TJ	32.0	L	5	58	1.5	5			NAG08
2001 08 18.12		S	10.7	TK	25.6	L	5	84	1.3	6			BIV
2001 08 18.13		S	10.7	TK	25.6	L	5	42	1.2	6			BIV
2001 08 21.79	xs	S	10.6	TT	25.4	L	4	46	1.6	4			YOS02
2001 08 22.74	xs	S	9.9	TJ	32.0	L	5	58	1.9	5			NAG08
2001 08 23.77	x	M	10.4	TT	25.0	L	6	47	3.0	3			TSU02
2001 08 23.82		B	10.8	TJ	20	L	7	45	1.5	6			MAT08
2001 08 24.11		M	8.3	TT	10	B	4	25	4	3			LEH
2001 08 25.07		M	8.3	TT	10	B	4	25	4.5	3			LEH
2001 08 25.07		S	10.1	TT	10.0	B		25	1.5	4			HAS02
2001 08 26.02		M	10.7	GA	25	L	4	54	1.8	4			SHU
2001 08 26.08		M	9.1	TT	8.0	B		10	5	3			HOR02
2001 08 26.10		M	8.6	TT	10	B	4	25	3.5	3			LEH
2001 08 26.13		S	10.4	TK	20.3	L	6	95	1.5	5			BIV
2001 08 26.99	a	M	10.8	PA	30	L	5	60	1.5	3			NEV
2001 08 27.07		S	10.6	HS	34.0	L	6	83	2	3			TOT03
2001 08 27.08		M	8.6	TT	10	B	4	25	3	3			LEH
2001 08 27.08		M	9.1	TT	35	L	5	68	4.2	1/			HOR02
2001 08 28.06		M	9.4	TT	8.0	B		10	5	3			HOR02
2001 08 28.08		S	9.5	TJ	41	L	5	121	2.5	3/			RES
2001 08 28.11		S	10.3	TJ	20	T	10	75	1.7	4			SHA02
2001 08 28.13		S	10.9	TK	20.3	L	6	48	1.3	6			BIV
2001 08 28.78	x	S	10.5	TT	25.4	L	4	46	2.4	5			YOS02
2001 08 28.79	x	S	10.3	TJ	15.0	B		25	2.0	2/			HAS08
2001 08 29.10		S	10.3	TJ	25.4	L	5	65	2.2	4			MEY
2001 08 29.11		S	10.1	TJ	31.0	J	6	72	2.0	4/			DIJ
2001 08 29.11		S	10.3	TJ	31.0	J	6	72	2.7	4			BOU
2001 08 29.12		S	10.5	TK	20.3	L	6	48	1.5	6			BIV
2001 08 29.14		S	10.2	TJ	20	T	10	75	1.4	5			SHA02
2001 08 30.04		M	8.8	TT	10	B	4	25	3.7	3			LEH
2001 08 30.07		M	9.6	TT	13	L	8	69	3.5	2/			HOR02
2001 08 30.08		S	9.8	AC	6.3	R	13	52	5	1			KOS
2001 08 30.10		S	9.8	AC	41	L	5	121	3	3			RES
2001 08 31.07		S	9.6	AC	41	L	5	121	3	3			RES
2001 08 31.08		M	8.8	TT	10	B	4	25	4	3			LEH
2001 09 01.11		S	10.0	TJ	25.4	J	6	58	3.0	4			BOU
2001 09 01.14		S	10.8	TK	25.6	L	5	42	1.5	5	0.03	275	BIV
2001 09 12.76		S	9.2:	TJ	25.4	T	6	116	2.3	3			YOS04
2001 09 14.06		S	9.6	HS	36	L	6	70	2.6	3			BAR06
2001 09 15.03		S	9.6	HS	11	L	7	50	2.5	3			BAR06
2001 09 15.10		S	10.5	TK	25.6	L	5	42	2.0	6			BIV
2001 09 16.04		S	9.9	HS	36	L	6	70	2.5	4			BAR06
2001 09 16.16		S	10.5	TK	25.6	L	5	42	1.5	6			BIV

Comet 19P/Borrelly [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 09 16.79	x	S	10.2	TJ	15.0	B		25	2.0	2			HAS08
2001 09 17.78	x	S	9.9	TT	10.0	B		20	3	4			YOS02
2001 09 17.79	x	S	9.8	TJ	32.0	L	5	58	1.4	5			NAG08
2001 09 19.11		S	9.3	TT	8.0	B		10	6	3			HOR02
2001 09 19.14		S	9.9	TT	10.0	B		25	4.2	4			HAS02
2001 09 20.05		M	10.5	PA	30	L	5	60	2	4			NEV
2001 09 20.07		M	8.8	TT	10	B	4	25	4.5	3			LEH
2001 09 22.06		S	9.5	HS	36	L	6	70	2.5	3			BAR06
2001 09 22.06		S	10.1	HS	44.5	T	4	81	1.8	s4			SAR02
2001 09 22.17		S	10.7	TK	20.3	L	6	48	1.5	5			BIV
2001 09 22.73		S	10.0	TJ	25.4	T	6	62	3.2	3/			YOS04
2001 09 22.74		M	10.0	HV	25.0	L	6	47					TSU02
2001 09 22.74	x	S	10.6	HS	31.7	L	6	63	1.6	5/			MIY01
2001 09 22.79	x	S	10.0	TJ	32.0	L	5	58	1.9	5/			NAG08
2001 09 22.80	x	S	10.4	TJ	15.0	B		25	2.1	3			HAS08
2001 09 23.16		S	10.5	TK	20.3	L	6	48	1.5	6			BIV
2001 09 24.76	x	S	10.3	TJ	31.7	L	6	63	1.5	5			MIY01
2001 09 27.06		M	10.6	PA	30	L	5	60	2	4			NEV
2001 09 27.09		M	10.0	GA	25	L	4	53	1.7	4			SHU
2001 09 27.79		S	10.3	TJ	20	L	7	45	2.0	5			MAT08
2001 09 28.14		S	9.9	TT	10.0	B		25	3.9	4			HAS02
2001 09 28.75		S	9.7	TJ	25.4	T	6	62	2.8	5			YOS04
2001 09 29.05		M	10.7	PA	30	L	5	60	2	4			NEV
2001 09 29.14		S	9.9	TJ	25.4	J	6	58	2.5	4/			BOU
2001 09 30.15		S	10.7	TK	25.6	L	5	42	2.0	6			BIV
2001 10 11.08		S	10.1	TJ	20.3	T	10	100	2.1	3/			GRA04
2001 10 12.17		S	10.4	TK	20.3	L	6	48	1.5	5			BIV
2001 10 13.76	x	S	10.6	TT	25.4	L	4	46	2.3	4			YOS02
2001 10 13.79	x	S	10.5	HS	31.7	L	6	63	1.2	4			MIY01
2001 10 14.77	x	S	10.5	TT	25.4	L	4	46	2.3	4			YOS02
2001 10 16.15		S	10.7	TK	20.3	L	6	48	1.5	5			BIV
2001 10 16.20		S	10.9	TK	20.3	L	6	48	1.6	5			BIV
2001 10 17.05		M	10.6	AS	30	L	5	60	2.5	4			NEV
2001 10 18.68	xw	S	10.3	TJ	32.0	L	5	58	2.5	4/			NAG08
2001 10 19.74		S	10.7	TJ	25.4	T	6	62	2.7	5			YOS04
2001 10 19.76		M	9.9	TT	25.0	L	6	47	1.5	4			TSU02
2001 10 20.02		S	9.8	AC	41	L	5	121	& 2.5	3			RES
2001 10 22.07		M	10.8	PA	30	L	5	60	1.7	4			NEV
2001 10 23.06		S	10.6	TJ	20.3	T	10	100	1.9	3			GRA04
2001 10 23.15		S	10.5	TI	44.5	T	4	82	2.8	s5/	7	m 300	SAR02
2001 10 24.10		M	10.6	GA	25	L	4	53	2.5	3/			SHU
2001 10 24.15		S	11.2	TK	20.3	L	6	48	1.2	4			BIV
2001 10 24.72	xa	S	10.3	TJ	32.0	L	5	58	2.8	5			NAG08
2001 10 24.96		M	10.7	PA	30	L	5	60	2	3			NEV
2001 10 25.09		M	11.0:	GA	25	L	4	53	1	3			SHU
2001 10 25.81	x	B	10.7	TJ	25.0	L	6	69	1.0	4			WAT01
2001 10 26.16		S	11.0	TK	20.3	L	6	48	1.4	4			BIV
2001 10 26.81	x	B	11.5	HS	25.0	L	6	69	3.0	2			WAT01
2001 10 28.07		S	10.9:	HS	36	L	6	70	1.8	3			BAR06
2001 10 28.16		S	10.7	TK	25.6	L	5	42	1.8	5			BIV
2001 10 29.84	x	S	11.5	HS	25.4	L	4	46	1.7	5	3	m 280	YOS02

Comet 24P/Schaumasse

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 02 27.81		S	[12.0	HS	27.0	L	6	83					TOT03
2001 03 23.04		S	12.8	AC	44.5	L	4	167	0.8	1			MOR03
2001 04 11.06		S	12.2	AC	44.5	L	4	167	1.0	2			MOR03
2001 04 14.11		S	12.2	AC	44.5	L	4	167	1.2	2			MOR03
2001 04 25.07		S	12.2	AC	44.5	L	4	167	0.8	2			MOR03
2001 05 10.85		S	10.8	HS	27.0	L	6	120	1.7	1			TOT03
2001 05 13.09		S	12.3	AC	44.5	L	4	167	0.8	2			MOR03
2001 05 16.11		S	12.4	AC	44.5	L	4	167	0.7	1			MOR03
2001 05 24.86		S	10.8	HS	27.0	L	6	120	2.5	1			TOT03

Comet 29P/Schwassmann-Wachmann

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 17.92		S	11.2	NP	44.5	L	5	167	1.5	1/			MAR02
2001 08 17.92		S	11.7	NP	44.5	L	5	167	1.5	3			SAR04
2001 08 18.91		S	11.0	NP	10	R	5	77	3	1			MAR02
2001 08 19.89		S	11.0	NP	10	R	5	77	2	1/			MAR02
2001 08 20.88		S	11.2	NP	10	R	5	98	1.5	1			MAR02
2001 08 21.88		S	11.4	NP	10	R	5	77	1	1			MAR02
2001 08 23.60		S	12.5:	HS	20	L	7	45	1.5	3			MAT08
2001 08 25.94		S	11.6	TT	25.4	T	10	102	2	2			DES01
2001 09 09.54		[13.0		HS	20	L	7	45					MAT08
2001 09 15.88		S[14.2		NP	44.5	L	5	167	! 1				MAR02
2001 10 08.53		[13.6		HS	28	L	10	88					MAT08
2001 10 14.46		[13.5		HS	28	L	10	88					MAT08

Comet 41P/Tuttle-Giacobini-Kresák

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2000 12 08.23	x	S	12.0:	HS	12	L	6	70	& 1	4			REN
2000 12 09.22	x	M	12.2	HS	40	L	4	94	2	3/			REN
2000 12 09.45		S	11.8	AC	44.5	L	4	80	1.6	2			MOR03
2000 12 22.22	x	M	10 :	TT	40	L	4	94	2	6	0.17	290	REN
2000 12 23.22	x	M	10.1	TT	12	L	6	38	2	5	0.07	290	REN
2000 12 23.47		S	9.1	AC	15	R	5	42	3.5	2			MOR03
2000 12 25.47		S	9.3	AC	15	R	5	42	4	2			MOR03
2000 12 29.46		S	9.4	AC	15	R	5	42	3	2			MOR03
2001 01 03.24	x	M	10.2	TT	12	L	6	70	1.5	2/			REN

Comet 45P/Honda-Mrkos-Pajdušáková

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 04 14.06	w	S	9.4	AC	44.5	L	4	80	1.6	4			MOR03
2001 04 20.07		S	9.3	AC	15	R	5	42	2	4			MOR03
2001 04 25.07		S	10.3	AC	44.5	L	4	80	1.8	2			MOR03
2001 04 26.80		S	11.3	HS	24.5	L	4	38	4	2			CSU01
2001 04 28.81		S	10.2	HS	27.0	L	6	167	1.0				TOT03
2001 04 29.82		S	10.0	HS	27.0	L	6	167	1.3	2/			TOT03
2001 05 10.83		S[12		HS	27.0	L	6	167	! 1.0				TOT03
2001 05 24.85		S[11.7		HS	27.0	L	6	167	! 1.0				TOT03

Comet 47P/Ashbrook-Jackson

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 09 22.05		S[14.0		HS	44.5	T	4	146	! 1.0				SAR02

Comet 51P/Harrington

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 10 22.13		S[14.0		HS	44.5	T	4	224	! 0.5				SAR02
2001 10 23.12		S[13.5		HS	44.5	T	4	224	! 1.0				SAR02

Comet 74P/Smirnova-Chernykh

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 03 27.91	x	S	15 :	HS	40	L	4	250	0.2	7			REN
2001 04 13.90	x	S	15.2	HS	40	L	4	250	0.2	6			REN
2001 04 19.97	x	S	15.3	HS	40	L	4	250		6			REN
2001 04 25.94	x	S	15.2	HS	40	L	4	250	0.3	6			REN
2001 05 24.90		S[13.0		HS	27.0	L	6	167	! 1.0				TOT03
2001 06 10.78		S	14.4	HS	40.6	L	4	147	0.7	3			BOU
2001 06 11.77		S	14.6	HS	40.6	L	4	147	0.6	3			BOU
2001 06 12.73		S	14.7	HS	40.6	L	4	183	0.6	2			BOU
2001 06 14.78		S	14.7	HS	40.6	L	4	147	0.7	3/			BOU

Comet 110P/Hartley

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2000 11 24.11	x	S	14.7	HS	40	L	4	250	0.2	6/			REN
2000 11 30.05	x	S	14.8	HS	40	L	4	250	0.3	6			REN
2000 12 16.86	x	S	14	: HS	40	L	4	250	& 0.4	3/			REN
2001 01 25.82	x	S	15	: HS	40	L	4	300	& 0.25	5			REN
2001 02 13.80	x	S	15	: HS	40	L	4	300	0.2	5			REN
2001 02 14.87	x	S	15.2	HS	40	L	4	300	0.2	5/			REN

Comet 141P/Machholz

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 12 08.98		S	11.4	AC	44.5	L	4	80	1.5	1			MOR03
1999 12 11.97		S	11.7	AC	44.5	L	4	80	1.9	1			MOR03

Comet C/1998 T1 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 05 21.29		S	11.9	HS	31	T	10	78	1.6	3			DEA
1999 07 04.00		S	8.6	S	7.0	B		10	9.0	3			DEA
1999 07 04.97		S	8.7	S	7.0	B		10	10.5	4			DEA

Comet C/1999 F1 (Catalina)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 06 11.73		S	15.5	HS	40.6	L	4	183	0.4	4			BOU
2001 06 12.72		S	15.5	HS	40.6	L	4	247	0.45	5			BOU

Comet C/1999 J2 (Skiff)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 06 10.79		S	15.1	HS	40.6	L	4	183	0.5	3/			BOU
2001 06 11.79		S	15.1	HS	40.6	L	4	183	0.4	4			BOU
2001 06 12.80		S	15.2	HS	40.6	L	4	183	0.4	4			BOU
2001 06 13.78		S	15.2	HS	40.6	L	4	183	0.4	3/			BOU
2001 06 14.80		S	15.2	HS	40.6	L	4	183	0.4	3/			BOU

Comet C/1999 K8 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2000 11 30.78		S	[14.5	HS	44.0	L	5	156					HAS02

Comet C/1999 L3 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 12 18.45		S	13.6	AC	44.5	L	4	167	0.8	3			MOR03
2000 01 17.37		S	13.0	AC	44.5	L	4	167	0.8	3			MOR03
2000 01 21.20		S	13.0	AC	44.5	L	4	167	0.7	3			MOR03
2000 01 25.92	x	M	12.5	HS	40	L	4	94	2	5			REN
2000 01 28.22		S	12.2	AC	44.5	L	4	167	1.2	4			MOR03
2000 02 09.93		M	12.9	EA	40	L	4	94	1.33	5/			REN
2000 02 26.83	x	M	13.5	HS	40	L	4	94	1.5	2			REN

Comet C/1999 N2 (Lynn)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 07 13.95		S	7.0	S	7.0	B		10					DEA
1999 07 14.93		S	6.7	AA	7.0	B		10	3.2	4			DEA
1999 07 17.93		B	7.0	S	7.0	B		10	4.5	4			DEA

Comet C/1999 S4 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 11 04.05	x	S	15.0	HS	40	L	4	250	0.5	4			REN
1999 11 09.98	x	M	14.5	HS	40	L	4	250	0.5	5			REN
1999 11 16.02		M	15.0	EA	40	L	4	250	0.5	5			REN
1999 11 29.97	x	M	14.7	HS	40	L	4	250	0.3	5			REN

Comet C/1999 S4 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1999 12 05.86	x	M	14.8	HS	40	L	4	250	0.4	5			REN
2000 01 25.81	x	M	14.5	HS	40	L	4	250	0.3	5			REN
2000 06 26.32		S	9.3	AC	15	R	5	42	3				MOR03
2000 06 27.04	x	M	8.4	TT	8.0	B		12	3	6			REN
2000 06 28.32		S	10.0	AC	15	R	5	42	1	S7	0.05	265	MOR03
2000 07 01.31		M	10.1	AC	15	R	5	62	1	S6	0.07	260	MOR03
2000 07 07.04	x	M	7.7	TT	8.0	B		12	3	6/	0.7	270	REN
2000 07 10.31		M	8.9	AC	15	R	5	42	1.5	S5	0.23	275	MOR03
2000 07 11.33		M	8.8	AC	15	R	5	42	1	S7	0.28	280	MOR03
2000 07 12.07	x	M	7.2	TT	8.0	B		12	3.5	6	1	275	REN
2000 07 12.32		M	8.8	AC	15	R	5	42	1	S6	0.22	280	MOR03
2000 07 17.95	x	M	7.0	TT	8.0	B		12	& 7	6			REN
2000 07 20.07	s	S	7.5	AC	3.5	B		7	2.5				MOR03
2000 07 21.93	x	M	6.2	TT	5.0	B		10	& 5	6	1.5	25	REN
2000 07 22.12		S	6.6	AC	3.5	B		7	3		0.25	15	MOR03
2000 07 24.11		S	6.3	AC	3.5	B		7	3.5		0.25	45	MOR03
2000 07 28.10	s	S	7.8	AC	3.5	B		7					MOR03
2000 07 29.90	x	M	7.3	TT	8.0	B		12	5	5/	0.5	86	REN
2000 07 30.89	x	M	7.8	TT	8.0	B		12		4/	0.9	78	REN

Comet C/1999 T1 (McNaught-Hartley)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2000 12 09.46	w	S	7.7	AC	15	R	5	42	4	4			MOR03
2000 12 22.25	x	M	7.6	TT	5.0	B		10	& 5	5			REN
2000 12 22.29		S	7.7	S	7.0	B		10	7.5	4			DEA
2000 12 23.47		S	8.6	AC	15	R	5	42	2	4			MOR03
2000 12 25.46		S	8.3	AC	15	R	5	42	3	4			MOR03
2000 12 27.25		S	7.2	TJ	8.0	B		20	3.0	7			ST003
2000 12 29.45		S	8.5	AC	15	R	5	42	3	4			MOR03
2000 12 31.20		S	7.3	HS	27.0	L	6	83	5	6	4 m	280	TOT03
2000 12 31.23		S	7.4	SC	8.0	B		20	5	6			BAR
2001 01 02.44		S	8.4	AC	15	R	5	42	3.5	4			MOR03
2001 01 03.23	x	M	7.4	TT	5.0	B		10	& 6	5			REN
2001 01 06.42		S	7.9	AA	20.0	T	10	50	2.3	6/			SHA04
2001 01 08.22		S	8.2	AC	10.0	B		14	5	6			LO001
2001 01 19.12		S	8.2:	HS	24.5	L	5	38	4	5			CSU01
2001 01 20.26		S	8.3	TJ	15	R	8	48	4.0	5			ST003
2001 01 20.43		S	7.7	AC	3.5	B		7	5				MOR03
2001 01 22.46		S	7.7	AC	3.5	B		7	7				MOR03
2001 01 23.17	x	M	7.7	TT	8.0	B		12	6	5			REN
2001 01 26.21	x	M	7.8	TT	8.0	B		12	7				REN
2001 01 26.54		S	8.0	AC	3.5	B		7	5				MOR03
2001 02 03.12		S	8.0	AA	5.0	B		10	5	5	0.1	325	SAN07
2001 02 06.44		S	8.0	AC	3.5	B		7	6				MOR03
2001 02 16.10		M	8.6	AA	20.0	L	6	45	5	4/	0.1	270	BRL
2001 02 16.15		S	8.5	AC	5.0	B		7	4	5			BRL
2001 02 19.23		S	8.7	AC	25	L	4	53	3	6			LO001
2001 02 24.02		S	8.5	HS	27.0	L	6	83	5	4/	& 5 m	290	TOT03
2001 02 24.32		S	9.2	AC	15	R	5	42	3	3			MOR03
2001 02 28.42		S	9.3	AC	6	R	15	36	4.5	2			MOR03
2001 03 02.08	x	M	8.6	TT	8.0	B		12	& 5	4			REN
2001 03 04.36		S	9.4	AC	15	R	5	42	3.5	4			MOR03
2001 03 16.28		S	9.6	AC	15	R	5	42	3.5	2			MOR03
2001 03 16.92		S	9.6	HS	27.0	L	6	83	4	3	5 m	280	TOT03
2001 03 19.29		S	10.1	AC	15	R	5	42	3.5	2			MOR03
2001 03 28.98	x	M	11.2	HS	12	L	6	38	3	4			REN
2001 04 03.15	x	M	11.0	HS	12	L	6	70	1.33	3			REN
2001 04 13.94	x	M	12.8	HS	40	L	4	94	0.8	3/			REN
2001 04 14.83		S	12.2	HS	27.0	L	6	167	1.2	3			TOT03
2001 04 18.37		S	12.2	AC	44.5	L	4	167	1.3	2			MOR03
2001 04 20.08	x	M	12.7	HS	40	L	4	94	1.33	4			REN
2001 04 24.91		S	12.0	HS	27.0	L	6	167	1.0	2/			TOT03
2001 04 26.01	x	M	12.6	HS	40	L	4	94	1.33	3/			REN
2001 04 28.35		S	13.1	AC	44.5	L	4	167	0.9	3			MOR03

Comet C/1999 T1 (McNaught-Hartley) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 04 29.90		S	12.0	HS	27.0	L	6	167	1	3			TOT03
2001 05 10.89		S	12.0	HS	27.0	L	6	120	1.2	2			TOT03
2001 05 23.94		S	13.0	HS	27.0	L	6	120	0.6	2			TOT03
2001 07 10.93		S	13.8	AC	40.8	L	5	262	1.2	2/			RES
2001 07 11.99		S	13.8	AC	40.8	L	5	121	1.0	2/			RES
2001 07 12.92		S	13.7	AC	40.8	L	5	121	1.0	2/			RES
2001 07 13.94		S	13.7	AC	40.8	L	5	121	1.0	2/			RES
2001 07 18.93		S	13.6	AC	40.8	L	5	262	1.5	2/			RES
2001 07 20.00		S	13.8	AC	40.8	L	5	262	1.0	2			RES
2001 07 21.89		S	13.8	AC	40.8	L	5	131	0.9	2			RES
2001 07 22.90		S	13.9	AC	40.8	L	5	131	0.8	2			RES
2001 07 26.89		S	13.8	AC	40.8	L	5	131	1.0	2			RES
2001 07 30.87		M	12.5	HS	42	L	5	162	1.2	3/			LEH
2001 08 10.85		M	13.3	HS	42	L	5	81	1.3	3			LEH
2001 08 11.85		B	13.6	HS	42	L	5	81	1	3			LEH
2001 08 11.90		S	[14.0	TT	44.0	L	5	226					HAS02
2001 08 12.84		B	13.6	HS	42	L	5	81	1.1	3			LEH
2001 08 14.85		B	13.6	HS	42	L	5	81	1.2	3/			LEH
2001 08 15.83		B	13.6	HS	42	L	5	81	1.1	3/			LEH
2001 08 16.84		B	13.8	HS	42	L	5	81	1.2	3			LEH
2001 08 18.85		B	13.8	HS	42	L	5	81	1.1	3			LEH
2001 08 21.91		S	14.2	HS	34.0	L	4	167	0.5	2/			TOT03
2001 08 22.87		S	14.1	AC	41	L	5	121	0.6	2			RES
2001 08 23.89		S	14.0	AC	41	L	5	121	0.7	3			RES
2001 08 24.84		B	13.6	HS	42	L	5	81	1.2	3			LEH
2001 08 25.88		B	13.6	HS	42	L	5	81	1.1	3			LEH
2001 09 15.94		S	14.8	NP	44.5	L	5	167	< 1	1			MAR02
2001 09 21.89		S	14.1	HS	44.5	T	4	146	1.0	1/			SAR02

Comet C/1999 T2 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2000 07 05.99	x	M	14.5	HS	40	L	4	250	0.5	5			REN
2000 07 21.96	x	M	14.2	HS	40	L	4	200	0.3	5			REN
2000 07 30.99	x	M	13.8	HS	33	L	4	115	0.7	5			REN
2000 08 11.06	x	M	13.9	HS	40	L	4	200	& 0.5	5			REN
2000 08 28.97	x	M	13.9	HS	40	L	4	200	0.4	5/			REN
2000 09 04.93	x	M	13.7	HS	40	L	4	200	0.4	5			REN
2000 10 23.82	x	M	14.3	HS	40	L	4	250	0.4	5			REN
2001 01 30.16	x	M	14.0	HS	40	L	4	200	0.6	5/			REN
2001 04 14.03	x	M	14.0	HS	40	L	4	150	1	4			REN
2001 04 19.02	x	M	13.9	HS	40	L	4	150		5			REN
2001 04 20.07	x	M	13.5	HS	40	L	4	150		4/			REN
2001 04 25.99	x	M	13.7	HS	40	L	4	150		5/			REN
2001 05 12.89		S	12.8	HS	27.0	L	6	83	1.3	3			TOT03
2001 05 23.95		S	12.9	HS	27.0	L	6	83	1.2	2			TOT03
2001 06 12.91		S	13.0	HS	27.0	L	6	167	1.0	2			TOT03
2001 07 12.91		S	13.3	AC	40.8	L	5	121	1.2	3			RES

Comet C/1999 U4 (Catalina-Skiff)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 29.09		S	13.8	GA	31.0	J	6	143	0.5	4/			BOU
2001 08 30.06		B	13.3	HS	42	L	5	81	1.4	3/			LEH
2001 09 19.03		S	13.5	AC	41	L	5	121	1.0	2/			RES
2001 09 19.98		S	13.6	AC	41	L	5	121	1.0	3			RES
2001 09 20.06		B	13.4	HS	42	L	5	162	1.2	3/			LEH
2001 09 22.08		S	[14.5	HS	44.5	T	4	224	! 0.5				SAR02
2001 10 22.14		S	[14.0	HS	44.5	T	4	224	! 0.5				SAR02

Comet C/1999 Y1 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2000 07 31.08	x	M	14.2	HS	33	L	4	165	& 0.5	5			REN
2000 08 28.98	x	M	13.8	HS	40	L	4	200	0.5	5			REN

Comet C/1999 Y1 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2000 09 04.99	x	M	13.8	HS	40	L	4	200	& 0.4	5/			REN
2000 10 23.92	x	M	13.2	HS	40	L	4	150	0.7	6			REN
2000 10 29.00		S	13.3	AC	44.5	L	4	167	0.7	3			MOR03
2000 10 30.01		S	13.3	AC	44.5	L	4	167	0.7	3			MOR03
2000 11 01.25		S	13.2	AC	44.5	L	4	167	1.0	3			MOR03
2000 11 03.95	x	M	13.0	HS	40	L	4	150	1	5			REN
2000 11 17.82	x	M	13.0	HS	40	L	4	150	0.6	6			REN
2000 11 23.82	x	M	13.0	HS	40	L	4	150	0.6	5			REN
2000 12 16.79	x	M	13.8	HS	40	L	4	150	1	5			REN
2000 12 21.04		S	12.9	AC	44.5	L	4	167	0.7	2			MOR03
2000 12 21.80	x	M	13.5	HS	40	L	4	150	1.25	5			REN
2001 01 14.76		S	13.2	HS	27.0	L	6	120	1.0	1/			TOT03
2001 01 25.81	x	M	14.0	HS	40	L	4	200	0.5	5/			REN
2001 08 12.64		S	12.8	HS	20	L	7	45	1.0	5			MAT08
2001 08 14.58		S	12.4	GA	25.4	L		71					SEA
2001 08 23.59		B	12.6	HS	20	L	7	45	1.0	7			MAT08
2001 08 26.05		S	12.9	HS	25.4	T	10	102	2	1			DES01
2001 09 09.55		B	12.8	NO	20	L	7	45	1.0	6			MAT08
2001 09 14.56		B	13.0	NO	30	L	6	60	1.0	6			MAT08
2001 09 16.44		B	13.0	NO	30	L	6	60	1.0	6			MAT08
2001 10 08.55		S	13.6	HS	28	L	10	88	0.8	5/			MAT08
2001 10 13.62		S	13.7	HS	28	L	10	88	0.8	5/			MAT08
2001 10 14.48		S	13.6	HS	28	L	10	88	0.9	6/			MAT08
2001 10 16.60		S	13.6	HS	28	L	10	88	0.8	6/			MAT08
2001 10 19.42		S	13.6	GA	25.4	L		71					SEA

Comet C/2000 CT54 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 06 10.80		S	14.1:	SK	40.6	L	4	147	0.6				BOU
2001 06 11.83		S	14.2	SK	40.6	L	4	147	0.8	2/			BOU
2001 06 12.84		S	14.5	SK	40.6	L	4	183	0.6	2			BOU
2001 06 13.88		S	14.4	SK	40.6	L	4	147	0.5	3			BOU
2001 06 14.83		S	14.5	SK	40.6	L	4	122	0.6	3			BOU

Comet C/2000 OF8 (Spacewatch)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 06 10.72	w	S	14.6	AC	40.6	L	4	183	0.6	4			BOU
2001 06 11.71	w	S	14.4:	AC	40.6	L	4	147	0.8	4			BOU
2001 06 12.82		S	14.7	HS	40.6	L	4	183	0.8	3			BOU
2001 06 13.74	w	S	14.5	AC	40.6	L	4	183	0.6	3			BOU
2001 06 14.77		S	14.5	HS	40.6	L	4	183	0.7	3			BOU

Comet C/2000 SV74 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 22.03		S	13.7	AC	40.8	L	5	262	1.0	2/			RES
2001 07 27.02		S	13.7	AC	40.8	L	5	131	1.0	2/			RES
2001 08 11.86		S	14.0	TT	44.0	L	5	156					HAS02
2001 08 14.98		B	13.2	HS	42	L	5	81	1.3	4/			LEH
2001 08 15.95		M	12.8	HS	42	L	5	81	1.4	4			LEH
2001 08 16.97		M	12.8	HS	42	L	5	81	1.3	4			LEH
2001 08 16.97		S	13.8	HS	31.0	J	6	143	0.6	2			BOU
2001 08 17.02		S	13.5:	HS	20	T	10	100	1.0	3			SHA02
2001 08 17.96		S	13.8	HS	31.0	J	6	143	0.6	3			BOU
2001 08 17.97		S	13.9	HS	31.0	J	6	143	0.5	2			DIJ
2001 08 18.91		M	12.3	HS	42	L	5	81	1.4	3			LEH
2001 08 23.04		S	13.6	AC	41	L	5	121	1.2	2/			RES
2001 08 23.94		S	13.7	AC	41	L	5	121	1.5	2/			RES
2001 08 23.98		M	12.1:	HS	42	L	5	81	1.5	3			LEH
2001 08 24.95		S	13.4	AC	41	L	5	121	1.2	2/			RES
2001 08 24.99		M	12.0	HS	42	L	5	81	1.6	3			LEH
2001 08 25.92		S	13.7	HS	34.0	L	4	167	0.7	4			TOT03
2001 08 25.97		S	13.1	AC	41	L	5	121	1.5	3			RES

Comet C/2000 SV74 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 26.00		M	12.0	HS	42	L	5	81	1.5	3			LEH
2001 08 26.96		M	12.5	HS	42	L	5	81	1.3	3			LEH
2001 08 27.02		S	13.3	AC	41	L	5	121	1.5	3			RES
2001 08 27.05		S	12.8	HS	35	L	5	158	1.3	3			HOR02
2001 08 28.07		I	[14.0	HS	20	T	10	135					SHA02
2001 08 28.07		S	13.5	AC	41	L	5	121	1.2	2/			RES
2001 08 29.06		S	13.6	HS	31.0	J	6	143	0.8	2/			BOU
2001 08 29.07		S	13.2	HS	31.0	J	6	143	0.7	2/			DIJ
2001 08 29.09		S	13.7	HS	20	T	10	205	0.5	3			SHA02
2001 08 30.01		M	12.7	HS	42	L	5	81	1.5	3			LEH
2001 08 30.05		M	12.6	HS	35	L	5	158	1.6	3/			HOR02
2001 08 31.06		S	13.6	AC	41	L	5	121	1.2	2			RES
2001 08 31.09		M	12.6	HS	42	L	5	81	1.5	3			LEH
2001 09 08.89		S	13.6	AC	41	L	5	121	1.2	2/			RES
2001 09 15.98		M	13.5	NP	44.5	L	5	167	1	3			SAN04
2001 09 15.98		S	13.1	NP	44.5	L	5	167	1.5	2			MAR02
2001 09 16.93		S	13.5	HS	36	L	6	90	0.5	4			BAR06
2001 09 18.84		S	12.4	HS	13	L	8	69	1.0	2/			HOR02
2001 09 18.84		S	13.5	HS	44.0	L	5	156	0.3	4			HAS02
2001 09 18.99		S	13.3	AC	41	L	5	121	1.2	2/			RES
2001 09 19.84		M	12.4	HS	42	L	5	81	1.1	3			LEH
2001 09 19.94		S	13.6	AC	41	L	5	121	1.1	2/			RES
2001 09 20.79		S	12.4	HS	13	L	8	69	1.1	2/			HOR02
2001 09 21.81		M	12.2	HS	42	L	5	81	1.3	3			LEH
2001 09 21.99		M	13.2	HS	44.5	T	4	146	0.6	5/			SAR02
2001 09 22.69		S	11.8	HS	25.4	T	6	116	1.8	3/			YOS04
2001 09 22.82		M	12.5	HS	42	L	5	81	1.1	3			LEH
2001 10 08.79		S	12.9	AC	31.0	J	6	109	1.3	4/			BOU
2001 10 08.79		S	12.9	HS	31.0	J	6	109	0.6	2/			DIJ
2001 10 15.84		S	13.0	AC	31.0	J	6	109	1.0	3/			BOU
2001 10 15.85		S	13.0	AC	31.0	J	6	109		2			DIJ
2001 10 16.94		S	13.0	AC	31.0	J	6	143	0.9	3			BOU
2001 10 18.63	x	S	12.5:	HS	32.0	L	5	91	0.9	3			NAG08
2001 10 20.01		S	13.4	AC	41	L	5	121	1.5	2/			RES
2001 10 23.09		S	13.0	HS	44.5	T	4	146	0.8	4			SAR02
2001 10 24.66	x	S	12.5:	HS	32.0	L	5	58	0.9	3			NAG08

Comet C/2000 W1 (Utsunomiya-Jones)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2000 12 05.95		B	6.7	S	7.0	B		10	5.5	6			DEA
2000 12 06.95		S	6.4	S	7.0	B		10	6.8	5			DEA
2000 12 07.94		S	6.4	S	7.0	B		10	6.4	6			DEA

Comet C/2000 WM1 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 14.99		M	12.4	HS	42	L	5	81	1.4	3			LEH
2001 08 15.01		S	13.4	AC	41	L	5	121	0.7	2			RES
2001 08 15.96		M	12.6	HS	42	L	5	81	1.5	3			LEH
2001 08 16.02		S	13.7	AC	41	L	5	262	0.7	2			RES
2001 08 16.99		S	13.8	GA	31.0	J	6	177	0.6	3			BOU
2001 08 17.05		M	12.3	HS	42	L	5	81	1.5	3			LEH
2001 08 17.05		S	[13.0	HS	20	T	10	100					SHA02
2001 08 18.06		S	14.1	HS	25.6	L	5	169	0.5	3			BIV
2001 08 18.07		S	14.1	HS	25.6	L	5	84	0.5	3			BIV
2001 08 23.05		S	13.5	AC	41	L	5	121	1.5	2/			RES
2001 08 23.99		M	11.9	HS	42	L	5	81	1.6	3			LEH
2001 08 25.00		M	11.9	HS	42	L	5	81	1.8	3			LEH
2001 08 26.02		M	11.8	HS	42	L	5	81	1.8	3			LEH
2001 08 26.98		M	11.4	HS	42	L	5	81	2	3			LEH
2001 08 27.02		S	13.5	AC	41	L	5	121	1.0	2			RES
2001 08 27.06		S	12.5	HS	35	L	5	158	1.4	3			HOR02
2001 08 28.07		S	13.2	AC	41	L	5	121	1.5	3			RES
2001 08 28.09		S	[13.0	HS	20	T	10	135					SHA02

Comet C/2000 WM1 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 29.07		S	13.5	GA	31.0	J	6	143	0.8	3/			BOU
2001 08 29.11		S	12.7	HS	20	T	10	205	0.3	3			SHA02
2001 08 30.01		S	13.3	AC	41	L	5	121	1.2	2			RES
2001 08 30.02		M	11.5	HS	42	L	5	81	1.8	4			LEH
2001 08 30.06		M	12.5	HS	35	L	5	158	1.2	5/			HOR02
2001 08 31.05		S	13.4	AC	41	L	5	121	1.3	2/			RES
2001 08 31.10		M	11.5	HS	42	L	5	81	1.7	4			LEH
2001 09 01.17		S	13.2	HS	25.6	L	5	169	0.6	5			BIV
2001 09 14.90		S	12.8	AC	31.0	J	6	109	1.2	3			BOU
2001 09 14.93		S	13.1	HS	25.6	L	5	169	0.8	3			BIV
2001 09 14.94		S	12.9	HS	25.6	L	5	84	1.0	2			BIV
2001 09 15.09		S	12.8	HS	25.6	L	5	84	1.2	2			BIV
2001 09 15.88		S	11.7	HS	36	L	6	90	1.5	2			BAR06
2001 09 15.99		M	12.3	NP	44.5	L	5	167	2	3			MAR02
2001 09 15.99		S	12.1	NP	44.5	L	5	167	1.5	2			SAN04
2001 09 17.68	x	S	11.9	GA	25.4	L	4	113	1.0	3			YOS02
2001 09 18.85		S	11.8	TK	13	L	8	69	1.2	3			HOR02
2001 09 18.99		S	11.9	AC	41	L	5	121	2.2	3			RES
2001 09 19.86		M	11.4	HS	42	L	5	81	1.9	3			LEH
2001 09 19.98		S	11.7	AC	41	L	5	121	1.5	3			RES
2001 09 21.84		M	11.6	HS	42	L	5	81	1.5	3			LEH
2001 09 21.97		S	11.5	HS	36	L	6	90	2.3	2			BAR06
2001 09 22.02		M	12.4	HS	44.5	T	4	146	0.9	s5	2.5m	260	SAR02
2001 09 22.14		S	12.6	HS	20.3	L	6	95	0.8	3			BIV
2001 09 22.66		M	12.4	HS	25.0	L	6	120	0.6	3			TSU02
2001 09 22.71		S	11.2	HS	25.4	T	6	116	1.4	3/			YOS04
2001 09 22.78	x	S	12.3	HS	32.0	L	5	58	1.1	4			NAG08
2001 09 22.85		M	11.6	HS	42	L	5	81	1.4	3			LEH
2001 09 23.11		S	12.7	HS	20.3	L	6	95	1.0	3			BIV
2001 09 27.08		M	11.6	GA	25	L	4	53	1.6	2/			SHU
2001 09 28.73		S	11.8	HS	25.4	T	6	62	1.8	4			YOS04
2001 09 29.04		M	12.1	PA	30	L	5	60	1.2	2			NEV
2001 09 29.13		S	11.5	GA	25.4	J	6	72	1.9	3/			BOU
2001 09 30.14		S	12.0	HS	25.6	L	5	42	1.8	4			BIV
2001 09 30.14		S	12.2	HS	25.6	L	5	84	1.6	5	0.03	290	BIV
2001 10 08.82		S	10.5	TJ	31.0	J	6	72	1.9	3			DIJ
2001 10 08.82		S	11.1	TJ	31.0	J	6	72	2.8	3/			BOU
2001 10 11.08		S	11.3	TJ	20.3	T	10	100	1.3	2			GRA04
2001 10 11.58	x	S	10.9	TJ	32.0	L	5	58	2.8	4			NAG08
2001 10 12.15		S	11.3	TK	20.3	L	6	48	1.8	3			BIV
2001 10 12.16		S	11.4	TK	20.3	L	6	95	1.6	3			BIV
2001 10 12.94		S	10.8	AC	41	L	5	121	2.5	3/			RES
2001 10 12.98		S	11.3	TK	25.6	L	5	84	2.0	3			BIV
2001 10 13.64	x	S	11.0	HS	31.7	L	6	63	1.3	3			MIY01
2001 10 13.67	x	S	11.1	TT	25.4	L	4	46	1.5	4			YOS02
2001 10 13.91		S	10.9	TT	44.0	L	5	63	1.0	4	0.04	270	HAS02
2001 10 13.95		S	11.0	AC	41	L	5	121	2.5	3			RES
2001 10 14.08		S	10.8	TJ	20.3	T	10	62	2.2	4			GRA04
2001 10 14.38		S	11.7	TK	25	L	4	50	1.0	5			LIN04
2001 10 14.39		S	11.9	TK	38	L	5	174	0.8	5	1.2m	270	LIN04
2001 10 14.67	x	S	10.7	TT	25.4	L	4	46	1.6	4			YOS02
2001 10 15.84		S	10.2	HS	11	L	7	50	3	2			BAR06
2001 10 15.87		S	10.6	TJ	31.0	J	6	72	2.5	3			DIJ
2001 10 15.87		S	10.8	TJ	31.0	J	6	72	2.7	4			BOU
2001 10 16.17		S	11.2	TK	20.3	L	6	48	1.8	2	0.04	275	BIV
2001 10 16.80		M	10.7	PA	30	L	5	60	2	5	0.2	275	NEV
2001 10 16.91		M	10.5	TJ	31.0	J	6	72	2.5	4/	3	m 270	BOU
2001 10 16.92		S	10.3	TJ	31.0	J	6	72	3.0	3/			DIJ
2001 10 18.65	x	S	10.3	TJ	32.0	L	5	58	2.1	6	3	m 255	NAG08
2001 10 18.73	x	S	10.7	HS	10.0	B		37	2	3			YOS02
2001 10 18.93		S	11.3	TK	25.6	L	5	84	1.7	2			BIV
2001 10 19.63	x	M	10.2	TT	25.0	L	6	47	2.5	4	7	m 270	TSU02
2001 10 19.70		S	10.2	TJ	25.4	T	6	62	2.7	4	5	m 255	YOS04
2001 10 19.94		S	10.0	TJ	25.4	J	6	58	2.9	3			DIJ
2001 10 19.94		S	10.2	TJ	25.4	J	6	58	3.0	4			BOU

Comet C/2000 WM1 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 10 20.02		S	10.7	AC	41	L	5	121	& 2	3/			RES
2001 10 21.90		M	10.2	PA	30	L	5	60	2.5	4	0.1	270	NEV
2001 10 22.08		S	10.4	TJ	20.3	T	10	100	2.0	3/			GRA04
2001 10 22.09		S	9.7	TI	6.0	B		20	10	3			SAR02
2001 10 23.04		S	10.0	TJ	20.3	T	10	62	2.6	3			GRA04
2001 10 23.75	x	B	11.7	HS	25.0	L	6	69	0.8	4			WAT01
2001 10 23.82		M	10.9	PA	30	L	5	60	2.3	5			NEV
2001 10 24.01		S	10.8	NP	25	L	5	96	3	3			SEG
2001 10 24.07		M	10.5	GA	25	L	4	53	2	4/			SHU
2001 10 24.13		S	10.3	TK	20.3	L	6	48	1.8	2	0.06	265	BIV
2001 10 24.64	x	S	10.0	TJ	32.0	L	5	58	2.6	5/	4 m	270	NAG08
2001 10 24.84		M	10.0	PA	30	L	5	60	2.2	s5	0.1	265	NEV
2001 10 25.07		M	10.7	GA	25	L	4	53	1.5	5	3 m	245	SHU
2001 10 25.79	x	B	11.2	TJ	25.0	L	6	69	1.7	5			WAT01
2001 10 26.13		S	10.2	TK	20.3	L	6	48	2.0	3	0.06	260	BIV
2001 10 26.80	x	B	10.9	HS	25.0	L	6	69	2.9	4			WAT01
2001 10 26.95		S	9.8	TJ	41	L	5	121	3.5	4			RES
2001 10 28.06		S	9.9	HS	36	L	6	90	3	3			BAR06
2001 10 28.14		S	10.0	TK	25.6	L	5	42	3.0	3	0.1	260	BIV
2001 10 29.82	x	M	10.0	TT	25.4	L	4	46	2.5	4	7 m	260	YOS02

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DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 04 01.39	x	S	9.1	TK	31.7	L	5	64	1	2			JON
2001 04 03.80		S	7	HS	27.0	L	6	83	3				TOT03
2001 04 05.38		S	8.5	AA	25.4	L	6	61	3.5	3			SEA01
2001 04 05.80		S	6.8	HS	27.0	L	6	83	3				TOT03
2001 04 10.05	w	S	8.6	AC	15	R	5	42	4.5	3			MOR03
2001 04 11.40		M	8.8	AA	8.0	B		15	1.5	7			SEA01
2001 04 13.09	w	S	8.7	AC	15	R	5	42	4	3			MOR03
2001 04 13.74		S	6.8	HS	27.0	L	6	83	3	5			TOT03
2001 04 15.04		S	7.8	AA	20.0	T	10	50	2.7	3/			SHA04
2001 04 15.35		M	8.9	AA	8.0	B		15	2.0	5			SEA01
2001 04 16.38		M	8.8	AA	8.0	B		15	3.0	4			SEA01
2001 04 17.38		M	8.8	AA	8.0	B		15	4.0	3			SEA01
2001 04 18.36		M	8.5	AA	8.0	B		15	5.0	3			SEA01
2001 04 18.78		S	8.0	HS	27.0	L	6	83	2	3			TOT03
2001 04 19.07	w	S	8.5	AC	15	R	5	42	3.5				MOR03
2001 04 19.36		M	8.5	AA	8.0	B		15	4.5	3			SEA01
2001 04 20.07	w	S	8.5	AC	15	R	5	42	4				MOR03
2001 04 20.35		M	8.4	AA	8.0	B		15	5.0	3			SEA01
2001 04 22.04		S	7.4	AA	20.0	T	10	50	3.4	5/			SHA04
2001 04 22.35	x	S	7.6	TK	4.5	R	6	13	4	2			JON
2001 04 23.31	x	S	7.8	TK	4.5	R	6	13	4	2			JON
2001 04 23.34		M	8.4	AA	8.0	B		15	4.5	4			SEA01
2001 04 24.34		M	8.1	AA	5.0	B		10	5.0	5			SEA01
2001 04 25.36		M	7.6	AA	5.0	B		10	3.5	7			SEA01
2001 04 26.30	x	S	7.0	TK	4.5	R	6	13	4	2			JON
2001 04 27.04		S	6.3	AA	20.0	T	10	50	3.4	6			SHA04
2001 04 27.29	x	S	6.9	TK	4.5	R	6	13	4	2			JON
2001 04 28.34		M	7.6	AA	5.0	B		10	3.5	7			SEA01
2001 05 03.96		B	6.0	TJ	5.0	B		7	5	6			MAN04
2001 05 05.96		B	5.9	TJ	5.0	B		7	5	6			MAN04
2001 05 07.33		B	5.8	TJ	5.0	B		8	6	7			KEM01
2001 05 08.31		B	5.8	TJ	5.0	B		8	6	7			KEM01
2001 05 11.33		M	5.4	AA	5.0	B		10	3.8	7			SEA01
2001 05 11.97		B	5.7	TJ	5.0	B		7	6	6			MAN04
2001 05 12.33		I	5.2	AA	0.0	E		1					SEA01
2001 05 12.33		M	5.4	AA	5.0	B		10	4.5	8	2.2	115	SEA01
2001 05 13.96		B	5.6	TJ	5.0	B		7	6	6			MAN04
2001 05 14.28		B	5.3	TJ	5.0	B		8	6	7			KEM01
2001 05 14.29	x	S	5.5	TK	4.5	R	6	13	4	5			JON
2001 05 15.30	x	S	5.4	TK	4.5	R	6	13	4.5	5			JON
2001 05 15.31		B	5.4	TJ	5.0	B		8	6	7			KEM01

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DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 05 16.30	x	S	5.4	TK	4.5	R	6	13	4	6			JON
2001 05 16.94		B	5.6	TJ	5.0	B		7	6	6			MAN04
2001 05 17.29	x	S	5.3	TK	4.5	R	6	13	4	5			JON
2001 05 17.93		B	5.5	TJ	5.0	B		7	6	6			MAN04
2001 05 18.93		B	5.5	TJ	5.0	B		7	6	6			MAN04
2001 05 19.32	x	S	5.2	TK	4.5	R	6	13	4	5			JON
2001 05 20.29		B	5.3	TJ	5.0	B		8	6	7			KEM01
2001 05 22.28		B	5.2	TJ	5.0	B		8	6	7			KEM01
2001 05 23.30	x	S	5.1	TK	4.5	R	6	13	4	5			JON
2001 05 23.31		B	5.1	TJ	5.0	B		8	6	7			KEM01
2001 05 24.30		B	5.1	TJ	5.0	B		8	6	7			KEM01
2001 05 27.29	x	S	5.4	TK	4.5	R	6	13	4.5	6			JON
2001 05 30.29	x	S	5.2	TK	4.5	R	6	13	5	6			JON
2001 05 31.28		B	4.9	TJ	5.0	B		8	7	7			KEM01
2001 06 01.28		B	4.9	TJ	5.0	B		8	7	7			KEM01
2001 06 01.77	x	S	5.3	TK	4.5	R	6	13	7	5			JON
2001 06 02.29		B	4.8	TJ	5.0	B		8	7	7			KEM01
2001 06 02.77	x	S	5.0	TK	4.5	R	6	13	8	5			JON
2001 06 03.26		B	4.7	TJ	5.0	B		8	7	7			KEM01
2001 06 03.77	x	S	4.7	TK	5.0	B		7	4				JON
2001 06 09.74		B	4.4	TJ	5.0	B		8	9	6			KEM01
2001 06 10.74	x	S	5.0	TK	5.0	B		7	8	2			JON
2001 06 11.73	x	S	3.8	TK	5.0	B		7	10	2			JON
2001 06 12.75	x	S	3.3	TK	2.3	B		2	13				JON
2001 06 12.75	x	S	3.4	TK	5.0	B		7	13	4			JON
2001 06 13.74		B	4.3	TJ	5.0	B		8	9	6			KEM01
2001 06 17.76	x	S	4.6	TK	5.0	B		7	9				JON
2001 06 18.73	x	S	4.4	TK	5.0	B		7	10	5			JON
2001 06 19.72		S	4.2	TJ	5.0	B		8	12	7			KEM01
2001 06 19.74	x	S	4.0	TK	5.0	B		7	12	5			JON
2001 06 21.10	&	E	3.9	HS	0.8	E		1	15	1			MOR09
2001 06 21.72		S	4.3	TJ	5.0	B		8	12	7			KEM01
2001 06 23.71	x	S	4.3	TK	5.0	B		7	15	5			JON
2001 06 24.72	x	S	4.3	TK	5.0	B		7	16	5			JON
2001 06 25.75	x	S	4.4	TK	5.0	B		7	20	4			JON
2001 06 26.34		S	4.2	AA	3.5	B		7	16				MOR03
2001 06 26.73		S	4.4	TJ	5.0	B		8	10	7			KEM01
2001 06 26.75	x	S	4.3	TK	5.0	B		7	16	4			JON
2001 06 28.06		S	5.2:	HD	6.0	B		20	& 5	5			BAL03
2001 06 28.14		M	4.1	AA	3.5	B		7	20	6			PRI04
2001 06 28.74		S	4.9	TJ	5.0	B		8	10	7			KEM01
2001 06 29.05	x	B	4.5	TJ	5.0	B		12		5	0.15		SMY
2001 06 29.11		M	4.3	AA	5.0	B		7	13	6	1.3	260	BEG01
2001 06 29.14		M	4.0	AA	0.0	E		1		6			PRI04
2001 06 29.14		M	4.0	AA	3.5	B		7	20	6			PRI04
2001 06 29.33		S	4.1	AA	3.5	B		7	15				MOR03
2001 06 30.10		M	4.4	AA	0.0	E		1	20	6			BEG01
2001 06 30.11		M	4.7	AA	5.0	B		7	20	5	1.3	260	BEG01
2001 06 30.14		M	4.2	AA	0.0	E		1		6			PRI04
2001 06 30.14		M	4.2	AA	3.5	B		7	15	6			PRI04
2001 06 30.73	x	S	4.1	TK	5.0	B		7	15	5			JON
2001 07 01.00	x	B	5.4	TJ	25	L	6	54	5	4			SWI
2001 07 01.01	x	B	4.4	TJ	3.0	B		8	&10	5			ADA02
2001 07 01.02	x	M	4.2	TJ	5.0	B		10	12	7	0.3	255	GUZ
2001 07 01.02		M	4.8	AA	5.0	B		10	15	4	1	225	SAN07
2001 07 01.03	x	B	5.0:	TJ	6.0	B		20	&10	5			WLO
2001 07 01.03		S	4.6	AA	5.0	B		7	40	5			KOS
2001 07 01.04	x	B	5.9	TT	6.6	B		20	&10	5			FIL04
2001 07 01.07		M	4.7	AA	0.0	E		1	15	6			PRI04
2001 07 01.07		M	4.7	AA	3.5	B		7	15	6			PRI04
2001 07 01.08		M	4.8	AA	25.0	L	8	45	14	7	30	m	PRI04
2001 07 01.74	x	S	4.5	TK	5.0	B		7	15	4			JON
2001 07 02.07		S	4.5	AA	4.2	B		7		4/			ZAN
2001 07 02.08		S	4.3	AA	0.0	E		1					ZAN
2001 07 02.13		M	5.0	AA	0.0	E		1	25	6			BEG01

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DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 02.14		M	4.7	AA	5.0	B		7	25	5	1.5	260	BEG01
2001 07 02.75	x	S	4.7	TK	5.0	B		7	20	5			JON
2001 07 03.01		S	5.1:	HD	6.0	B		20	10	6/			BAL03
2001 07 03.13		M	4.6	AA	0.0	E		1		6			PRI04
2001 07 03.13		M	4.6	AA	3.5	B		7	14	6			PRI04
2001 07 04.05		M	4.8	AA	3.5	B		7	15	6			PRI04
2001 07 04.05		S	4.9	TT	5.0	B		7	9.4	4			SHA02
2001 07 04.05		S	5.8	TT	10	B		14	7	5			SHA02
2001 07 04.06		S	5.0	TT	8.0	B		20	8.9	5			SHA02
2001 07 04.12		M	4.7	AA	5.0	B		7	20	7	1.2	260	BEG01
2001 07 04.99		M	4.5	TT	5.0	B		10	16	4/			LEH
2001 07 05.03	x	S	5.2	TT	5	R	6	20	& 6	s5			GRA09
2001 07 05.03	x	S	5.7	TJ	6.0	B		20	&12	1/			SAD
2001 07 05.33		S	5.0	AA	3.5	B		7	11	3			MOR03
2001 07 05.92	x	B	4.8	TT	20	L	5	30	16	D6	&0.5	215	POW01
2001 07 06.01	x	B	4.6	TT	5.0	B		7	18	D6	&0.3	215	POW01
2001 07 06.02	x	B	5.7:	TJ	5.0	B		7	9	S3			SPE01
2001 07 06.04	x	B	4.8	TJ	5.0	B		12	15	4/			SMY
2001 07 06.14		M	5.4	AA	3.5	B		7	20	5			PRI04
2001 07 06.33		S	5.1	AA	3.5	B		7	12	3			MOR03
2001 07 06.94	x	B	4.7	TT	20	L	5	30	16	D6	&0.4	216	POW01
2001 07 06.95	x	B	4.8	TJ	3.0	B		8	&10	4			ADA02
2001 07 06.96	x	B	7.1	TT	6.6	B		20	&10	4			FIL04
2001 07 06.96		M	4.5	TT	5.0	B		10	16	4			LEH
2001 07 06.98	x	B	5.9:	TJ	25	L	5	47	& 8	s3			BOH02
2001 07 06.98	x	S	5.0	TJ	25	L	6	54	5	5			SWI
2001 07 06.99	x	M	4.9	TJ	5.0	B		10	16	6			GUZ
2001 07 07.00	x	B	4.7	TT	5.0	B		7	15	D6	&0.3	215	POW01
2001 07 07.00	x	M	5.4:	TJ	5.0	B		7	12	S3			SPE01
2001 07 07.03	x	B	5.2:	TJ	6.0	B		20	&12	5/			WLO
2001 07 07.04	x	O	6.5:	AC	5.0	B		10	&10	3/			MAR12
2001 07 07.97	x	M	5.2	TJ	6.0	B		20	&10	2			ADA02
2001 07 07.98		S	5.0	AA	8.0	B		20	12	6			BAR
2001 07 08.03	x	S	4.9	TT	5	R	6	20	&10	5			GRA09
2001 07 08.86		S	5.4	AA	5.0	B		7	14	3			KOS
2001 07 08.88		M	5.0:	AA	5.0	B		10	15	3	0.5	220	SAN07
2001 07 08.92	x	M	4.8	TJ	5.0	B		10	12	6			GUZ
2001 07 09.00	x	M	4.8	TJ	6.0	B		20	&11	4			ADA02
2001 07 09.05	x&	O	6.5	AA	5.0	B		10	& 8	3/			MAR12
2001 07 09.95	x	B	6.2	TJ	8.0	B		10	12	2			SIK01
2001 07 10.02	x	B	5.2:	TJ	6.0	B		20	&15	5/			WLO
2001 07 10.04	x	B	6.2	TJ	5.0	B		12	15	s4			SMY
2001 07 10.04	x&	O	6.8	AA	5.0	B		10	& 8	3/			MAR12
2001 07 10.85	x	S	5.9	TT	15	L	6	45	6.5	5/			KEZ
2001 07 10.88		S	4.8	AA	5.0	B		7	25	3	2.6	245	KOS
2001 07 10.89	x	B	6.6	TT	5.0	B		7	13	D6/			POW01
2001 07 10.89		S	5.3:	HD	6.0	B		20	12	6/			BAL03
2001 07 10.89	x	S	5.6	TJ	15.0	L	6	48	12	4	0.5	245	GUZ
2001 07 10.91	x	B	5.9	TJ	5.0	B		7	12	S5			SPE01
2001 07 10.91	x	B	6.9	TT	6.0	B		20	& 7	3			SCI
2001 07 10.91	x	B	6.9	TT	20	L	5	30	14	D6/			POW01
2001 07 10.92	x	B	6.1	TJ	5.0	B		10	15	3			OSS
2001 07 10.92		S	5.8	TJ	6.0	B		20	20	3			RES
2001 07 10.93		B	5.1:	S	5.0	B	4	7	&10	4	&0.17	230	KOU
2001 07 10.93		S	5.2	HS	34.0	L	6	88	7	5	0.1	220	TOT03
2001 07 10.94		S	5.7	TT	8.0	B		20	8.3	4			SHA02
2001 07 10.95	x	B	6.2	TT	6.6	B		20	& 7	4/			FIL04
2001 07 10.98		S	5.6	TT	3.0	B		8	12	3			SHA02
2001 07 10.99	x	S	6.7	TT	21	L	8	52	5	4			PAC03
2001 07 11.13		M	5.9	AA	5.0	B		7	20	4			BEG01
2001 07 11.14		M	6.3	AA	3.5	B		7	25	4			PRI04
2001 07 11.33		S	5.7	AA	3.5	B		7	12	3			MOR03
2001 07 11.72	x	S	7.1	TK	4.5	R	6	13	& 8	1			JON
2001 07 11.72	x	S	7.3	TK	7.8	R	8	30	& 6	1			JON
2001 07 11.90		M	5.3	AA	5.0	B		10	18	4	1.5	235	SAN07

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DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 11.99		S	5.5	TJ	6.0	B		20	10	3			RES
2001 07 12.33		S	5.6	AA	3.5	B		7	16	3			MOR03
2001 07 12.84	xs	B	4.8	TJ	6.8	R	12	40	& 8	D4	&20 m		CHR
2001 07 12.86	x	S	4.9	TT	15	L	6	45	10	5	&0.58	230	KEZ
2001 07 12.88		S	5.0	AA	5.0	B		7	15	4	2.1	240	KOS
2001 07 12.89	x	M	5.0:	TJ	6.0	B		20	&16	4	0.5		ADA02
2001 07 12.90	x	B	6.5	TT	6.0	B		20	& 6	4			SCI
2001 07 12.90	x&	S	5.7	AA	5.0	B		10	9	s4			MAR12
2001 07 12.91		B	4.8	S	5.0	B	4	7	>15	3/	>0.33	220	KOU
2001 07 12.91	x	B	5.6	TJ	8.0	B		10	14	4			SIK01
2001 07 12.91	x	E	5.6	S	20.5	L	6	37	&13	s4			KIS03
2001 07 12.91		S	4.7	TJ	0.0	E		1	&25	3			RES
2001 07 12.91		S	4.9	TJ	6.0	B		20	20	5	0.5	125	RES
2001 07 12.92	x	B	5.6	TT	6.6	B		20	&15	5	&0.4	230	FIL04
2001 07 12.92	x	S	5.6	AA	4.0	B		8	12	s3/			MAR13
2001 07 12.93	x	B	4.5	TJ	6.0	B		20	&20	6			WLO
2001 07 12.94	x	B	4.3	TJ	18	L	7	58	&22	6	&0.5		WLO
2001 07 12.94		S	5.4	TT	8.0	B		20	13	5			SHA02
2001 07 12.95	x	B	4.8	TJ	25	L	6	54	8	6	&0.5		SWI
2001 07 12.96	x	B	4.8	TJ	25.0	L	6	8	8	6	1.5		GUZ
2001 07 12.96	x	B	6.3:	TJ	12	L	7	50	9	S7			LEG
2001 07 12.96		S	5.3	TT	5.0	B		7	16	6			SHA02
2001 07 12.97	x	S	4.8	TT	21	L	8	52	11	S5	0.42	233	PAC03
2001 07 12.97		S	4.9	TT	0.7	E		1	16	7			SHA02
2001 07 12.97		S	5.1	TT	4.0	B		2	16	7			SHA02
2001 07 12.97	x	S	5.3	S	6.0	B		20	&15	3			KID01
2001 07 12.98	x&	B	7.0	S	6.0	B		20	& 6	D5			BAL05
2001 07 12.99	x	B	5.3	TT	5.0	B		20	10	s6	&0.47	233	PAC03
2001 07 12.99	x	M	4.9	TT	4.0	B		8	11	s5			GRA09
2001 07 13.02	x	S	4.5	TJ	6.0	B		20	10	3			PAR03
2001 07 13.33		S	5.1	AA	3.5	B		7	16	3			MOR03
2001 07 13.84	xs	B	4.8	TJ	6.8	R	12	40	& 8	D4	&20 m		CHR
2001 07 13.85	x	M	5.0:	TJ	6.0	B		20	&15	4			ADA02
2001 07 13.86	x	M	4.9	TJ	5.0	B		10	10	5			SWI
2001 07 13.88	x	B	4.4	TJ	0.0	E		1	15	7			GUZ
2001 07 13.90	x	B	5.3	TT	20	L	5	50	8.5	D6			POW01
2001 07 13.90	x&	S	5.0	AA	5.0	B		20	&12	s4			MAR12
2001 07 13.91		B	4.9	S	5.0	B	4	7	20	3/	0.50	225	KOU
2001 07 13.91	x	B	5.0	TT	0.0	E		1	8	D6			POW01
2001 07 13.91		M	4.6	TT	0.8	E		1	20	5			LEH
2001 07 13.92	x	B	5.1	TT	5.0	B		7	9	D6			POW01
2001 07 13.93		S	4.6	TJ	6.0	B		20	22	6	2.2	225	RES
2001 07 13.93		S	4.7	TJ	0.0	E		20	&20	5			RES
2001 07 13.94	x	B	4.9	TJ	5.0	B		7	23	S5			SPE01
2001 07 13.94		M	4.4	TJ	10.0	B		20	25	S7/	0.8	230	MEY
2001 07 13.94	x	M	4.7	TJ	5.0	B		7	10	3			PAR03
2001 07 13.96	x	B	4.6	TJ	6	R	10	30	&15	5			WLO
2001 07 13.96	x	B	5.4	TT	5.0	B		7	&19	4			FIL04
2001 07 13.96	x	B	6.2	TT	6.0	B		20	&11	5			SCI
2001 07 13.97	x	S	5.2	S	6.0	B		20	&13	3			KID01
2001 07 14.00	x	M	5.1	TJ	8	R	7	35	11	s6			KWI
2001 07 14.04	x	B	6.4	TJ	5.0	B		12	10	4			SMY
2001 07 14.05		M	5.8	S	6.0	B		20	11	4			KUB
2001 07 14.13		M	5.0	AA	0.0	E		1		5			PRI04
2001 07 14.13		M	5.0	AA	5.0	B		10	16	6			PRI04
2001 07 14.33		S	5.1	AA	3.5	B		7	18	3			MOR03
2001 07 14.70	x	S	5.2	TK	5.0	B		7	&12	1			JON
2001 07 14.87	x	B	5.5	TT	5.0	B		7	16	D5/			POW01
2001 07 14.88	x	S	4.7	TJ	0.0	E		1	12	6			GUZ
2001 07 14.91	x	B	5.3	TT	5.0	B		7	&14	5			FIL04
2001 07 14.91		S	5.1	AA	5.0	B		7	22	3	1.0	235	KOS
2001 07 14.91	x	S	5.3	AA	5.0	B		10	13	3/			MAR12
2001 07 14.92	x	B	4.8	TT	5.0	B		7	18	d5	0.53	218	MAK02
2001 07 14.92	x	B	5.0	TJ	6	R	10	30	&12	4			WLO
2001 07 14.93	x	M	5.0:	TJ	3.0	B		8	&17	4	0.5		ADA02

Comet C/2001 A2 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 14.93		S	5.0	TJ	0.0	E		20	&20	5			RES
2001 07 14.93		S	5.1	TJ	6.0	B		20	18	6	1.5	230	RES
2001 07 14.93		S	5.8	TT	8.0	B		20	11.9	4			SHA02
2001 07 14.94	x	B	5.4	S	20.5	L	6	37	14	s4/			KIS03
2001 07 14.94	x	I	6.3	TT	0.0	E		1		9			MAK02
2001 07 14.94		S	5.3	TT	5.0	B		7	19	5			SHA02
2001 07 14.95	x	B	6.7	TT	6.0	B		20	& 7	3/			SCI
2001 07 14.95		M	4.9	TT	0.8	E		1	20	5			LEH
2001 07 14.95	x	S	5.5	TJ	8.0	B		10	&15	S4/			MAR13
2001 07 14.96		B	5.2	S	5.0	B	4	7	>15	3	>0.50	235	KOU
2001 07 14.96	x	B	5.2	TJ	8.0	B		10	17	3			SIK01
2001 07 14.96	x	B	5.4	TT	21	L	8	52	8	S5	&0.33	233	PAC03
2001 07 14.96	x	S	5.6	TT	15	L	6	45	12	6/	&0.32	227	KEZ
2001 07 14.99	x	B	5.4	TT	5.0	B		20	11	s6	&0.30	233	PAC03
2001 07 15.00	x	M	7.6	TJ	12.0	L	7	50	7	3			LEG
2001 07 15.02	x	B	6.5	TJ	5.0	B		12	10	3/			SMY
2001 07 15.03	x	M	4.9	TJ	5.0	B		10	10	6			GUZ
2001 07 15.05	x	B	5.8	TJ	25	L	5	47	15	d4	0.6	241	BOH02
2001 07 15.12		M	5.6	AA	5.0	B		7	24	5	1.8	230	BEG01
2001 07 15.14		M	5.5	AA	5.0	B		10	18	6			PRI04
2001 07 15.87		B	6.2	AA	20.0	L	8	83	5	4			C0002
2001 07 15.87		S	5.8	AA	5.0	B		10	5	3			C0002
2001 07 15.88	x	B	5.0	TJ	5.0	B		10	10	7	1.0		GUZ
2001 07 15.88	x	B	5.7	TT	5.0	B		7	9	D6			POW01
2001 07 15.88	x	B	6.2	TJ	12.0	R	5	27	15	5			SIE
2001 07 15.89	x	B	5.6	TJ	5.0	B		10	9	5	&0.5		SWI
2001 07 15.89		S	5.3	AA	5.0	B		7	20	3	0.7	233	KOS
2001 07 15.93	x	B	5.4	TJ	3.0	B		8	&10	4			ADA02
2001 07 15.93		S	5.7	TT	5.0	B		7	13	5			SHA02
2001 07 15.93		S	5.8	TT	8.0	B		20	11.9	4	0.9	230	SHA02
2001 07 15.94	x	S	5.7	TJ	8.0	B		10	&16	s5	0.5	225	MAR13
2001 07 15.95	x	B	5.7	S	8.0	B		10	17	d5	1	200	KIS03
2001 07 15.95	x	B	5.9	TJ	8.0	B		10	17	2	&1.4	220	SIK01
2001 07 15.99	x	S	5.9:	TT	15	L	6	45	& 8	5			KEZ
2001 07 16.00		S	5.0	TJ	8.0	B		20	23	6			ST003
2001 07 16.02		S	5.0	TT	0.7	E		1	15	6			SHA02
2001 07 16.04	x	B	5.9	TT	5.0	B		7	&14	4			FIL04
2001 07 16.07		S	4.8	AA	8.0	B		20	15	7			BAR
2001 07 16.11		M	5.7	AA	5.0	B		7	20	6	1.2	232	BEG01
2001 07 16.14		M	5.8	AA	5.0	B		10	15	5			PRI04
2001 07 16.33		S	6.0	AA	3.5	B		7	15.5	3			MOR03
2001 07 16.84	xs	B	6.0	TJ	6.8	R	12	40	& 6	d3	&15 m		CHR
2001 07 16.87	x	M	4.9	TJ	5.0	B		10	8	6	1.0		GUZ
2001 07 16.88	x	B	6.5	TJ	12.0	R	5	27	15	5			SIE
2001 07 16.89	x	B	5.7	TT	5.0	B		7	9	D6			POW01
2001 07 16.89	x	S	5.7	TJ	5.0	B		10	&16	s4/	0.30	227	MAR13
2001 07 16.91	x	S	5.7	AA	5.0	B		10	13	s4			MAR12
2001 07 16.92	x	B	6.0	S	20.5	L	6	37	&13	s5	0.5	220	KIS03
2001 07 16.94		S	5.9	TT	8.0	B		20	10.2	4			SHA02
2001 07 16.95		B	6.1	TJ	5.0	B		7	13	4			CHE03
2001 07 16.95	x	S	6.0	TT	15	L	6	45	14	5	&0.77	217	KEZ
2001 07 16.97	x	B	6.1	TJ	8.0	B		10	21	d3			SIK01
2001 07 17.11		M	6.0	AA	5.0	B		7	8	5	45 m	232	BEG01
2001 07 17.14		M	6.0	AA	5.0	B		10	15	5			PRI04
2001 07 17.86		S	5.7	AA	5.0	B		10		3			C0002
2001 07 17.89	x	B	5.4	TJ	5.0	B		10	10	5	1.3		GUZ
2001 07 17.89		M	5.2	AA	5.0	B		10	15	4/	3	225	SAN07
2001 07 17.92		S	5.6	HD	6.0	B		20	10	6			BAL03
2001 07 17.92		S	6.0	AA	8.0	B		20	10	4			BAR
2001 07 17.95		M	6.5	S	6.0	B		20	8	2			KUB
2001 07 18.00		S	5.5	AA	5.0	B		7	15	4	2.5	222	KOS
2001 07 18.12		M	6.1	AA	5.0	B		7	12	6	1.4	235	BEG01
2001 07 18.14		M	6.3	AA	5.0	B		10	15	5			PRI04
2001 07 18.21		S	6.2	AA	3.5	B		7	14	3			MOR03
2001 07 18.83	xs	B	6.4	TJ	6.8	R	12	40	& 6	d3	&15 m		CHR

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DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 18.87	x	M	5.7	TJ	5.0	B		10	8	5	1.5		GUZ
2001 07 18.87		M	6.2	AA	5.0	B		7	8	5	1.2	235	BEG01
2001 07 18.87		S	5.6	AA	5.0	B		7	15	4	2.4	220	KOS
2001 07 18.88	x	B	6.3	TT	5.0	B		7	&16	3/			FIL04
2001 07 18.88	x	M	5.8	TJ	6.0	B		20	&11	4			ADA02
2001 07 18.89	x	B	6.8	TT	6.6	B		20	&11	4/	&0.33	230	FIL04
2001 07 18.91	x	M	6.3	TT	4.0	B		12	32	3	1.5	269	LEG
2001 07 18.91		S	6.2	TJ	6.0	B		20	17	4	1.2	230	RES
2001 07 18.91	x	S	6.2	TT	15	L	6	45	12.5	4	&0.78	226	KEZ
2001 07 18.91	x	S	6.3	S	5.0	B	6	15	10	d4			KIS03
2001 07 18.91	x	S	6.4	AA	5.0	B		10	13	s3/			MAR12
2001 07 18.91		S	6.5	TJ	40.8	L	5	121	15	4	0.8	230	RES
2001 07 18.92	x	S	6.6	TT	6.0	B		20	&9	4	&0.3	230	SCI
2001 07 18.93	x	B	5.5	TJ	18	L	7	58	&14	3/			WLO
2001 07 18.94	x	B	5.6	TJ	8.0	B		10	&14	d4	&0.20	235	MAR13
2001 07 18.94	x	B	5.9	TT	5.0	B		7	17	s4	0.51	221	MAK02
2001 07 18.94	x	B	6.6	TJ	8.0	B		10	20	4			SIK01
2001 07 18.95	x	B	6.2	TJ	5.0	B		7	14	3/			BOH02
2001 07 18.95	x	B	6.5	TI	6.0	B		20	&10	d4			BAL05
2001 07 18.96		M	6.5	S	6.0	B		20	7.5	3			KUB
2001 07 19.02	x	S	5.7:	TJ	3.5	B		7	&9				RZE
2001 07 19.02	x	S	6.0	TT	4.0	B		8	13	4/			GRA09
2001 07 19.02		S	6.4	TJ	5.0	B		7	12.6	6			ST003
2001 07 19.09		B	6.3	AA	6.3	B	5	9	15	4			NOW
2001 07 19.14		M	6.4	AA	5.0	B		10	12	4			PRI04
2001 07 19.86		S	6.0	AA	5.0	B		10	12	4			C0002
2001 07 19.87	x	B	6.2	TJ	5.0	B		10	10	4			SWI
2001 07 19.88	x	B	5.8	TT	5.0	B		7	10	D5			POW01
2001 07 19.88		M	6.5	AA	5.0	B		7	12	4			BEG01
2001 07 19.89		B	6.3	TJ	5.0	B		7	18	4			CHE03
2001 07 19.89	x	B	7.2:	TJ	6.0	B		20	&10	2/			BAN01
2001 07 19.89	x	M	5.8	TJ	6.0	B		20	&11	4			ADA02
2001 07 19.90	x	B	6.8	TJ	12.0	R	5	27	13	4	0.2	215	SIE
2001 07 19.92	x	B	5.5	TJ	6.0	B		20	&12	3			WLO
2001 07 19.92	x	S	5.8	TJ	5.0	B		10	10	5			GUZ
2001 07 19.93		M	6.3	TJ	10.0	B		20	11	3/	0.3	220	MEY
2001 07 19.95		S	5.7	AA	5.0	B		7	13	4	0.7	220	KOS
2001 07 19.98		S	6.4	TJ	6.0	B		20	15	3	0.5	220	RES
2001 07 20.14		M	6.3	AA	5.0	B		10	12	4			PRI04
2001 07 20.16		S	6.5	AA	3.5	B		7	11	3			MOR03
2001 07 20.86		M	6.7	AA	5.0	B		7	15	3			BEG01
2001 07 20.89	x	B	5.8	TJ	6.0	B		20	&13	3			WLO
2001 07 20.89	x	B	6.5	TT	5.0	B		7	20.5	d4/	0.42	189	MAK02
2001 07 20.90	x	B	6.6	TT	5.0	B		7	&18	3/			FIL04
2001 07 20.90	x	S	6.2	TT	15	L	6	45	10	3	&0.82	215	KEZ
2001 07 20.91	x	B	6.9	TT	6.6	B		20	&14	4	&0.6	225	FIL04
2001 07 20.91	x	B	7.0	TJ	12.0	R	5	27	11	4			SIE
2001 07 20.91		S	6.9	AA	8.0	B		20	10	4			BAR
2001 07 20.92		B	6.4	TJ	5.0	B		7	18	4			CHE03
2001 07 20.92	x	B	6.6	TT	6.0	B		20	&13	4	&0.8	212	SCI
2001 07 20.93		S	6.6	AA	8.0	B		20	13	6			BAR
2001 07 20.96	x	B	6.3	TJ	5.0	B		7	12	3/			BOH02
2001 07 21.10		B	6.7	AA	6.3	B	5	9	14	5			NOW
2001 07 21.86		M	7.0	AA	5.0	B		7	15	2			BEG01
2001 07 21.87		S	6.2	AA	4.2	B		7	13	4			ZAN
2001 07 21.88		M	5.8	TT	5.0	B		10	15	4			LEH
2001 07 21.88		S	6.4	AA	5.0	B		10		3			C0002
2001 07 21.89		S	6.7	TJ	6.0	B		20	12	3/	0.2	230	RES
2001 07 21.91	x	S	6.2	TJ	6.0	B		20	12	3			KID01
2001 07 21.91		S	6.8	SC	8.0	B		20	10	5			BAR
2001 07 21.92		M	6.2	S	6.0	B		20	9	2			KUB
2001 07 21.94		B	6.6	TJ	5.0	B		7	15	4			CHE03
2001 07 21.96		S	5.9	AA	0.0	E		1					ZAN
2001 07 21.98	x	B	7.5:	AA	5.0	B		10	8	2/			MAR12
2001 07 22.13		M	6.4	AA	5.0	B		10	15	4			PRI04

Comet C/2001 A2 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 22.45	x	S	7.2	TK	4.5	R	6	13	9	1			JON
2001 07 22.84		S	5.8	AA	5.0	B		7	12	3	0.5	217	KOS
2001 07 22.85		M	6.9	AA	5.0	B		7	15	3			BEG01
2001 07 22.87		M	5.7	TT	5.0	B		10	18	3/			LEH
2001 07 22.87		S	6.2	AA	4.2	B		7	13	4	0.5	245	ZAN
2001 07 22.90		B	6.6	AA	20.0	L	8	83		4	33	m 225	C0002
2001 07 22.90		S	6.4	TJ	6.0	B		20	12	4			RES
2001 07 22.90		S	6.5	AA	5.0	B		10		4/			C0002
2001 07 22.90	x	S	7.1	TJ	6.0	B		20	12	3			KID01
2001 07 22.92	x	B	6.6	TJ	5.0	B		7	14	S3			SPE01
2001 07 22.92		M	6.5	S	6.0	B		20	9	3			KUB
2001 07 22.92	x	S	6.0	TJ	5.0	B		10	10	3			GUZ
2001 07 22.96		S	5.9	AA	0.0	E		1					ZAN
2001 07 23.01		S	6.2	HS	34.0	L	6	83	12	4	0.33	220	TOT03
2001 07 23.34		S	6.8	AA	3.5	B		7	9	3			MOR03
2001 07 23.61		S	6.5	SC	5.0	B		7	15	6			SOW
2001 07 23.85		S	5.9	AA	5.0	B		7	12	3	0.5	216	KOS
2001 07 23.88		M	6.7	AA	5.0	B		7	10	3			BEG01
2001 07 23.90		B	6.6	TT	5.0	B		10	13.3	3			HAS02
2001 07 23.91		M	6.9	S	6.0	B		20	9	2			KUB
2001 07 23.92		M	6.5	TT	8.0	B		10	15	3			HOR02
2001 07 23.93		S	6.5	TJ	7.0	B		15	20	0			MER05
2001 07 24.00		S	7.0	TT	8.0	B		20	7.7	4			SHA02
2001 07 24.04		S	6.9	TT	5.0	B		7	9	5			SHA02
2001 07 24.83		S	6.7	AA	5.0	B		10		2/			C0002
2001 07 24.90		B	6.7	TT	5.0	B		10	13.3	4			HAS02
2001 07 24.91		S	6.8	TJ	6.0	B		20	10	3			RES
2001 07 24.92		M	6.5	TT	5.0	B		10	15	3			HOR02
2001 07 25.03		S	6.9	TT	5.0	B		7	9	5			SHA02
2001 07 25.03		S	6.9	TT	8.0	B		20	7.8	4			SHA02
2001 07 25.62		S	6.7	HS	4.0	B		7					OOT
2001 07 25.85	x	S	6.7	TJ	5.0	B		10	8	4			SWI
2001 07 25.86	x	S	6.4	TJ	15.0	L	6	48	11	4	0.7		GUZ
2001 07 25.88	x	B	6.0	TJ	6.0	B		20	&12	3			WLO
2001 07 25.88	x	M	6.5	TJ	5.0	B		7	6	2			PAR03
2001 07 25.89	x	B	7.4:	TJ	4.0	B		8	&10	d2/			MAR13
2001 07 25.89		M	6.0	AA	0.0	E		1	15	5			BEG01
2001 07 25.89		M	6.2	AA	5.0	B		7	20	5	80	m 210	BEG01
2001 07 25.89		M	6.3	AA	5.0	B		10	10	s5	1.5	225	SAN07
2001 07 25.91		S	5.9	AA	5.0	B		7	12	3	1.1	212	KOS
2001 07 25.91	x	S	7.2:	AA	5.0	B		10	10	2/			MAR12
2001 07 25.96	x	S	6.9	TT	9	L		50	&14.5	d4/	0.35	200	MAK02
2001 07 26.00	x	S	6.8:	TJ	6.0	B		10					RZE
2001 07 26.01	x	B	8.2	TJ	12.0	R	5	27	10	4			SIE
2001 07 26.34		S	6.6	AA	3.5	B		7	12	3			MOR03
2001 07 26.87	x	B	6.8	TT	20	L	5	50	4.5	d3			POW01
2001 07 26.88	x&	S	6.5	TJ	11	L	7	32	7	d4/			CH001
2001 07 26.89	x	B	6.6	TT	5.0	B		7	5	d3/			POW01
2001 07 26.89	x	B	8.3	TJ	12.0	R	5	27	9	4			SIE
2001 07 26.89		S	6.8	TJ	6.0	B		20	12	3/			RES
2001 07 26.89		S	6.9	HS	10.0	L	6	19	5	3			CSU01
2001 07 26.95		S	8.2	TT	20	R	14	40	4.8	4			SHA02
2001 07 26.96		S	7.0	TT	8.0	B		20	8.3	3			SHA02
2001 07 26.98	x	S	7.1	TT	5.0	B		7	&18	d4			MAK02
2001 07 27.63	s	S	7.1	HD	10.0	R		16	14	3			END
2001 07 27.79	x	S	7.4	S	6.0	B		20	&10	d4			BAL05
2001 07 27.87		M	7.2	TT	8.0	B		10	12	3/			HOR02
2001 07 27.89		M	6.2	AA	5.0	B		10	13	s4	1	230	SAN07
2001 07 27.90		S	6.9	TJ	6.0	B		20	10	3/			RES
2001 07 27.90	x	S	7.6	TJ	6.0	B		20	9	2			KID01
2001 07 27.92		M	7.3	S	6.0	B		20	6	3			KUB
2001 07 27.93	x	B	6.3	TJ	6.0	B		20	&10	3			WLO
2001 07 27.94	x	S	7.3	TT	15	L	6	45	6	1/			KEZ
2001 07 27.97	x	B	8.6	TJ	25	L	5	47	8	d4	0.4	241	BOH02
2001 07 27.97		S	7.2	TT	10	B		14	11.1	4	0.25	330	SHA02

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DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 27.98			S 7.1	TT	8.0	B		20	10.7	5			SHA02
2001 07 28.02	x		S 7.7	TJ	8.0	B		20	12	s2/			SPE01
2001 07 28.14			M 7.0	AA	5.0	B		10		2			PRI04
2001 07 28.68		s	S 7.0:	HD	7.6	R		16	&15	3			END
2001 07 28.68	x		S 7.0	TJ	5.0	B		12	15	3			NAG08
2001 07 28.81	x		S 7.6	S	6.0	B		20	&10	d4			BAL05
2001 07 28.84			M 7.2	AA	5.0	B		7	10	2			BEG01
2001 07 28.87	x		S 6.6	TJ	5.0	B		10	8	4			GUZ
2001 07 28.89			S 7.3	TJ	6.0	B		20	9	3			RES
2001 07 28.89	x		S 7.4	TJ	6.0	B		20	11	2			KID01
2001 07 28.90	x		B 6.5	TJ	6.0	B		20	&10	3			WLO
2001 07 28.91	x		B 8.0	TJ	5.0	B		10	10	3			OSS
2001 07 28.91			S 6.2	AA	5.0	B		7	10	2			KOS
2001 07 28.91			S 7.9	S	10	B		25	8	2			KUB
2001 07 28.92	x		S 7.8	TJ	5.0	B		10	6	2			MAR12
2001 07 28.93	x		S 6.8	TT	5	R	6	20	&15	3/			GRA09
2001 07 28.93	x		S 7.3	TT	15	L	6	45	9	1	&0.42	211	KEZ
2001 07 28.93	x		S 7.7:	TT	6.7	B		20	& 6	2			SCI
2001 07 28.94			B 7.3	TJ	5.0	B		7	11	4			CHE03
2001 07 28.94	x		B 7.8	TT	6.6	B		20	& 7	3/	0.13	200	FIL04
2001 07 28.95	x		M 7.2	TJ	6.0	B		20	& 8	4			ADA02
2001 07 28.96	x		B 7.8	S	20.5	L	6	37	9	d2/			KIS03
2001 07 28.96	x		M 6.8	TJ	8	R	7	35	9	s4/			KWI
2001 07 28.97	x		S 7.6	TJ	8.0	B		20	12	s3			SPE01
2001 07 28.99			M 7.2	TT	8.0	B		10	14	3/			HOR02
2001 07 28.99	x		S 6.8	TJ	15.0	L	6	48	9	4/	0.5		GUZ
2001 07 28.99	x		S 8.0	TJ	20.5	L	6	37	& 9	s2/			MAR13
2001 07 28.99	x		S 9.1	TT	12.0	L	7	50	7	3	0.35	195	LEG
2001 07 29.01	x		B 8.2	TJ	12.0	R	5	27	10	4			SIE
2001 07 29.01	x		S 7.9	TT	21	L	8	52	6	4			PAC03
2001 07 29.02	x		S 7.8	TT	5.0	B		20	5	3			PAC03
2001 07 29.09			M 7.2	AA	5.0	B		10	10	2			PRI04
2001 07 29.82	xs		B 7.9	TJ	6.8	R	12	40	& 5	d3			CHR
2001 07 29.85	x		S 7.0	TJ	5.0	B		10	8	3			GUZ
2001 07 29.85			S 7.4	AA	5.0	B		7	8	2			BEG01
2001 07 29.86	x		S 6.9	TT	20	L	5	30	5	d2/			POW01
2001 07 29.87	x		M 7.3	TJ	6.0	B		20	& 8	3			ADA02
2001 07 29.87	x		S 6.7	TT	5.0	B		7	5	d2/			POW01
2001 07 29.88	x		S 6.7	TT	6.0	B		20	5	d2/			POW01
2001 07 29.89			S 7.5	TJ	6.0	B		20	9	2/			RES
2001 07 29.89	x&		S 6.1	TJ	11	L	7	32	7	d3			CHO01
2001 07 29.90	x		B 8.2	TJ	14.0	R	9	35	9	4			SIE
2001 07 29.92	x	0	8.0:	TJ	25	L	5	50	& 4	d3			SKR
2001 07 29.92	x		S 8.6:	TT	6.7	B		20	& 3	2			SCI
2001 07 29.94			S 7.7	TT	33	L	5	45	5.0	3			SHA02
2001 07 29.95			B 7.8	TJ	5.0	B		7	10	3			CHE03
2001 07 29.95	x		M 7.3	TJ	8	R	7	35	7	4			KWI
2001 07 29.96	x		B 6.7	TJ	6.0	B		20	&10	3			WLO
2001 07 29.96			S 7.2	TT	8.0	B		20	10.9	3			SHA02
2001 07 29.98	x		B 7.9	S	5.0	B		15	9	d2			KIS03
2001 07 29.98	x		S 8.1	TJ	5.0	B		15	&10	s2			MAR13
2001 07 29.99			S 6.8	AA	5.0	B		7	10	2			KOS
2001 07 30.00			S 6.9	AA	5.0	B		20	10	3			DIE02
2001 07 30.03			M 6.6	AA	5.0	B		10	12	3	50	m 215	SAN07
2001 07 30.05			S 8.4	S	20.0	L	8	83	2.7	3			COO02
2001 07 30.68	x		S 7.2	TJ	8.0	B		11	14	3/			NAG08
2001 07 30.84	x		S 7.5	TJ	5.0	B		10	8	3			GUZ
2001 07 30.87	x		S 7.3	TJ	5.0	B		10	& 6				SWI
2001 07 30.88			M 7.0	TT	10	B	4	25	9	3/			LEH
2001 07 30.89	x		B 9.7:	TJ	6.0	B		20	& 3	0/			BAN01
2001 07 30.90	x		M 6.8	TJ	6.0	B		20	5	3			PAR03
2001 07 30.91	x		S 8.8:	TT	6.7	B		20	& 3	2			SCI
2001 07 30.91	x		S 9.4	TT	12.0	L	7	50	9	2			LEG
2001 07 30.96	x		S 8.1	TT	9	L		50	& 9	d3/			MAK02
2001 07 30.97	x		B 8.3	TJ	5.0	B		15	& 8	s2			MAR13

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DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 07 30.98	x	B	7.0	TJ	6.0	B		20	& 8	3			WLO
2001 07 30.98	x	S	7.5	TT	15	L	6	45	7.5	1			KEZ
2001 07 30.98	x	S	8.0	TJ	5.0	B		10	6	2/			MAR12
2001 07 30.99	x	S	7.9	S	5.0	B		15	9	d2			KIS03
2001 07 31.00		M	7.3	TT	8.0	B		10	13	3/			HOR02
2001 07 31.00	x	S	6.7	TT	5.0	B		10	10	1	0.5	203	KEZ
2001 07 31.02		B	7.2	S	5.0	B	4	7	10	4	0.50	225	KOU
2001 07 31.02	x	S	7.6	TJ	8.0	B		20	9	d2			SPE01
2001 07 31.28		S	7.3	AA	3.5	B		7	11	2			MOR03
2001 07 31.80	x	M	7.2	TT	3.5	B		7	10	2			YOS02
2001 07 31.85	x	S	7.6	TJ	15.0	L	6	48	7	2			GUZ
2001 07 31.85	x	S	8.2	TJ	25	L	6	54	4	3			SWI
2001 07 31.88	x	[9.3	TJ	6.0	B		20					BAN01
2001 07 31.94		S	7.9	TJ	8.0	B		20	4.0	3			STO03
2001 07 31.97		S	7.8	TJ	6.0	B		20	6	2/			RES
2001 07 31.98		S	7.6	TT	10	B		14	8.3	3			SHA02
2001 08 01.05		M	7.2	TT	8.0	B		10	12	3			HOR02
2001 08 01.85	x	B	9.3:	TJ	6.0	B		20	& 6	0			BAN01
2001 08 01.85	x	S	7.6	TJ	15.0	L	6	81	9	2			GUZ
2001 08 01.88		S	7.5	TI	5.0	B		7	7	2/			KYS
2001 08 01.89	x	S	8.1	TJ	14	L	6	46	& 5	2			ADA02
2001 08 01.90		S	7.6	TT	33	L	5	45	2.3	2			SHA02
2001 08 01.90	x	S	8.6:	TT	6.7	B		20	& 3	2			SCI
2001 08 01.91	x	S	8.3	TT	12.0	L	7	50	11	1			LEG
2001 08 01.92	x	S	8.2	TT	10.0	B		25	& 7	2/			FIL04
2001 08 01.94	x	S	8.6:	TJ	15.0	L	5	44	5	d2			SPE01
2001 08 01.95		S	7.5:	TJ	5.0	B		7	8	3			CHE03
2001 08 01.96		S	7.6:	HV	7.0	B		10	7	2			KOP
2001 08 01.99		S	7.9	TJ	6.0	B		20	6	3			RES
2001 08 02.00		S	7.2	HV	7.0	R	7	15	12	3			GRA04
2001 08 02.01	K	6.9	HS	8.0	B			12	15	3			BAR06
2001 08 02.01	M	7.0	HS	8.0	B			12	15	3			BAR06
2001 08 02.03	x	B	7.9	S	5.0	B		15	9	s2			KIS03
2001 08 02.03	x	S	7.7	TT	15	L	6	45	7	1			KEZ
2001 08 02.03	x	S	7.9	TJ	4.0	B		10	9	2/			MAR12
2001 08 02.04	x	S	8.3:	TJ	5.0	B		10	& 8	s2			MAR13
2001 08 02.07		M	7.4	TJ	15.6	L	5	24	9	4			BOU
2001 08 02.77	x	S	8.0	TJ	10.0	B		20	8	2/			NAG08
2001 08 02.83	x	S	7.7	TJ	15.0	L	6	48	7	1			GUZ
2001 08 02.85	x	S	7.6	TT	20	L	5	30	3	d2			POW01
2001 08 02.88	x	[9.7	TJ	6.0	B		20					BAN01
2001 08 02.90	x	S	8.8:	TT	6.7	B		20	& 3	1/			SCI
2001 08 02.92		M	7.7	TT	10	B	4	25	4	3/			LEH
2001 08 02.93		S	7.7	TJ	5.0	B		7		3			CHE03
2001 08 03.02		S	7.1:	HS	8.0	B		12	14	3			BAR06
2001 08 04.95		S	8.0:	TJ	12.0	R	5	32	5	4			CHE03
2001 08 05.83	x	S	9.7	TT	20	L	5	50	2.2	d1/			POW01
2001 08 05.84		M	7.6	TT	8.0	B		10	10	3			HOR02
2001 08 05.85		M	8.2	TT	10	B	4	25	7	3			LEH
2001 08 05.86		S	7.1	TI	20.0	T	10	80	7	2			CRE02
2001 08 05.90	x	B	7.5:	TJ	15	L	6	45	& 8	3/			WLO
2001 08 05.97		S	8.1	TJ	6.0	B		20	4	3			RES
2001 08 06.02	x	S	8.6:	TT	15	L	6	45	6	1			KEZ
2001 08 06.78	xs	S	9.3	TJ	35	L	6	105	& 3	d2			CHR
2001 08 06.82		S	7.4	AA	5.0	B		7	6	1			KOS
2001 08 06.83		M	7.7	TT	8.0	B		10	11	3			HOR02
2001 08 06.85	x	S	8.5	TT	15	L	6	45	5.5	1			KEZ
2001 08 06.86	x	S	9.5:	AA	10	M	10	56	4	1			MAR12
2001 08 06.89		S	8.7	TI	10	R	5	25	3	2/			MAR02
2001 08 06.90		M	7.6	HS	8.0	B		12	12	2/			BAR06
2001 08 06.90	x	S	9.2:	TT	6.7	B		20	& 2	1			SCI
2001 08 06.97		S	7.6	TJ	7.0	R	7	15	9.5	1			GRA04
2001 08 07.80	xs	S	9.4	TJ	35	L	6	105	& 3	d2			CHR
2001 08 07.82		S	7.4	AA	5.0	B		7	8	1			KOS
2001 08 07.82	x	S	8.3	TJ	5.0	B		10	5	4			GUZ

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DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 07.82	K	S	7.6	HS	8.0	B		12	15	2/			BAR06
2001 08 07.83		M	7.7	TT	8.0	B		10	10	3			HOR02
2001 08 07.87		B	8.0	TT	5.0	B		10	6.6	3			HAS02
2001 08 07.87	x	S	8.4	TT	15	L	6	45	6.5	1/			KEZ
2001 08 07.90		S	8.3	TJ	6.0	B		20	3	3			RES
2001 08 07.95		S	8.8	TI	10	R	5	25	4	2			MAR02
2001 08 07.95		S	8.1	TJ	20.3	T	10	62	7.5	2			GRA04
2001 08 08.10		S	9.6	AC	15	R	5	42	4.5	2			MOR03
2001 08 08.42		S	8.7	AA	10.0	B		25					SEA
2001 08 08.47	x	S	8.4	TJ	32.0	L	5	58	7	3			NAG08
2001 08 08.52		S	8.9	TJ	20	L	7	45	4.0	3			MAT08
2001 08 08.81	x	S	8.3	TJ	5.0	B		10	5	3			GUZ
2001 08 08.81	xs	S	9.5	TJ	35	L	6	105	& 2	d2			CHR
2001 08 08.84		S	7.6	AA	5.0	B		7	4	0			KOS
2001 08 08.88		S	8.0	TK	5.0	B		7	5	3			BIV
2001 08 08.88		S	8.7	S	20.0	L	8	83	2.0	2			C0002
2001 08 08.89		M	8.2	S	6.0	B		20	10	1			KUB
2001 08 08.90		S	8.8	TT	20.0	L	4	42	7	2/			SCH04
2001 08 08.91		S	8.8:	TK	20.3	L	6	48	5	2	0.2	185	BIV
2001 08 09.80	xs	S	9.7	TJ	35	L	6	105	& 2	d2			CHR
2001 08 09.83	x	S	8.4	TJ	15.0	L	6	48	4	3			GUZ
2001 08 09.89	x	S	9.0:	TJ	10	M	10	56	5	1			MAR12
2001 08 09.90		S	8.4	TK	25.6	L	5	42	6	2	0.15	180	BIV
2001 08 09.90		S	8.5	TJ	6.0	B		20	3	3			RES
2001 08 09.90	x	S	9.2	TJ	12.0	R	5	27	7	2			SIE
2001 08 09.91		S	8.2	TK	5.0	B		7	6	3			BIV
2001 08 09.92		S	8.6:	TJ	10	B		14	7.4	2			SHA02
2001 08 09.93	x	S	8.8	TJ	15	L	6	45	6	1/			KEZ
2001 08 10.50		S	8.8	AA	10.0	B		25	3	3			SEA
2001 08 10.82	x	S	8.6	TJ	15.0	L	6	48	4	3			GUZ
2001 08 10.85		M	8.4	TT	10	B	4	25	6	3			LEH
2001 08 10.86		S	8.2	AA	4.2	B		7	8	1			ZAN
2001 08 10.89		S	8.4	TK	25.6	L	5	42	6	3	0.1	180	BIV
2001 08 10.90		S	8.3	TJ	8.0	B		15	7.5	2			BOU
2001 08 10.90		S	8.5	TJ	30.5	T	10	56	9	3			COM
2001 08 10.90		S	8.6	TJ	6.0	B		20	3	2/			RES
2001 08 10.91		S	8.3	TK	5.0	B		7	6	2			BIV
2001 08 11.11		S	9.4	AC	15	R	5	42	4	2			MOR03
2001 08 11.80		S	8.8	S	20.0	L	8	83	2.5	1/			C0002
2001 08 11.83		M	7.9	TT	8.0	B		10	11	2/			HOR02
2001 08 11.83		M	8.4	TT	10	B	4	25	7	3			LEH
2001 08 11.90		S	8.8	TT	44.0	L	5	156	3.2	4			HAS02
2001 08 11.91		B	8.8	TT	10.0	B		25	3.2	4			HAS02
2001 08 11.92	x	B	8.4	TJ	15	L	6	45	& 6	3			WLO
2001 08 11.92		S	8.6	TK	25.6	L	5	42	5	2			BIV
2001 08 11.94		S	8.4	TK	5.0	B		7	6	2			BIV
2001 08 12.02	x	S	8.4	TT	21	L	8	52	4	3			PAC03
2001 08 12.29		S	8.3	TK	5.0	B		10	6.0	2	6	m 185	LIN04
2001 08 12.61		S	9.3	TJ	20	L	7	45	4.0	3			MAT08
2001 08 12.61	x	S	9.1	TJ	32.0	L	5	58	6	3			NAG08
2001 08 12.81		M	7.9	TT	8.0	B		10	10	2/			HOR02
2001 08 12.82	x	S	10.0	TT	20	L	5	50	4.3	d1/			POW01
2001 08 12.83		M	7.5	HS	5.0	B		10	10	2			SAN07
2001 08 12.83		M	8.5	TT	10	B	4	25	7	3			LEH
2001 08 12.83	x	S	9.0:	TJ	10	M	10	33	3	1			MAR12
2001 08 12.83	xs	S	10.1	TJ	35	L	6	150	& 2	d1/			CHR
2001 08 12.84	x	M	9.5:	TJ	31.7	L	5	78	& 3	3			ADA02
2001 08 12.85		M	8.5	S	6.0	B		20	6	1			KUB
2001 08 12.86		S	8.1	AA	5.0	B		7	4	1			KOS
2001 08 12.88	x	S	9.0	TJ	25	L	6	54	4	3			SWI
2001 08 12.90	x	S	8.9	TT	10.0	B		25	& 4	1/			FIL04
2001 08 12.91	x	S	8.2	TJ	6.0	B		20	4	3			PAR03
2001 08 12.91	x	S	8.8	S	15	L	6	45	5.5	1			KEZ
2001 08 12.97	x	S	9.0	TJ	5.0	B		10	3	2			GUZ
2001 08 13.08		S	9.5	AC	15	R	5	42	4	3			MOR03

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DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 13.58	x	M	9.3	TT	10.0	B		26	5	3			TSU02
2001 08 13.58	x	S	9.1	TJ	32.0	L	5	58	5	4			NAG08
2001 08 13.87		S	8.3	AA	5.0	B		7	4	1			KOS
2001 08 13.87		S	8.6	TJ	10.0	B		20	6.5	2			MEY
2001 08 13.89		S	9.2	TT	10	B		14	6.1	2			SHA02
2001 08 13.90		S	8.5	TJ	30.5	T	10	75	3.7	3			KAM01
2001 08 13.91	x	S	8.9	TJ	8	R	7	35	3	2			KWI
2001 08 13.96		S	8.3	AA	15.0	R	8	30	6	3			DIE02
2001 08 14.08		S	9.7	AC	15	R	5	42	4	2			MOR03
2001 08 14.42		S	9.0	AA	10.0	B		25					SEA
2001 08 14.49	x	S	9.2	TT	10.0	B		20	4	3			YOS02
2001 08 14.80	xs	S	10.4	TJ	35	L	6	105	& 2	d1/			CHR
2001 08 14.82		M	7.7	HS	5.0	B		10	10	1			SAN07
2001 08 14.84		M	8.9	TT	10	B	4	25	6	3			LEH
2001 08 14.86		M	8.1	TT	8.0	B		10	9	2/			HOR02
2001 08 14.86		M	8.7	TT	10	B		25	6	3			ZNO
2001 08 14.87		S	8.6	TJ	10.0	B		20	6	2			MEY
2001 08 14.88		S	8.9	TJ	41	L	5	121	4	2/			RES
2001 08 14.89	x	S	8.4	TT	4.0	B		12	11	2			LEG
2001 08 14.89		S	8.7	TT	33	L	5	45	4.9	1			SHA02
2001 08 14.89		S	9.0	TK	20.3	L	6	48	4.5	2			BIV
2001 08 14.89		S	9.3	TT	20.0	L	4	42	6	1			SCH04
2001 08 14.90		B	9.0:	TK	5.0	B		7	6	2			BIV
2001 08 14.90		S	8.7	TJ	15.6	L	5	24	6	2/			BOU
2001 08 14.90	x	S	8.8	S	15	L	6	45	5	1			KEZ
2001 08 14.90	x	S	9.2:	TJ	15.0	L	5	75	4	d1			SPE01
2001 08 14.91		M	8.8	TJ	15.6	L	5	24	5.5	2/			DIJ
2001 08 14.92		S	8.3	AA	15.0	R	8	30	6	3			DIE02
2001 08 14.92		S	9.1	TI	21	L	6	55	3	2			MAR02
2001 08 14.93	x	B	9.8	TJ	25	L	5	47	7	2/			BOH02
2001 08 14.93		M	8.4	HS	10.0	L	10	80	6	3			SAN07
2001 08 14.93		S	8.5	HS	34.0	L	6	83	4	3			TOT03
2001 08 14.93	x	S	10.0:	TJ	25	T	10	80	2	1			MAR12
2001 08 14.94		S	8.6	TJ	30.5	T	10	56	8	2/			COM
2001 08 14.95	x	S	8.5	TJ	10.0	B		25	6	3			WAL03
2001 08 14.96		S	8.6	AA	5.0	B		7	3	0			KOS
2001 08 15.34		S	9.9	AC	15	R	5	42	3.5	2			MOR03
2001 08 15.72	x	S	9.3	TJ	32.0	L	5	58	4	3			NAG08
2001 08 15.82		M	9.0	TT	10	B	4	25	5	3			LEH
2001 08 15.82	xs	S	10.4	TJ	35	L	6	105	& 2	d1/			CHR
2001 08 15.84	x	S	9.0:	TJ	20.5	L	6	37	& 4	s1			MAR13
2001 08 15.86	x	S	8.5:	TJ	20	L	6	37	4	2			MAR12
2001 08 15.86	x	S	10.1	HS	12.0	L	7	50	7	3			LEG
2001 08 15.87		S	8.7	TJ	10.0	B		20	8	2			MEY
2001 08 15.88		M	8.9	TT	10	B		25	6	2			ZNO
2001 08 15.88		S	8.6	A	15.0	R	8	30	6	2			DIE02
2001 08 15.88	x	S	9.5:	TJ	6.0	B		20	& 5	1			KID01
2001 08 15.89	x	B	9.9:	TJ	25	L	5	47	7	d2/			BOH02
2001 08 15.89	x	S	9.2:	TJ	15.0	L	5	44	4.4	d1			SPE01
2001 08 15.89	x	S	9.5	TJ	20	L	5	66	3	1			KID01
2001 08 15.89	x	S	9.9	TT	21	L	8	52	3	3/			PAC03
2001 08 15.90		S	8.6	HS	25.4	T	6	64	6	2			HOE
2001 08 15.90		S	8.7	HS	12	L	7	50	8	3			PIL
2001 08 15.91	x	B	8.8	TJ	18	L	7	58	& 5	2/			WLO
2001 08 15.92	x	S	9.4	TJ	20.0	L	5	28	4	3			GUZ
2001 08 15.93	x	S	7.5	TJ	10.0	B		25	11	3			WAL03
2001 08 15.94	x	S	9.0	TJ	20.5	L	6	37	6	s1/			KIS03
2001 08 15.95		M	8.3	TT	8.0	B		10	10	2			HOR02
2001 08 15.95		S	8.7	TJ	41	L	5	121	6	2/			RES
2001 08 15.97	x	S	8.5	TJ	6.0	B		20	4	2			PAR03
2001 08 15.98		S	7.9	HS	5.0	B		10	8	0/			SAN07
2001 08 15.99	x	B	10.4	TT	33.0	L	6	50	& 5	1/			FIL04
2001 08 16.00		M	8.6	HS	10.0	L	10	80	6	1/			SAN07
2001 08 16.18		S	9.2:	TT	25.4	L	4	44	& 5	0/			GRE
2001 08 16.60		S	9.3	TJ	25.4	T	6	32	7	1			YOS04

Comet C/2001 A2 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 16.74		S	8.6	HS	8.0	B		12	11	2			BAR06
2001 08 16.74		S	8.8	HS	11	L	7	50	14	3			BAR06
2001 08 16.82		M	9.1	TT	10	B	4	25	6	3/			LEH
2001 08 16.82	xS	S	10.5	TJ	35	L	6	105	& 2	d1/			CHR
2001 08 16.85	x	S	9.5:	TJ	14	L	6	46	& 3	2			ADAO2
2001 08 16.85	x&	S	9.7	TJ	11	L	7	32	7	d0			CH001
2001 08 16.86	x	S	9.2	TJ	15.0	L	6	48	4	3			GUZ
2001 08 16.86	x	S	9.5	TJ	21	L	6	37	3	2			MAR12
2001 08 16.87	x	S	9.4:	TJ	15.0	L	5	44	4.5	d1			SPE01
2001 08 16.88	x	S	9.2:	TJ	20.5	L	6	68	& 5	s1/			MAR13
2001 08 16.88		S	9.3	TJ	41	L	5	121	5	2			RES
2001 08 16.88	x	S	9.5	TJ	25	L	6	54	4	2			SWI
2001 08 16.89		S	9.1	TK	5.0	B		7	6	1			BIV
2001 08 16.89		S	9.1	TK	20.3	L	6	48	5	2			BIV
2001 08 16.90		S	9.4	TT	20.0	L	4	42	7	2			SCH04
2001 08 16.91	x	S	8.2	TJ	10.0	B		25	8	2			WAL03
2001 08 16.93	x	B	10.0	TJ	25	L	5	47	5	1/			BOH02
2001 08 16.93		M	8.4	TT	8.0	B		10	9	2			HOR02
2001 08 16.93		S	9.4	TT	10	B		14	8.1	1			SHAO2
2001 08 16.93	x	S	10.5	HS	12.0	L	7	50	4	1			LEG
2001 08 16.95	x	B	9.1	TJ	20.5	L	6	56	5	s1/			KIS03
2001 08 16.95		S	8.9	TJ	31.0	J	6	58	7	2/			DIJ
2001 08 16.95		S	9.0	TJ	31.0	J	6	58	5.5	3/			BOU
2001 08 17.01	x	S	8.8	TJ	10.0	M	10	20	3	2			PAR03
2001 08 17.75	x	S	9.4	TJ	32.0	L	5	58	4	2			NAG08
2001 08 17.80	xS	S	10.7	TJ	35	L	6	105	& 2	d1			CHR
2001 08 17.84		S	8.5	TT	8.0	B		10	9	2			HOR02
2001 08 17.86	x	S	9.3	TJ	15.0	L	6	81	4	3			GUZ
2001 08 17.89		S	8.9	AA	5.0	B		7	3	0			KOS
2001 08 17.89	x	S	10.3	HS	10.0	B		25	5	1			LEG
2001 08 17.91		S	9.3	TT	25.0	L	9	50	8	2			SCH04
2001 08 17.92	x	B	10.3	TJ	25	L	5	47	3.3	2/			BOH02
2001 08 17.93		S	9.0	HS	11	L	7	50	12	2			BAR06
2001 08 17.94		S	8.9	TJ	31.0	J	6	46	6	3			DIJ
2001 08 17.94		S	9.1	TJ	31.0	J	6	46	5.5	3			BOU
2001 08 17.99		S	8.9	TJ	7.0	R	7	24	7	1			GRA04
2001 08 17.99		S	9.0	TJ	20.3	T	10	62	6	1/			GRA04
2001 08 18.01		S	9.3	TK	25.6	L	5	42	6	2			BIV
2001 08 18.02		S	9.0	TJ	30.5	T	10	56	& 7	2			COM
2001 08 18.03		S	9.2	TK	5.0	B		7	7	1			BIV
2001 08 18.04		S	9.1	NP	7.0	B		10	8	1			MAR02
2001 08 18.08		S	10.0	AC	15	R	5	42	4	2			MOR03
2001 08 18.82	x	B	10.5:	TJ	25	L	5	47	5	3			BOH02
2001 08 18.82	xS	S	11.1	TJ	35	L	6	105	& 1.5	d1			CHR
2001 08 18.83		M	9.5	TT	10	B	4	25	3.5	3			LEH
2001 08 18.83		S	8.9	TI	12	L	7	50	8	2/			PIL
2001 08 18.83	x	S	9.4	TJ	10.0	B		25	5	2			WAL03
2001 08 18.85	x	S	10.3	TT	12.0	L	7	50	10	2			LEG
2001 08 18.86	x	S	9.5	TJ	15.0	L	6	48	4	2			GUZ
2001 08 18.86	x	S	10.0:	TJ	20.5	L	6	75	2	1/			MAR12
2001 08 18.88		S	9.9	TI	10.0	B		25	6	2/			PIL
2001 08 18.89		S	8.6	TT	8.0	B		10	9	1/			HOR02
2001 08 18.92		S	8.9	NP	10	R	5	25	10	D2			MAR02
2001 08 18.92	x	S	9.4:	TJ	15	L	6	45	& 3.5	1			KEZ
2001 08 18.94	x	B	10.5:	TI	20.5	L	6	56	& 4	s1			KIS03
2001 08 18.94		S	9.3	HS	11	L	7	50	9	3			BAR06
2001 08 18.95		S	8.7	TJ	7.0	R	7	24	10	1/			GRA04
2001 08 19.78	xS	S	11.3	TJ	35	L	6	105	& 1.5	d1			CHR
2001 08 19.80	x	S	10.2	TT	20	L	5	50	2.5	d1			POW01
2001 08 19.85		S	10.9	TI	12	L	7	50	2.3	2			PIL
2001 08 19.86	x	S	8.9	TJ	10.0	B		25	7	2/			WAL03
2001 08 19.87		M	9.5	TT	10	B		25	4	2			ZNO
2001 08 19.87	x	S	9.8	TT	12.0	L	7	50	3	2			LEG
2001 08 19.89	x&	S	10.0	TJ	25	L	5	54	2	d0			CH001
2001 08 19.90		S	8.8	TT	8.0	B		10	8	1/			HOR02

Comet C/2001 A2 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 19.91		S	9.1	NP	10	R	5	25	10	D3			MAR02
2001 08 19.91		S	9.4	TT	20.0	L	4	42	6	2			SCH04
2001 08 19.92	x	B	10.0	TJ	25	L	5	47	& 7	2/			BOH02
2001 08 20.00	x	S	10.5	TT	30	L	4	96	4	2			GRA09
2001 08 20.07		S	9.4	TJ	25.4	J	6	47	5	2/			BOU
2001 08 20.82	xs	S	11.9	TJ	35	L	6	150	& 1	d1			CHR
2001 08 20.83		S	10.2	TT	10.0	B		25	1.5	3			HAS02
2001 08 20.85	x	S	9.8	TJ	15.0	L	6	48	4	2			GUZ
2001 08 20.87		S	10.2	AC	41	L	5	121	3.5	1			RES
2001 08 20.88	x&	S	10.5	TJ	25	L	5	54	1.5	d0			CH001
2001 08 20.90		S	9.2	NP	10	R	5	25	7	2			MAR02
2001 08 20.93		S	9.3	TJ	30.5	T	10	56	6	2			COM
2001 08 20.95	x	S	9.4	TJ	10.0	B		25	6	2			WAL03
2001 08 20.96	x	B	10.1	TJ	25	L	5	47	6	2			BOH02
2001 08 20.96	x	S	11.4	HS	12.0	L	7	50	3.2	2			LEG
2001 08 21.01		S	10.6	TT	25	L	5	47	4.6	1			PIL
2001 08 21.83		S	10.2	AC	41	L	5	121	3	1			RES
2001 08 21.90		S	9.1	NP	10	R	5	25	7	1			MAR02
2001 08 21.92	x	B	10.1:	TJ	25	L	5	47	3.5	3			BOH02
2001 08 21.93	x	B	9.2:	TJ	18	L	7	58	& 4	2			WLO
2001 08 22.55	x	S	9.6	TT	10.0	B		20	3.5	1			YOS02
2001 08 22.70	x	S	9.8	TJ	32.0	L	5	58	3.6	2			NAG08
2001 08 22.86	x	S	10.0	TJ	15.0	L	6	48	4	2			GUZ
2001 08 22.87	x	S	10.1	TT	10.0	B		25	& 5	1/			FIL04
2001 08 22.89		S	9.8	TT	12	L	7	50	4.6	3			PIL
2001 08 22.94		S	9.3	TI	21	L	6	55	5	2			MAR02
2001 08 22.94		S	10.2	AC	41	L	5	121	3	1			RES
2001 08 22.97	x	S	10.4	TT	20.6	L	8	100	2.4	4			PAC03
2001 08 23.58		S	[10.0	TJ	25.4	T	6	32	! 4				YOS04
2001 08 23.85	x	S	9.6:	TJ	25	L	5	66	& 3	1			KID01
2001 08 23.91	x	B	9.5:	TJ	18	L	7	58	& 3.5	2			WLO
2001 08 23.93	x	S	10.1	TT	30	L	4	47	5.5	2			GRA09
2001 08 23.93		S	10.5	TJ	41	L	5	121	2.5	1			RES
2001 08 23.96	x	S	10.3	TJ	25	L	5	47	3.5	1/			BOH02
2001 08 23.97		M	9.4	TT	10	B	4	25	3	3			LEH
2001 08 23.97	x	S	9.8	TJ	10.0	B		25	4	1/			WAL03
2001 08 23.99	x&	S	11.5	TT	11	L	8	46	2	1/			POW01
2001 08 23.99	x&	S	11.5	TT	11	L	8	46	2	1/			BURO4
2001 08 24.17		S	12.2	AC	44.5	L	4	80	1.6	2			MOR03
2001 08 24.80	xs	S	12.5	TJ	35	L	6	150	& 0.5	d0/			CHR
2001 08 24.83		M	9.6	TT	10	B	4	25	2.5	3			LEH
2001 08 24.85	x	S	10.1	TJ	15.0	L	6	48	4	2			GUZ
2001 08 24.86	x	S	11.5:	TJ	31.7	L	5	150	& 1	3			ADA02
2001 08 24.89	x	S	10.3	TJ	25	L	5	47	5	2			BOH02
2001 08 24.91	x	S	9.8	TJ	15	L	6	45	3	2/			KEZ
2001 08 24.92		S	9.8	AC	6.3	R	13	52	3	0			KOS
2001 08 24.92		S	10.1	TJ	41	L	5	121	2.5	1			RES
2001 08 24.93		S	10.1:	HS	11	L	7	50	5	1			BAR06
2001 08 24.96	x	S	9.3	TJ	10.0	M	10	20	3	2			PAR03
2001 08 25.02		S	10.2:	TK	20.3	L	6	48	2.5	2			BIV
2001 08 25.06		S	12.8	AC	44.5	L	4	167	1.0	2			MOR03
2001 08 25.82	xs	S	12.7	TJ	35	L	6	150	& 0.5	d0/			CHR
2001 08 25.85		M	10.1	TT	42	L	5	66	3	3			LEH
2001 08 25.85	x	S	10.6	TJ	15.0	L	6	81	3	3			GUZ
2001 08 25.87		S	10.2	TJ	41	L	5	121	2.5	1			RES
2001 08 25.89	x&	S	11.0	TJ	25	L	5	54	1.5	d0			CH001
2001 08 25.90		S	10.0	AC	6.3	R	13	52	3	0			KOS
2001 08 25.91		S	10.8	HS	34.0	L	6	83	4	2			TOT03
2001 08 25.93		M	9.5	TT	35	L	5	68	3.5	2			HOR02
2001 08 25.94	x	S	10.0:	TJ	15	L	6	200	& 2.5	1/			KEZ
2001 08 25.95		S	11.0	TT	25.4	T	10	102	3	2/			DES01
2001 08 25.96		S	10.2:	HS	11	L	7	50	5	1			BAR06
2001 08 25.98		M	10.4	AA	25	L	4	54	1.4	3			SHU
2001 08 26.02		S	10.5	TK	20.3	L	6	48	2.5	2			BIV
2001 08 26.80		S	12.2	NP	30	L	5	60	2	2			NEV

Comet C/2001 A2 (LINEAR) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 26.83		M	10.4	TT	42	L	5	66	2.5	3			LEH
2001 08 26.85	xs	S	12.8	TJ	35	L	6	150	& 0.5	d0/			CHR
2001 08 26.86	x	S	11.2	TJ	15.0	L	6	81	3	2			GUZ
2001 08 26.87		S	10.2	TJ	41	L	5	121	3	1			RES
2001 08 26.92	x	B	10.0:	TJ	18	L	7	58	& 3	2			WLO
2001 08 26.94	x	S	11.7	TT	20	L	5	50	2	1/			POW01
2001 08 26.94	x	S	11.8	TT	20	L	5	50	2	1/			BUR04
2001 08 26.96	x	S	10.3	TJ	25	L	6	54	& 3	0			SWI
2001 08 26.96		S	11.2	HS	34.0	L	6	120	2.5	s4			TOTO3
2001 08 27.01		M	9.4	TT	35	L	5	68	4	2			HOR02
2001 08 27.94	x	B	10.5:	TJ	18	L	7	58	& 2	2			WLO
2001 08 27.94		S	9.9	HS	36	L	6	70	6	1			BAR06
2001 08 27.96		S	10.6	AC	41	L	5	121	3	0/			RES
2001 08 28.03		S	10.4:	HS	11	L	7	50	4	1			BAR06
2001 08 28.04		S	10.9	TK	20.3	L	6	48	2.5	1			BIV
2001 08 28.06		S	10.8	TT	20	T	10	75	2.3	1			SHA02
2001 08 28.07		S	9.7	TT	8.0	B		10	6	1/			HOR02
2001 08 28.74	x	S	[11.7	HS	25.4	L	4	46	! 2				YOS02
2001 08 29.03		S	10.5:	HS	11	L	7	50	4	1			BAR06
2001 08 29.05		S	10.2:	TJ	31.0	J	6	58	3.7	2			DIJ
2001 08 29.05		S	10.3:	TJ	31.0	J	6	58	& 3.5	1			BOU
2001 08 29.30		S	10.8	AC	15	R	5	42	3	0			MOR03
2001 08 29.94		M	10.4	TT	42	L	5	66	2	3			LEH
2001 08 29.97		S	11.0	AC	41	L	5	121	2.5	0/			RES
2001 08 29.99		S	10.6	AC	6.3	R	13	52	2	0			KOS
2001 08 30.01		S	9.9	TT	13	L	8	69	3	1/			HOR02
2001 08 30.32		S	12.7	AC	44.5	L	4	167	1.1	1			MOR03
2001 08 30.83		M	10.4	TT	42	L	5	66	2	3			LEH
2001 08 31.04		S	11.3	AC	41	L	5	121	2	1			RES
2001 08 31.04	x	S	[11.0	TJ	15.0	L	6	81	! 3				GUZ
2001 09 01.83	x	S	[12.5	TJ	31.7	L	5	150	! 1.5	5			ADA02
2001 09 04.87		S	11.3	AC	41	L	5	121	2	1			RES
2001 09 08.78		M	12.0	TI	42	L	5	81	1.9	3			LEH
2001 09 08.84	x	S	11.2	TT	30	L	4	96	& 3	0/			GRA09
2001 09 08.85		S	11.6	TK	25.6	L	5	42	2.0	1			BIV
2001 09 08.87		S	11.7	TK	25.6	L	5	84	1.5	2			BIV
2001 09 08.88		S	11.9	AC	41	L	5	121	2	0/			RES
2001 09 09.52		S	[12.0	HS	20	L	7	45					MAT08
2001 09 09.82	x	S	[12.0	TJ	25	L	6	108					SWI
2001 09 09.82	xs	S	13.5:	TJ	35	L	6	150		d0			CHR
2001 09 11.54	x	S	11.7:	GA	25.4	L	4	46	3	1/			YOS02
2001 09 12.03		S	12.8	HS	36	L	6	90	2	1			BAR06
2001 09 14.44		S	[12.5	HS	30	L	6	60					MAT08
2001 09 14.85		S	12.5:	AC	31.0	J	6	89	& 2.0	0/			BOU
2001 09 14.90		S	12.0:	HS	25.6	L	5	42	2.0	1			BIV
2001 09 14.91		S	12.3	HS	25.6	L	5	84	1.5	2			BIV
2001 09 18.83		S	11.5	TK	13	L	8	69	2.2	2/			HOR02
2001 09 18.84		S	[12.0	HS	44.0	L	5	63					HAS02
2001 09 18.94		S	13.2	AC	41	L	5	121	1.2	0/			RES
2001 09 19.83		M	12.4:	HS	42	L	5	162	1.5	3			LEH
2001 09 19.90		S	12.9:	AC	41	L	5	121	1.5	0/			RES
2001 09 20.78		S	11.7	TK	13	L	8	69	1.8	2			HOR02
2001 09 21.82		S	12.0	HS	20.3	L	6	95	1.3	2			BIV
2001 09 21.86		M	12.7:	HS	42	L	5	81	1.5	3			LEH
2001 09 21.86		S	13.1	AC	41	L	5	121	1.2	0/			RES
2001 09 21.90		S	12.5	HS	44.5	T	4	146	2.6	0			SAR02
2001 09 21.92		S	13.5	HS	36	L	6	90	1.5	1			BAR06
2001 09 22.77		M	12.4	HS	42	L	5	81	1.3	3			LEH
2001 10 06.75		S	13.9:	AC	41	L	5	121	1	0/			RES
2001 10 12.97		S	12.8:	HS	25.6	L	5	169	1.0	3			BIV
2001 14 10.86		S	8.4	AA	4.2	B		7	8	0			ZAN

Comet C/2001 K3 (Skiff)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 06 13.89		S	14.4	HS	40.6	L	4	147	0.6	3			BOU
2001 07 12.94		S	14.4	AC	40.8	L	5	262	0.6	3			RES

Comet C/2001 K5 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 06 09.73		S	14.5	HS	40.6	L	4	122	1.2	2/			BOU
2001 06 10.76		S	14.5	HS	40.6	L	4	147	0.9	2/			BOU
2001 06 11.76		S	14.7	HS	40.6	L	4	122	0.8	1/			BOU
2001 06 12.74		S	14.8	HS	40.6	L	4	183	1.0	3			BOU
2001 06 13.73		S	14.6	HS	40.6	L	4	122	1.0	2			BOU

Comet P/2001 MD7 (LINEAR)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 09 09.53			[13.0	HS	20	L	7	160					MAT08
2001 09 16.48			[13.5	HS	30	L	6	170					MAT08
2001 10 07.50			[14.0	HS	28	L	10	88					MAT08
2001 10 08.54			[14.0	HS	28	L	10	88					MAT08
2001 10 14.47		S	14.2	HS	28	L	10	88	0.7	4/			MAT08
2001 10 16.53		S	14.1	HS	28	L	10	88	0.6	5			MAT08

Comet P/2001 Q2 (Petriew)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 20.05		S	10.7	TJ	41	L	5	121	2	3			RES
2001 08 20.09		S	10.4	TJ	25.4	J	6	58	2.4	3/			BOU
2001 08 21.07		S	10.4	TJ	31.0	J	6	72	& 2	4			DIJ
2001 08 21.07		S	10.5:	TJ	31.0	J	6	72	& 2.5	4			BOU
2001 08 21.08	x	B	10.3	TJ	25	L	7	50	2.3	2			BOH02
2001 08 21.77	xs	S	9.8	TT	25.4	L	4	46	2.3	4			YOSO2
2001 08 22.72	xs	S	9.5	TJ	32.0	L	5	58	2.1	6			NAG08
2001 08 22.79	x	S	10.3	TJ	15.0	B		25	2.2	3			HAS08
2001 08 23.04		S	10.7	AC	41	L	5	121	3	3			RES
2001 08 23.08		S	10.2	HS	25.4	T	6	105	2	3/			HOE
2001 08 23.09	x	S	10.6:	TT	30	L	4	96	1.5	3			GRA09
2001 08 23.74	x	M	9.6	TT	25.0	L	6	47	2.0	3			TSU02
2001 08 23.83		S	10.7	TJ	20	L	7	45	2.0	3			MAT08
2001 08 23.98	x	B	10.5:	TI	20.5	L	6	56	& 2	d3			KIS03
2001 08 23.98	x	S	11.0	TT	20	L	5	50	1.5	4			POW01
2001 08 23.98	x	S	11.0	TT	20	L	5	50	1.5	4			BURO4
2001 08 24.02	x	B	10.6	TJ	20.6	L	6	52	& 2	d2/			MAR13
2001 08 24.04	x	S	10.1	TT	20.6	L	8	100	2.4	3/			PAC03
2001 08 24.08		S	9.9	TJ	10.0	B		37	4.5	3			MEY
2001 08 24.08	x	S	10.2	TT	30	L	4	47	2.5	3/			GRA09
2001 08 24.09		M	9.8	TT	10	B	4	25	2	3			LEH
2001 08 25.06		M	9.7	TT	10	B	4	25	2.5	3			LEH
2001 08 25.07	x	B	10.4	TJ	25	L	7	50	2.4	2			BOH02
2001 08 25.07		B	10.7	TT	10.0	B		25	1.5	4			HAS02
2001 08 25.07	x	S	10.8:	TJ	31.7	L	5	78	& 0.9	4			ADA02
2001 08 25.08	x	S	10.6:	TT	15	L	5	60	2	2			DUS
2001 08 26.00		M	9.8	AA	25	L	4	54	1.3	4			SHU
2001 08 26.07		M	9.4	TT	8.0	B		10	6	3/			HOR02
2001 08 26.08		M	9.7	TT	10	B	4	25	2.5	3			LEH
2001 08 26.08		S	10.8	HS	20.0	T	10	80	1.5	3			SER02
2001 08 26.09		S	9.9	TK	20.3	L	6	48	2	4			BIV
2001 08 26.97		M	10.1	PA	30	L	5	60	3	4			NEV
2001 08 27.02		S	10.5	HS	34.0	L	6	83	3	2			TOT03
2001 08 27.02	x	S	10.6	TT	11	L	7	46	1.8	4			POW01
2001 08 27.02	x	S	10.6	TT	11	L	7	46	1.8	4			BURO4
2001 08 27.07		M	9.7	TT	10	B	4	25	2	3			LEH
2001 08 27.09		M	9.4	TT	35	L	5	68	3.8	3			HOR02
2001 08 28.07		S	10.2	AC	41	L	5	121	2.5	3			RES
2001 08 28.09		M	9.2	TT	8.0	B		10	5.5	3			HOR02
2001 08 28.12		S	10.1	TJ	20	T	10	75	1.6	3			SHA02

Comet P/2001 Q2 (Petriew) [cont.]

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 08 28.13		S	9.3	TJ	10	B		14	4.7	3			SHAO2
2001 08 28.13		S	10.6	TK	20.3	L	6	48	1.7	4			BIV
2001 08 28.78	x	S	9.7	TJ	15.0	B		25	2.5	3			HAS08
2001 08 28.80	x	S	10.0	TT	25.4	L	4	46	2.8	3			YOSO2
2001 08 28.81	x	S	9.9	TT	10.0	B		20	3	2			YOSO2
2001 08 29.10		S	10.1	AC	30.5	T	10	56	3	3			COM
2001 08 29.10		S	10.2	TJ	25.4	L	5	65	2.0	3/			MEY
2001 08 29.10		S	10.2	TJ	31.0	J	6	72	2.8	3/			DIJ
2001 08 29.10		S	10.4	TJ	31.0	J	6	72	2.6	3/			BOU
2001 08 29.11		S	10.4	TK	20.3	L	6	48	2.0	4			BIV
2001 08 29.12		S	9.5	TJ	20	T	10	75	2.8	3			SHAO2
2001 08 29.15		S	9.5:	TJ	10	B		14	4.7	3			SHAO2
2001 08 30.04		M	9.8	TT	10	B	4	25	2.8	3/			LEH
2001 08 30.05	x	S	10.7	TT	15	L	5	32	2	4			DUS
2001 08 30.08		M	10.1	TT	13	L	8	69	3.3	3/			HOR02
2001 08 30.10		S	9.6	AC	41	L	5	121	3	3/			RES
2001 08 31.05	x	S	10.7	TT	11	L	7	32	1.8	3/			BUR04
2001 08 31.06		S	9.7	AC	41	L	5	121	2.5	3/			RES
2001 08 31.08		M	9.7	TT	10	B	4	25	3	3			LEH
2001 08 31.08	x	S	11.0:	TJ	31.7	L	5	78	& 1.3	3			ADA02
2001 09 01.11		S	10.5	TJ	25.4	J	6	88	2.2	3/			BOU
2001 09 01.15		S	10.7	TK	25.6	L	5	42	1.5	4			BIV
2001 09 05.79		S	10.2	GA	25.4	L		71	2				SEA
2001 09 12.77		S	8.9:	TJ	25.4	T	6	116	2.1	4			YOSO4
2001 09 14.07		S	9.7	HS	36	L	6	70	3.4	3			BAR06
2001 09 15.12		S	10.1	TK	25.6	L	5	42	2.5	4	0.03	300	BIV
2001 09 16.18		S	10.4	TK	25.6	L	5	42	2.0	5			BIV
2001 09 16.80	x	S	10.4	TJ	15.0	B		25	1.8	3			HAS08
2001 09 17.80	x	S	9.9	TJ	32.0	L	5	58	1.9	5			NAG08
2001 09 19.12		S	9.7	TT	8.0	B		10	5	2/			HOR02
2001 09 20.07		M	11.0	PA	30	L	5	60	2.5	2			NEV
2001 09 20.08		M	9.7	TT	42	L	5	66	2.6	3			LEH
2001 09 22.10		S	10.6	HS	44.5	T	4	81	2.5	3			SAR02
2001 09 22.11		S	9.9	HS	36	L	6	70	3.6	3			BAR06
2001 09 22.74		S	10.2	TJ	25.4	T	6	62	2.6	3			YOSO4
2001 09 22.76		M	10.0	HS	25.0	L	6	47	2.7	3			TSU02
2001 09 22.76	x	S	10.3	HS	31.7	L	6	63	2.4	3/			MIY01
2001 09 22.80	x	S	9.9	TJ	32.0	L	5	58	2.7	5			NAG08
2001 09 22.82	x	S	10.5	HS	15.0	B		25	2.4	2			HAS08
2001 09 23.17		S	10.7	TK	20.3	L	6	48	1.7	3			BIV
2001 09 24.78	x	S	10.6	HS	31.7	L	6	63	1.3	4			MIY01
2001 09 26.76		S	10.7	GA	25.4	L		71	4	2			SEA
2001 09 27.07		M	11.2	PA	30	L	5	60	2	1			NEV
2001 09 27.11		M	11.5	GA	25	L	4	53	1	3			SHU
2001 09 27.80		S	10.8	TJ	20	L	7	45	1.5	4			MAT08
2001 09 28.76		S	11.0	TJ	25.4	T	6	62	2.2	3/			YOSO4
2001 09 29.06	a	M	11.2	PA	30	L	5	60	2.5	2			NEV
2001 09 29.16		S	11.0:	TJ	25.4	J	6	88	& 2	3			BOU
2001 09 30.17		S	11.4	TK	25.6	L	5	42	1.4	3			BIV
2001 09 30.17		S	11.5	TK	25.6	L	5	84	1.3	3			BIV
2001 10 13.78	x	S	11.6	HS	25.4	L	4	46	1.8	2			YOSO2
2001 10 13.80	x	S	12.1	HS	31.7	L	6	63	1.0	4			MIY01
2001 10 14.77		S	12.5	HS	28	L	10	88	1.3	3			MAT08
2001 10 14.80	x	S	12.2	HS	25.4	L	4	46	2.0	2			YOSO2
2001 10 16.18		S	12.4	HS	20.3	L	6	95	1.0	3			BIV
2001 10 17.07	w	M	12.8	AS	30	L	5	60	1	1			NEV
2001 10 19.79		S	[11.5	HS	25.4	L	6	62	! 1.5				YOSO4
2001 10 19.81		M	11.5	HS	25.0	L	6	63	3.0	2			TSU02
2001 10 28.20		S	12.4:	HS	25.6	L	5	84	1.0	2			BIV

Comet P/2001 Q5 (LINEAR-NEAT)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 09 21.96		S	[14.0	HS	44.5	T	4	146	! 1.0				SAR02

Comet P/2001 Q6 (NEAT)

DATE (UT)	N	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
2001 09 22.00		S	14.0	HS	44.5	T	4	146	1.5	2			SAR02
2001 10 08.81		S	11.8	GA	31.0	J	6	89	2.5	2/			BOU
2001 10 09.86		S	13.2	AC	41	L	5	121	1.5	3			RES
2001 10 12.94		S	12.7	AC	41	L	5	121	1.8	2			RES
2001 10 13.64	x	S	11.9	HS	25.4	L	4	113	1.7	2			YOS02
2001 10 13.95		S	12.6	AC	41	L	5	121	1.8	2			RES
2001 10 14.74	x	S	11.1	HS	25.4	L	4	46	2.3	3			YOS02
2001 10 15.85		S	11.4	TJ	31.0	J	6	72	2.6	2			BOU
2001 10 15.86		S	11.3	TJ	31.0	J	6	72	2.7	2			DIJ
2001 10 16.90		S	11.2	TJ	31.0	J	6	72	2.8	1/			DIJ
2001 10 16.90		S	11.5	TJ	31.0	J	6	72	2.7	2			BOU
2001 10 18.64	x	S	11.0	TJ	32.0	L	5	91	3.1	2			NAG08
2001 10 19.73		S	12.2	HS	25.4	T	6	62	1.5	2			YOS04
2001 10 19.93		S	11.4	TJ	25.4	J	6	72	3.2	1/			DIJ
2001 10 19.93		S	11.5	TJ	25.4	J	6	72	2.7	1/			BOU
2001 10 20.02		S	11.7	AC	41	L	5	121	1.8	2			RES
2001 10 22.10		S	10.9	TI	44.5	T	4	146	5	3			SAR02
2001 10 23.08		S	11.0	TI	44.5	T	4	82	4.5	2/			SAR02
2001 10 23.80		M	12.3	PA	30	L	5	60	1.2	2			NEV
2001 10 24.65	x	S	10.5	TJ	32.0	L	5	58	2.7	4			NAG08
2001 10 24.85		M	11.8	PA	30	L	5	60	1.5	2			NEV
2001 10 26.90		S	11.8	AC	41	L	5	121	& 2	2/			RES

Φ Φ Φ

DESIGNATIONS OF RECENT COMETS

Listed below, for handy reference, are the last 15 comets to have been given designations in the new system. The name, preceded by a star (*) if the comet was a new discovery (compared to a recovery from predictions of a previously-known short-period comet) or a # if a re-discovery of a 'lost' comet. Also given are such values as the orbital period (in years) for periodic comets, date of perihelion, T (month/date/year), and the perihelion distance (q , in AU). Four-digit numbers in the last column indicate the *IAU Circular* (4-digit number) containing the discovery/recovery or permanent-number announcement.

Not included below are numerous recently-discovered comets observed only with the SOHO spacecraft — and seen only close to the sun with the SOHO instruments — that are presumed to be Kreutz sungrazers that are no longer in existence [see the list and references in the October 2000 issue (p. 149)]; recent such SOHO discoveries were reported on *IAUC* 7726, 7730, 7741, 7746, 7750, 7759, 7760, and 7764, and include comets C/1996 B4, B5, R4, and V1; and C/2001 S2, T1, T2, U1, U2, U3, U4, U5, T6, T7, U7, U8, U9, U10, V1, V2, V3, V4, V5, W3, and W4. SOHO comet C/2001 T5 (*IAUC* 7750) does not appear to be of the Kreutz sungrazing type.

[This list updates that in the July 2001 issue, p. 150. For explanation regarding new usage of 'C/' instead of 'P/' for intermediate-period comets, see editorial note on page 2 of the January 2000 issue.]

	<i>New-Style Designation</i>	P	T	q	<i>IAUC</i>
*	C/2001 Q4 (NEAT)		5/25/04	1.00	7695
*	C/2001 Q5 (LINEAR-NEAT)		6/11/01	2.04	7697
*	P/2001 Q6 (NEAT)	22.6	11/9/01	1.41	7698
*	P/2001 R1 (LONEOS)	6.5	2/17/02	1.36	7713
*	P/2001 R6 (LINEAR-Skiff)	8.35	10/27/01	2.12	7723
*	C/2001 RX ₁₄ (LINEAR)		1/18/03	2.06	7739
*	C/2001 S1 (Skiff)		6/2/01	3.75	7725
*	P/2001 T3 (NEAT)	16.6	2/1/02	2.51	7733
*	C/2001 T4 (NEAT)	51.9	5/15/02	8.6	7738
*	P/2001 TU ₈₀ (LINEAR-NEAT)	7.00	12/10/01	1.93	7753
*	C/2001 U6 (LINEAR)		8/8/02	4.41	7746
*	C/2001 W1 (LINEAR)		12/24/01	2.40	7754
*	C/2001 W2 (BATTERS)	76.1	12/23/01	1.05	7758
*	C/2001 X1 (LINEAR)		1/8/02	1.70	7774
*	P/2001 X2 (Scotti)	7.6	10/1/01	2.5	7775