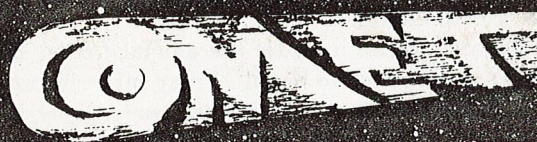


THE INTERNATIONAL

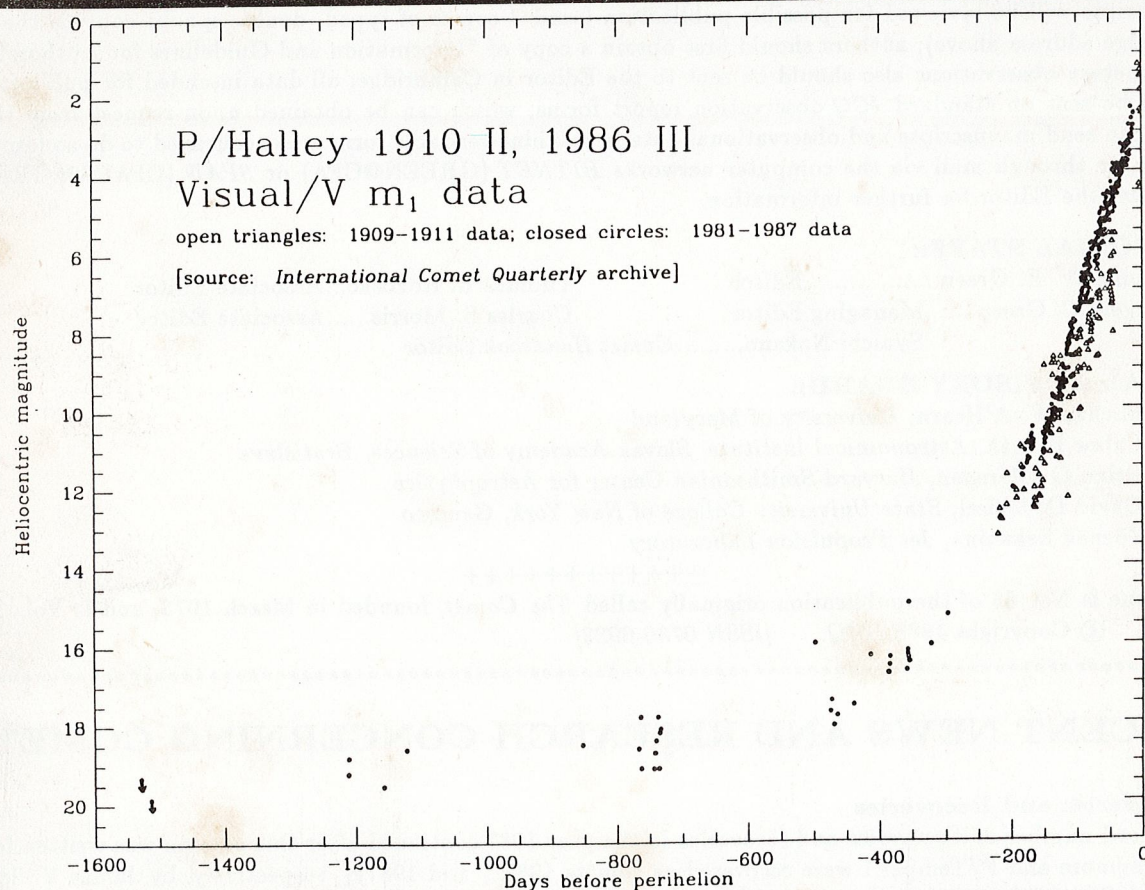


QUARTERLY

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P/Halley 1910 II, 1986 III
Visual/V m_1 data

open triangles: 1909-1911 data; closed circles: 1981-1987 data

[source: *International Comet Quarterly* archive]

Above is a pre-perihelion graph of visual and CCD V magnitudes from the *ICQ* Archive for Halley's comet. The 1981-1986 data (filled circles) are those used by Green and Morris (1987, *Astron. Astrophys.* 187, 560) in their analysis of P/Halley's light curve. The 1910 data (open triangles) will be added to the third edition of the Archive on magnetic tape, available later this year.

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The *International Comet Quarterly (ICQ)* is a non-profit journal devoted to news and observation of comets. Regular issues are published 4 times per year (January, April, July, and October), with an annual *Comet Handbook* of ephemerides published as a special fifth issue in December. The *ICQ* is published in part by the Department of Physics and Astronomy at Appalachian State University in Boone, North Carolina.

The regular (invoiced) subscription rate is US\$24.00 per year (price includes the annual *Comet Handbook*; the price without the *Handbook* is US\$16.00 per year). Subscribers who do not wish to be billed may subscribe at the special rate of US\$18.00 per year, or US\$20.00/year outside North America (rates are \$10.00 and \$12.00, respectively, without *Handbook*). [The last set of digits (after the hyphen) on the top line of the mailing address label gives the Whole Number that signifies the last *ICQ* issue which will be sent under the current subscription status.] Make checks or money orders payable in U.S. funds to *International Comet Quarterly* and send to Daniel Green; Smithsonian Astrophysical Observatory; 60 Garden St.; Cambridge, MA 02138, U.S.A. Group subscription rates are available upon request. Back issues are available for \$4.00 each — except for the *Comet Handbook*, which is available for \$10.00 (\$8.00 to subscribers if ordered with their *ICQ* subscription; see above).

Manuscripts will be reviewed for possible publication (send 3 copies of typed, double-spaced copy to the Editor at the Cambridge address above); authors should first obtain a copy of "Information and Guidelines for Authors" from the Editor. Cometary observations also should be sent to the Editor in Cambridge; all data intended for publication in the *ICQ* should be sent on standard *ICQ* observation report forms, which can be obtained upon request from the Editor. Those who can send manuscripts and observational data in machine-readable form are encouraged to do so [especially via floppy disks, or through mail via the computer networks *BITNET* (GREEN@CFA) or *SPAN* (CFAPS2::GREEN), and should contact the Editor for further information.

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RECENT NEWS AND RESEARCH CONCERNING COMETS

New Discoveries and Recoveries

The record number of discoveries and recoveries in the year 1987 continued after this column was written for the last issue. P/Longmore and P/Tempel 1 were recovered as comets 1987c₁ and 1987e₁, respectively, by James V. Scotti using the Kitt Peak SPACEWATCH 91-cm reflecting telescope; James Gibson shared in the recovery of P/Longmore, using the 155-cm reflector at Palomar (cf. *IAUC* 4493, 4498). P/Longmore was reported as nearly stellar on CCD images obtained on 1986 Dec. 29 (Scotti) and 1987 Nov. 3 (Gibson); both found a short (6"-18") tail toward the northwest on Nov. 19, and the indicated correction to the prediction in the *ICQ 1988 Comet Handbook* is $\Delta T = +0.01$ day. P/Tempel 1 was reported as "stellar within the limits of seeing" on Oct. 27 and Nov. 24 images, and is close to the prediction given in the *ICQ 1988 Comet Handbook*. There were thus a record 17 recoveries of comets in 1987.

The discoveries of comets Ichimura 1987d₁, Furuyama 1987f₁, and Jensen-Shoemaker 1987g₁ in late November brought the record number of new discoveries in 1987 to 16. The first two of these were made by Japanese amateurs Yoshimi Ichimura (visual, 120-mm binoculars) and Sigeru Furuyama (photographic, 30-cm f/3.8 reflector) (cf. *IAUC* 4494, 4499), bringing to eight the number of comet discoveries by "non-salaried amateur" astronomers in 1987. Comet Furuyama was near $m_1 \sim 10$ upon discovery (Nov. 23-24) and remained near that brightness into mid-January; it appeared generally diffuse with coma sizes $\sim 3'-5'$. Comet 1987f₁ was moving slowly southwestward in Taurus upon discovery. Comet Ichimura was diffuse and fairly large (coma diameter $\sim 10'$), near $m_1 = 9$, at discovery on 1987 Nov. 22.5 UT. Then located in Eridanus, comet 1987d₁ moved rapidly southeastward, toward conjunction with the sun and out of view from Earth; it may not be seen again visually because of poor observing geometry after conjunction. (Cont. on page 3)

Carolyn Shoemaker discovered her eleventh comet at Palomar on 18-inch Schmidt telescope films exposed Nov. 24, 26, and 27. Then diffuse with a faint tail to the northwest and of mag ~ 17 (cf. *IAUC* 4503), comet 1987 g_1 was shown (cf. *IAUC* 4505) to be identical to an object found by Poul Jensen of Copenhagen Observatory on Oct. 25 exposures by Karl Augustesen. Comet Jensen-Shoemaker was reported at $m_1 = 16.7$, and still exhibiting a short tail to the north-northwest, by Scotti on Dec. 21.

The first comet discovery of 1988 was reported by William Liller of Vina del Mar, Chile, from photographs he exposed and blinked in his search for new novae. Comet Liller 1988 a was found on Jan. 11 as a rather large, diffuse object moving slowly northward in Sculptor. Visual observations in the following days indicated $m_1 \sim 9.5$ –10.0 and coma diameters $\sim 3'$ –6'. This long-period comet will reach perihelion on 1988 Mar. 31 at $q = 0.85$ AU (cf. *MPC* 12787), as it continues to move northward and brighten. Although it will be at elongations $< 30^\circ$ during March, comet Liller 1988 a will move during April ($m_1 \sim 7$) into circumpolar skies for observers north of latitude $\sim 30^\circ$, reaching $\delta > 75^\circ$ in May ($m_1 \sim 7.5$) before turning southward and fading in brightness.

Carolyn Shoemaker discovered her twelfth comet on films exposed January 23, though it wasn't confirmed until Jean Mueller found the comet on a plate taken February 12. Comet Shoemaker 1988 b was at $m_1 \sim 16$ at discovery, and passed perihelion in early 1987 ($q \simeq 5.0$ AU; cf. *IAUC* 4547, 4548).

Alain Maury and Jeff Phinney discovered comet 1988 c from a plate exposed Feb. 15 during the course of the second Palomar Sky Survey with the 48-inch Schmidt telescope. At $m_1 \sim 17$ at discovery with a short tail, comet Maury-Phinney passed perihelion at the end of December at $q \sim 1.9$ AU (cf. *IAUC* 4549, 4550).

Malcolm Hartley discovered his sixth short-period comet in 6 years on a Feb. 19 plate exposed with the 48-inch U.K. Schmidt telescope at Siding Spring, Australia. P/Hartley 3 (1988 d) was at $m_1 \sim 16.5$ and exhibited a short tail as it moved slowly northwestward in Sextans. Preliminary orbital elements (*IAUC* 4558) indicate an orbital period around 6.9 years, with perihelion having occurred around 1987 Aug. 1 ($q \simeq 2.44$ AU). Carolyn Shoemaker independently found this comet on films

taken at Palomar half a day before Hartley's discovery plate, but her finding was not made until 3 days after Hartley's announcement, thus precluding the addition of the name Shoemaker to the comet.

Other Comets under Observation

Comet McNaught 1987 b_1 , reported on page 139 of the October issue, passed perihelion on 1987 Dec. 11 at a heliocentric distance very similar to that of comet 1988 a . This comet, as well as comets Rudenko 1987 u and Bradfield 1987 s , produced — during the past 3 months — numerous "new discovery" reports by observers who were unaware of previous discovery. For example, Shigehisa Fujikawa (Onohara-machi, Kagawa Prefecture) and Tamotsu Makise (Sakai City, Osaka) reported the discovery of a new comet on Oct. 21–22 which was recognized as comet Rudenko 1987 u . Makise was using 25×150 binoculars.

Comet McNaught was lost in solar glare from mid-November (when near $m_1 \sim 7.5$) until late December ($m_1 \sim 7$), and a tail toward the northwest of lengths nearly 1° were reported in January. This comet will remain visible to northern-hemisphere observers during the coming months as it slowly fades. Comet Bradfield sported a prominent anti-tail for several weeks, with length exceeding 1° in December. Comet Wilson 1986 l was found by Karen Meech to have split on CCD images obtained 1988 Feb. 14–16 at Mauna Kea; the secondary nucleus was reported by various observers as being some 2 mag fainter and more diffuse than the primary nucleus (cf. *IAUC* 4552, 4555), and the separation was some $10''$ by late February.

Several observers in Australia and the U.S.A. searched for P/Denning-Fujikawa using several telescopes (including Schmidt telescopes at Siding Spring and Palomar) during June–August, with no success. It appears that the line-of-variation was fairly well covered for $\Delta T = \pm 2$ –3 days or so, and down to a limiting magnitude of perhaps 17. This comet may have faded substantially or even disappeared completely; it has only been seen in 1881 and 1978.

The roman numeral designations for comets in 1986 are listed on page 32 of this issue.

— Daniel W. E. Green (1988 March 1)

* * *

TABULATION OF COMET OBSERVATIONS

Descriptive Information (to complement the Tabulated Data), listed chronologically and by comet:

◇ P/Schwassmann-Wachmann 1: 1982 Apr. 13.89: "asymmetrical comet, fan-shaped toward p.a. 210–220°; nuclear region had stellar aspect, not exactly centered, nearer the north edge" [MER]. Apr. 14.85: nearly round, diffuse [MER]. Apr. 15.85: nuclear region bright and almost stellar; condensed elliptical region toward p.a. $\simeq 145^\circ$; "nebulousity more extended toward south with imprecise limits"; global diameter 1.3' or more [MER]. Apr. 19.84: "large fuzzy patch; thinning toward p.a. 80°; west edge more round and easily delimited" [MER].

◇ Comet Wilson 1986 l : 1987 Apr. 25.50: in 15-cm L, tail seen as a faint, broad fan [WIL02]. Dec. 24.04: "almost stellar at lower magnifications" [KOR].

◇ P/Borrelly (1987 p): 1987 Sept. 27.75 and Oct. 17.62: "prominent central cond." [PEA]. Oct. 17.75 and Nov. 12.63: "very large outer coma" [CLA]. Oct. 23.77: "faint outer coma; starlike central cond. at 90×" [PEA]. Dec. 12.02: in 10×50 B, coma suspected to 14' [BOR]. Dec. 12.74: in 15.2-cm L, "central cond. elongated" [MOE]. Dec. 20.79: in 40.6-cm L, also 0.48° tail in p.a. 0° [ZAN]. Dec. 22.70: in 15.2-cm L (44×), elliptical coma; at 100×, elliptical cond., starlike nucleus of mag 11.3 [MOE]. 1988 Jan. 6.70, 9.72, 11.72: in 15-cm L (100×), "elliptical central cond." [MOE]. Jan. 8.81: in 33-cm L, 28' tail seen in p.a. 76° [BOA]. Jan. 9.75: in 33-cm L, 22' tail seen in p.a. 76° [BOA].

◊ *Comet Bradfield 1987s*: 1987 Aug. 22.18: in 25-cm L, coma slightly elongated [JAC01]. Sept. 23.13: in 25-cm L, "knot of bright material north of condensation" [JAC01]. Sept. 25.08: "bright cond.; possible jet in p.a. $\sim 250^\circ$ " [JAC01]. Sept. 27.50: "intense cond. at focus of parabolic coma" [PEA]. Oct. 16.50: tail suspected in p.a. 60° – 120° [WIL02]. Oct. 17.50: in 20-cm L, "broad tail subtending an angle of 20° – 30° " [PEA]. Oct. 17.78: 1.0° tail was "gas tail", which was the northern edge of a broad fan; also 0.7° "dust tail" in p.a. 95° [BOU]. Oct. 18.74: "elliptical coma" [MOE]. Oct. 19.00: "fanned tail" [ROB03]. Oct. 19.06: "intense cond.; coma wrought with activity, numerous fountains and hoods visible" [JAC01]. Oct. 19.74: in 15×80 B, "fan-shaped tail with two bright streamers on each side blowing up from comet nucleus" [MIK]. Oct. 21.06: "dust tail obvious, hint of ion tail" [JAC01]. Oct. 26.73: "elliptical coma; fan-shaped tail" [MOE]. Oct. 26.77 and 29.76: "gas and dust tails superimposed" [BOU]. Oct. 30.75: jet in p.a. 95° [BOA]. Oct. 30.98: "coma very condensed, nearly stellar in binoculars" [CHE].

Nov. 5.73: in 15×80 B, 0.3° fan in p.a. 62° – 80° , "stellar nucleus clearly visible" [MIK]. Nov. 7.74: 0.3° fan in p.a. 60° – 103° [MIK]. Nov. 8.52: "several streamers visible; tail broad" [CLA]. Nov. 11.76: in 7×42 B, 2° was "gas tail"; "45' dust tail" in p.a. 65° [ZAN]. Nov. 12.77: in 15.2-cm L, 25' dust tail; 1.5° tail spans 60° – 80° [MOE]. Nov. 13.70: in 48.5-cm L, dust tail spans p.a. 60° – 100° [MOE]. Nov. 14.76: in 15.2-cm L, "fan-shaped dust tail" [MOE]. Nov. 15.11: comet "seems to have brightened considerably" since Nov. 12.1 [LEV]. Nov. 15.74: 2° tail was "gas tail"; also 1.05° "dust tail" in p.a. 65° [ZAN]. Nov. 15.96: in 25-cm f/7.8 R ($98\times$), coma dia. 5' [ROB03]. Nov. 16.79: "dark bands in tail" [MAR02]. Nov. 17.73: in 15×80 B, nearly stellar nucleus visible [MIK]. Nov. 18.77: in 15×80 B, stellar nucleus visible [MIK]. Nov. 20.77: 1.16° tail was "dust tail"; also 1.0° tail in p.a. 65° [ZAN]. Nov. 21.74: in 7×42 B, also 1.8° tail in p.a. 75° [ZAN]. Nov. 21.84: "dark band in tail" [CAR]. Nov. 22.98: to naked eye, 3° tail in p.a. 70° [ROB03].

Dec. 1.77: " 0.05° dust tails in p.a. 190° and 120° ; 0.08° gas tail in p.a. 50° ; moonlight" [BUS01]. Dec. 3.74: 0.03° tail was "dust" tail; also 0.17° tail in p.a. 65° [BUS01]. Dec. 7.7: "gas" tail in p.a. 50° ; "dust" tails of length 0.03° and 0.07° in p.a. 200° and 70° – 120° , respectively" [BUS01]. Dec. 9.72: "gas" tail in p.a. 50° ; "dust" tails of length 0.05° and 0.25° in p.a. 190° and 70° , respectively [BUS01]. Dec. 12.74, 19.73, and 22.69: in 15.2-cm L, tail fan-shaped [MOE]. Dec. 13.97: in 31.7-cm f/6 L ($55\times$), coma dia. 3.5' [BOR]. Dec. 18.74: also 1.0° tail in p.a. 30° [ZAN]. Dec. 19.00: in 31.7-cm f/6 L ($55\times$), coma dia. 3.9, DC = 5–6 [BOR]. Dec. 22.74: anti-tail $\sim 20'$ long in p.a. $\sim 220^\circ$, much fainter and somewhat sharper than the dust tail [KOR]. Dec. 23.17: "strong, pointed sunward tail of length 1.5° , slightly forked" [LEV]. Dec. 23.74: "anti-tail $\sim 20'$ long in p.a. $\sim 230^\circ$; in 36-cm L ($325\times$), two possible jets (p.a. 180° , 300°) and very diffuse streamers in the tail" [KOR]. Dec. 28.72: also 0.73° tail in p.a. 15° [KOC]. Dec. 28.72: also $20'$ tail in p.a. $\sim 25^\circ$ [HAS02].

1988 Jan. 11.71: in 15.2-cm L ($100\times$), "elliptical cond." [MOE]. Jan. 13.70, 14.84, and 21.71: in 15.2-cm L, "elliptical central cond." [MOE].

◊ *Comet Rudenko 1987u*: 1987 Aug. 31.18: "tenuous outer coma; inner coma mottled" [JAC01]. Aug. 31.87: "elongated coma, broader toward p.a. $\sim 155^\circ$ " [BOU]. Oct. 24.83: "prominent central cond." [PEA]. Oct. 31.18: "probable jet in p.a. 80° " [BOA].

◊ *Comet Ichimura 1987d₁*: 1987 Nov. 24.33: outer coma dia. 11'; bright inner coma of dia. 5'; very faint tail [LEV]. Nov. 25.33: "possible outburst" [LEV].

* * *

Key to observers with observations published in this issue [those with asterisks (*) preceding the 5-character code are new additions to the Observer Key (cf. ICQ 9, 146)]:

AMO	Mauro Amoretti, Italy	LLA	13	Juan Llabres, Spain
AND01	Karl-Gustav Andersson, Sweden	LOO01		F. R. van Loo, Belgium
BOA	Andrea Boattini, Italy	MAR02	13	Jose Carvajal Martinez, Spain
BOR	John E. Bortle, NY, U.S.A.	MAR03		Brian G. Marsden, MA, U.S.A.
BOU	Reinder J. Bouma, The Netherlands	MER		Jean-Claude Merlin, France
BRI01	11 H. J. Brill, The Netherlands	MIK		Herman Mikuz, Yugoslavia
BUS01	11 E. P. Bus, The Netherlands	MOE		Michael Moeller, West Germany
*CAB	13 Mari Paz Miralles Caballero, Spain	MOR		Charles S. Morris, U.S.A.
CAR	13 Nicolas Cardiel Lopez, Spain	MOR03		Warren C. Morrison, Canada
CHE	13 G. R. Chester, VA, U.S.A.	PEA	14	Andrew R. Pearce, Australia
CLA	13 Maurice L. Clark, Australia	*PUJ	13	F. Pujoe, Spain
COM	11 Georg Comello, The Netherlands	REI01		Johann Reifberger, Austria
*CRE	13 Jose Antonio Rodriguez Crespo, Spain	*ROB03		Paul C. Robinson, WV, U.S.A.
DEA	13 V. F. de Assis Neto, Brazil	*ROD01	13	Diego Rodriguez, Spain
FEI	11 H. Feijth, The Netherlands	*RUI	13	Emilio Garcia Ruiz, Spain
GAL	13 Jesus Gallego Maestro, Spain	SAB		John D. Sabia, PA, U.S.A.
*GAL01	13 Jose Prieto Gallego, Spain	SCR04		A. H. Scholten, The Netherlands
GEE	11 J. J. Geenen, The Netherlands	SCO01		James V. Scotti, AZ, U.S.A.
GOM	13 Angel Gomez, Spain	SCO02		T. Gehrels and J. V. Scotti, Kitt Peak, AZ, U.S.A.
*GOM01	13 Tomas L. Gomez, Spain	SEA	14	David A. J. Seargent, Australia
GRE	13 Daniel W. E. Green, U.S.A.	SHA02	07	Jonathan D. Shanklin, England
HAL	13 Alan Hale, U.S.A.	SIM		Karl Simmons, FL, U.S.A.
HAS02	13 Werner Hasubick, West Germany	SIM01		Wanda Simmons, FL, U.S.A.
HAS03	13 Hisaya Hasegawa, Japan	SPR		C. E. Spratt, BC, Canada
JAC01	13 Eric A. Jacobson, MN, U.S.A.	*SUG01		Yukihiko Sugiyama, Japan
KOC	13 Bernd Koch, West Germany	THE		Serge Thebaud, France
KOR	13 Stefan Korth, West Germany	WIL02		Peter F. Williams, Australia
*KOS	13 Attila Kosa-Kiss, Romania	*YOU01		Robert R. Young, PA, U.S.A.
LEV	13 David Levy, AZ, U.S.A.	ZAN		Mauro Vittorio Zanotta, Italy
LIN02	13 Juergen Linder, West Germany			

Comet Shoemaker 1985 XII

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 16.39	C	16.9	FA	91.4	L	4			5	>0.02	126	SCO02
1987 10 27.41	C	17.1	FA	91.4	L	4			5			SCO02
1987 10 27.41	c	20.1	FA	91.4	L	4						SCO02
1987 11 16.33	c	19.7	FA	91.4	L	4		0.61	4	0.05	136	SCO02
1987 11 16.34	C	16.7	FA	91.4	L	4						SCO02

January 1988

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INTERNATIONAL COMET QUARTERLY

Comet Terasako 1986 XVIII

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 02 23.79	S	10.0:	AC	25.4	J	6	73	& 2.5	1			BOU
1987 02 25.78	S	10.3:	AC	25.4	J	6	73	& 3	1			BOU

Comet Wilson 1986I

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 04 06.71	S	6.0	AA	5.0	B		10		3			WIL02
1987 04 19.76	S	5.3	AA	5.0	B		10		6			WIL02
1987 04 25.42	S	5.2	AA	5.0	B		10		1			WIL02
1987 04 25.50				15	L	8	50	0.3	1	0.1	190	WIL02
1987 04 26.45	S	4.6	AA	5.0	B		10		1			WIL02
1987 05 23.23	S	6.0	A	8.0	B		11	5.0	1			SPR
1987 09 26.45	B	11.4	L	25	L	4	82					JAC01
1987 09 26.45	S	11.2:	L	25	L	4	82	1.9	3			JAC01
1987 10 03.49	S	11.0	L	25	L	4	46	1.5	2			JAC01
1987 10 04.49	S	11.1	L	25	L	4	46	1.8	3			JAC01
1987 10 17.78	S	12.0	AA	31.0	L	6	80	1.5	3			HAS03
1987 10 17.83	S	11.0	A	31	L	4	60	2	5			CLA
1987 10 19.77	S	11.3	AA	31.0	L	6	80	2.5	2			HAS03
1987 10 20.14	M	11.4	AC	51.0	L	4	93	1.3	5			BOU
1987 10 20.16	S	10.5:	AC	25.4	L	4	71	1.8	3/			ZAN
1987 10 21.50	M	11.3	AC	41	L	4	83		7/			HAL
1987 10 22.44	S	11.4	L	25	L	4	82	1.3	3/			JAC01
1987 10 22.83	S	11.1	A	31	L	4	60	2	5			CLA
1987 10 24.81	S	11.1	A	31	L	4	60	2	5			CLA
1987 10 24.82	S	11.4	VN	20	L	4	45	2	5			PEA
1987 10 30.12	M	11.5	AC	51.0	L	4	93	1.0	5			BOU
1987 10 30.47	M	11.4	AC	41	L	4	83					HAL
1987 11 01.11	M	11.3	AC	51.0	L	4	93	1.2	5			BOU
1987 11 12.81	S	11.4	A	31	L	4	60	1.5	3			CLA
1987 11 16.42				91.4	L	4		4.6	7	>0.10	138	SCO02
1987 11 17.52	M	11.3	AC	41	L	4	83					HAL
1987 11 25.44	M	11.3	AC	41	L	4	83					HAL
1987 11 27.23	S	10.4	VB	33.3	L	5	60	2.3	4			SHA02
1987 11 27.53	M	10.3	NP	25.6	L	4	67	2.5	4			MOR
1987 12 18.06	S	11.3	AC	40.6	L	4	57	2.1	3/			ZAN
1987 12 19.02	S	11.1	VB	33.3	L	5	45	3.6	4			SHA02
1987 12 21.44	M	11.2	CA	41	L	4	83					HAL
1987 12 24.04	S	11.6	AC	36.0	T	11	325	0.4	8			KOR
1987 12 29.45	M	11.4	CA	41	L	4	83					HAL
1988 01 09.20	M	11.6	CA	41	L	4	83					HAL
1988 01 11.86	S	11.0	AC	20.3	T	10	85	0.4	4			HAS02
1988 01 12.92	S	11.7	AC	36.0	T	11	325	0.7	6/			KOR
1988 01 13.26	M	11.5	CA	41	L	4	83					HAL
1988 01 20.99	S	12.5	VB	20.0	R	14	95	1.2	4			SHA02
1988 01 22.95	S	12.7	VB	20.0	R	14	95	0.9	3			SHA02

Comet Sorrells 1986n

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1986 12 03.14	S	9.7	A	20.0	C	10	64	4.0	3	0.03	170	SPR
1986 12 04.13	S	9.8	A	20.0	C	10	64	3.5	3			SPR
1986 12 06.13	S	9.9	A	20.0	C	10	64	3.0	3			SPR
1987 01 06.08	S	9.1	A	20.0	C	10	64	2.0	2			SPR
1987 06 16.97	S	10.6	AC	25.4	J	6	73	& 2	2			BOU
1987 07 03.98	S	10.7	AC	25.4	J	6	59	2.5	2/			BOU
1987 07 05.27	S	11.2	AC	15	R	5	62	2.2	2			MOR03
1987 07 05.99	S	10.8	AC	25.4	J	6	59	2.5	2/			BOU

Comet Sorrells 1986n [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 07 17.17	S	11.2	AC	15	R	5	62	2.0	2			MOR03
1987 07 22.15	S	11.3	AC	15	R	5	62	1.6	2			MOR03
1987 07 23.14	S	11.5	AC	15	R	5	62	1.4	3			MOR03
1987 07 26.17	S	12.6	AC	15	R	5	111	0.6				MOR03
1987 07 29.14	S	12.6	AC	44.5	L	4	167	1.0	4			MOR03
1987 08 03.95	S	11.2	AC	25.4	J	6	73	2.5	3			BOU
1987 08 04.12	S	12.2	AC	44.5	L	4	80	1.4	3			MOR03
1987 08 07.02	S	11.4	AC	25.4	J	6	73		4			BOU
1987 08 18.15	S	12.3	AC	44.5	L	4	80	1.5	2			MOR03
1987 08 18.15	S	12.7	AC	44.5	L	4	167	1.1	3			MOR03
1987 08 19.85	S	10.7	AC	25.4	J	6	61	3	2			FEI
1987 08 24.11	S	13.4	AC	44.5	L	4	167	0.7	2			MOR03
1987 08 25.07	S	13.3	AC	44.5	L	4	167	0.8	3			MOR03
1987 08 31.86	S	12.5	AC	25.4	J	6	90	& 1	1			BOU
1987 09 20.22	S	13.5:	NP	25.6	L	4	156	& 1.0	0/			MOR

Comet McNaught 1987b₁

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 20.51	S	8.8	AA	20	L	4	45	2.5	4			PEA
1987 10 21.50	S	8.7	AA	20	L	4	45	2.5	4			PEA
1987 10 21.54	S	8.5	AA	31	L	4	60	2.5	6	0.4	194	CLA
1987 10 22.50	S	8.7	AA	20	L	4	45	2.5	4/			PEA
1987 10 24.51	S	8.6	AA	20	L	4	45	2	4/			PEA
1987 10 27.42	S	8.6	AA	8.0	B		15					SEA
1987 11 08.49	S	7.9	AA	31	L	4	60	2	6	0.3	71	CLA
1987 11 12.49	M	7.4	AA	31	L	4	60	3.5	5			CLA
1987 12 28.54	! M	7.5:	PI	20	L	6	55					HAL
1987 12 29.21	S	7.0:	AA	8.0	B		20	3	5	0.11		KOC
1987 12 29.21	S	7.4	AA	10.0	B		14	3.4	5	& 0.3	300	HAS02
1987 12 30.27	! S	6.5	AA	8.0	B		20	3.3	6			SHA02
1987 12 31.45	S	6.7	NO	5.0	B		10	2.5				BOR
1987 12 31.45	S	6.9	NO	8.0	B		20	2	5			BOR
1987 12 31.54				41	L	4	83			0.25	345	HAL
1987 12 31.54	! M	7.5	PI	20	L	6	55					HAL
1988 01 03.26	! S	8.0	AA	33.3	L	5	45	1.7	6			SHA02
1988 01 07.26	S	6.5	AA	33.3	L	5	45	2.4	7		350	SHA02
1988 01 07.27	S	6.3	AA	8.0	B		20	2.9	5	0.46	347	SHA02
1988 01 10.55				41	L	4	83			0.25	305	HAL
1988 01 10.55	M	7.4	PI	5.0	B		10					HAL
1988 01 11.23	B	7.5	AC	33	L	4	50	7	5	? 0.13	340	BOA
1988 01 11.25	S	6.4	AA	8.0	B		10	2.7	7	0.67	324	SHA02
1988 01 16.22	B	6.7	AC	10.0	B		14	2.6	5			HAS02
1988 01 20.55	S	6.3	AC	15	L	4	35	4	6	0.75	290	LEV
1988 01 22.25	S	7.2	AC	15.2	L	5	44	4.5	7			MOE
1988 01 22.55	S	6.2	AC	15	L	4	35	4	6	0.42	290	LEV
1988 01 23.25	S	6.8	AA	8.0	B		20	2.7	7			SHA02

Comet Bradfield 1987s

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 08 14.15	S	8.9	AC	20.3	L	7	71		4	0.17	90	LEV
1987 08 15.14	S	8.9	AC	20.3	L	7	71					LEV
1987 08 16.13	S	8.7	AC	20.3	L	7	71		3			LEV
1987 08 17.17	S	9.2:	AA	15	S	4	22	4	2			JAC01
1987 08 17.17	S	9.4:	AA	25	L	4	46	3	2			JAC01
1987 08 19.17	S	9.3:	AA	8.0	B		20	4	0/			JAC01
1987 08 19.17	S	9.4:	AA	25	L	4	46	3.5	2			JAC01

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Comet Bradfield 1987s [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 08 22.18	M	8.9	AA	8.0	B		20	4	0/			JAC01
1987 08 22.18	M	9.1	AA	25	L	4	46	3.7	2			JAC01
1987 08 22.40		9.0:		15	L	8	50	3	6			WIL02
1987 08 23.18	M	8.8	AA	8.0	B		20	4	1			JAC01
1987 08 23.18	M	8.8	AA	29	L	4	29	4.6	3			JAC01
1987 08 23.18	M	9.0	AA	25	L	4	46	3.9	3			JAC01
1987 08 25.04	S	9	: S	12.0	B		20	2.3				BOR
1987 08 29.16	M	8.6	AA	8.0	B		20					JAC01
1987 09 02.20	S	8.5:	AA	25	L	4	82					JAC01
1987 09 02.20	S	9.0:	AA	25	L	4	179					JAC01
1987 09 07.15	S	8.3:	AA	25	L	4	82					JAC01
1987 09 09.19	B	8.0	AA	25	L	4	82					JAC01
1987 09 13.51	S	8.0	AA	12.5	R	5	30	4.5	6	0.5	120	PEA
1987 09 14.15	B	8.1	AA	25	L	4	46	6.1	3	?	70	JAC01
1987 09 14.42	S	8.9	AA	15.3	L	8	108	2.5	2			HAS03
1987 09 14.48	S	7.9	AA	12.5	R	5	30	4	6	0.6	120	PEA
1987 09 17.49	S	7.5	AA	31	L	4	60	5	7	1.05	118	CLA
1987 09 20.17	M	7.5	AA	8.0	B		20	6	4	1.5	110	MOR
1987 09 23.13	B	7.6	AA	8.0	B		20	9	2			JAC01
1987 09 23.13	B	7.8	AA	25	L	4	46	7.2	3	0.02	100	JAC01
1987 09 24.09	B	7.9	AA	25	L	4	46	7	3	0.02	105	JAC01
1987 09 24.10	B	7.3	AA	8.0	B		20	9	2			JAC01
1987 09 25.03	S	7.9	AC	15	R	5	31	2.5	6	0.12	110	MOR03
1987 09 25.08	B	7.5	AA	25	L	4	46	7.5	4	?	250	JAC01
1987 09 25.76	S	6.5	SC	33	L	4	50	5.5	4/		105	BOA
1987 09 26.00				31.7	L	6	55		6	?	112	BOR
1987 09 26.00	S	7.4	HR	5.0	B		10	5.5				BOR
1987 09 26.00	S	7.4	HR	8.0	B		20	5	6			BOR
1987 09 26.03	S	7.8	AC	15	R	5	31	3.5	5			MOR03
1987 09 26.08	M	7.5	AA	25	L	4	46					JAC01
1987 09 27.00				31.7	L	6	55	2.0	5	0.15	110	BOR
1987 09 27.00	S	7.3	HR	5.0	B		10	5.5				BOR
1987 09 27.03	S	7.8	AC	15	R	5	31	4	5	0.11	110	MOR03
1987 09 27.15	M	6.9	AA	8.0	B		20	5.5	5	1.25	112	MOR
1987 09 27.49	S	7.2	AA	31	L	4	60	5	6	0.75	118	CLA
1987 09 27.50	S	7.3	AA	20	L	4	46	2.5	6	1	110	PEA
1987 09 28.10	M	7.7	NP	5.0	B		10					HAL
1987 09 28.49	S	7.4	AA	20	L	4	46	2.5	6	1	113	PEA
1987 09 28.51	M	6.9	AA	3.0	R	10	6					CLA
1987 09 28.51	M	7.2	AA	31	L	4	60	5	6	0.58	118	CLA
1987 09 28.52	M	7.0	AA	15	S	3	47					CLA
1987 09 30.76	S	6.4	SC	33	L	4	50	5.5	4/		100	BOA
1987 09 30.78	S	7.3	S	15.6	L	5	29		6			BOU
1987 09 30.78	S	7.5	AA	20.0	T	10	50	3	5/	0.12	85	COM
1987 10 02.42	S	7.2	AA	31.0	L	6	80	3.5	6	0.2		HAS03
1987 10 04.01	! S	7.5	AC	15	R	5	31	3	5	0.06	100	MOR03
1987 10 04.42	S	7.3	AA	31.0	L	6	80	3.5	5			HAS03
1987 10 05.00	B	7.1	AA	5.0	B		10	& 5	8	0.23	90	ROB03
1987 10 05.02	! S	7.6	AC	15	R	5	31	3.5				MOR03
1987 10 07.74	S	6.1	SC	33	L	4	50	6	5		92	BOA
1987 10 08.41	S	6.7	AA	31.0	L	6	80	4	5			HAS03
1987 10 08.77	S	7.2	AA	10.0	B		14	2.1	5			HAS02
1987 10 08.77	S	7.5	AA	8.0	B		20		4			KOC
1987 10 09.00	S	6.3	HR	5.0	B		10	4.5				BOR
1987 10 09.09	M	7.2	NP	5.0	B		10					HAL
1987 10 09.11	S	6.3:	NP	5.0	B		10					SCO01
1987 10 09.76	S	6.1	AA	5.0	B		10	8	6			ZAN
1987 10 09.76	S	6.3	AA	8.0	B		20	8	5/	0.53	100	ZAN

Comet Bradfield 1987s [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 09.76	S	7.2	AA	10.0	B		14	3.2	4			HAS02
1987 10 09.77	S	7.0:	S	10.0	B		14	2	5			LOO01
1987 10 10.10	S	6.2	NP	5.0	B		10					SCO01
1987 10 10.41	S	7.0	AA	31.0	L	6	80	4	5	0.4		HAS03
1987 10 11.10	M	6.2	NP	5.0	B		10					SCO01
1987 10 11.11	M	6.4	NP	15.2	L	8	38		7	0.3		SCO01
1987 10 11.12	S	6.6	AC	20.3	L	7	71			1.3	90	LEV
1987 10 11.77	M	6.4	AA	8.0	B		20		6/	0.75	90	BOU
1987 10 12.02	S	7.2	AC	3.5	B		7	6				MOR03
1987 10 12.06	B	6.5	AA	5.0	B		10	12	3	0.25	100	JAC01
1987 10 12.06	B	6.7	AA	8.0	B		20	9	4	0.33	100	JAC01
1987 10 12.09	M	6.6	NP	5.0	B		10					SCO01
1987 10 12.74	S	6.5	AA	5.0	B		7	6	8			MIK
1987 10 13.06	B	6.5	AA	5.0	B		10	10	3	0.33	100	JAC01
1987 10 13.06	B	6.7	AA	8.0	B		20	9	4	0.42	110	JAC01
1987 10 13.12	S	6.7	A	8.0	B		11	4.5	6	0.17	30	SPR
1987 10 13.41	S	6.5	AA	31.0	L	6	80	4	5	0.5		HAS03
1987 10 13.73	B	6.8	AA	5.0	B		10					REI01
1987 10 13.74	S	5.8	AA	33	L	4	50	7	4/		88	BOA
1987 10 13.75	S	6.0	AA	8.0	B		20	7	6	0.53	100	ZAN
1987 10 13.75	S	6.6	AA	10.0	B		14	3.6	4	0.36	90	HAS02
1987 10 13.76	S	6.1	AA	4.2	B		7	9	6	0.66	100	ZAN
1987 10 13.76	S	6.6	AA	3.0	B		8					HAS02
1987 10 13.77	S	6.7	S	11.0	L	7	32	5	6			SCH04
1987 10 13.77	S	6.8	AA	8.0	B		20	4.0	4			KOC
1987 10 13.99				31.7	L	6	55		6	0.5	100	BOR
1987 10 13.99	S	6.5	HR	5.0	B		10	4.5	5/	?		BOR
1987 10 13.99	S	6.6	HR	8.0	B		20	3	5	0.3	100	BOR
1987 10 14.00	B	6.5	AA	5.0	B		10	3	8	0.75	90	ROB03
1987 10 14.01	S	6.8	AC	15	R	5	31	3	5	0.28	95	MOR03
1987 10 14.02	B	7.0	A	10.0	B		14	4	7	0.33	100	SIM
1987 10 14.02	B	7.1	A	10.0	B		14	5	6			SIM01
1987 10 14.03	B	6.9	S	31	L	6	73					YOU01
1987 10 14.11	S	6.3	NP	15.2	L	8	38		7			SCO01
1987 10 14.11	S	6.6	A	8.0	B		11	4	6			SPR
1987 10 14.12	! M	6.9	NP	5.0	B		10			0.5	105	HAL
1987 10 14.75	S	6.7	AC	15.2	L	5	44	7	5	>1	90	MOE
1987 10 15.00	S	6.8	AA	15	R	5	31	3	5	0.33	90	MOR03
1987 10 15.11	S	6.5	A	8.0	B		11	4	6			SPR
1987 10 16.00	B	6.4	AA	5.0	B		10		8	2	90	ROB03
1987 10 16.11	! M	6.7	NP	5.0	B		10			0.67	100	HAL
1987 10 16.11	S	6.3	A	8.0	B		11	4.5	5	0.17	40	SPR
1987 10 16.13	S	6.2	AC	20.3	L	7	44		5			LEV
1987 10 16.43	S	6.4	AA	5.0	B		10		9			WIL02
1987 10 16.50				15	L	8	50	5	9	?	90	WIL02
1987 10 16.76	S	6.4	AA	10.0	B		14		4			HAS02
1987 10 16.76	S	6.7	S	20.0	T	10	50	5	5/	0.02	90	COM
1987 10 16.77	S	6.4	S	10.8	L	4	21	3	5	0.15	90	BUS01
1987 10 16.77	S	6.9	S	10.0	B		14	2	8			LOO01
1987 10 17.00	S	6.7	AA	15	R	5	31	3	5	0.32	80	MOR03
1987 10 17.12	S	6.3	A	8.0	B		11	4	5	0.17	50	SPR
1987 10 17.32	O	5.8	A	5.0	B	4	10	7	5	0.3	80	AND01
1987 10 17.40	S	6.4	AA	5.0	B		10		9			WIL02
1987 10 17.45				15	L	8	50	4	9	0.3	90	WIL02
1987 10 17.50	S	6.5	AA	3.0	B		8			1.5	83	PEA
1987 10 17.50	S	6.5	AA	20	L	4	45	3	6/	1.5	83	PEA
1987 10 17.51	M	6.2	AA	31	L	4	60	7	8	1.25	107	CLA
1987 10 17.52	M	6.0	AA	3.0	R	10	6			0.5		CLA

Comet Bradfield 1987s [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 17.74	S	6.1	AC	15.2	L	5	44	9	5	1.4	85	MOE
1987 10 17.76	S	6.1	AA	8.0	B		20	7	7	0.75	100	ZAN
1987 10 17.76	S	6.4	S	4.0	B		12	3	6			FEI
1987 10 17.77	S	6.6	S	5.0	B		10	5	6			COM
1987 10 17.78	M	6.1	AA	8.0	B		20		7	1.0	90	BOU
1987 10 17.79	S	6.0	AA	4.2	B		7	11	6/	1.02	100	ZAN
1987 10 17.80	B	6.6	S	5.0	B		7	8	5			THE
1987 10 17.82	S	6.7	S	8.0	B		15					BRI01
1987 10 18.11	S	6.2	NP	5.0	B		10		7	>1.0		SCO01
1987 10 18.12	S	6.1	A	8.0	B		11	4.5	5	0.17	50	SPR
1987 10 18.14	M	6.4	AA	5.0	B		10		8	3	95	MOR
1987 10 18.14	M	6.4	AA	8.0	B		20		8	3	95	MOR
1987 10 18.39	S	6.3	AA	31.0	L	6	80	5	6			HAS03
1987 10 18.50	M	6.2	AA	31	L	4	60	7	8	1.25	96	CLA
1987 10 18.74	S	6.1	AC	15.2	L	5	44	11	6	1.6	85	MOE
1987 10 18.74	S	6.2	AA	8.0	B		20		3	0.3		KOC
1987 10 18.74	S	6.4	AA	10.0	B		14	4.7	4	0.51	71	HAS02
1987 10 18.98	S	6.2	AA	8.0	B		20	& 5	6/			GRE
1987 10 18.99	B	6.7	A	5.0	B	5	10	8	3			SAB
1987 10 19.00	B	6.2	AA	5.0	B		10	& 5		2	90	ROB03
1987 10 19.06	B	6.9	AA	25	L	4	46	7.5	6	0.28	90	JAC01
1987 10 19.12	S	6.0	A	8.0	B		11	5	5	0.42	50	SPR
1987 10 19.74	M	6.2	AA	8.0	B		15	5	8	1.0	88	MIK
1987 10 19.74	M	6.3	AA	5.0	B		7	6	7	0.3		MIK
1987 10 19.74	S	6.2	AC	15.2	L	5	44	9	6	>1.1	85	MOE
1987 10 19.75	M	6.0	AA	8.0	B		20					ZAN
1987 10 19.75	S	6.0	AA	4.2	B		7	10	6/	1.0	100	ZAN
1987 10 19.75	S	6.0	AA	8.0	B		20	5.2	4	0.6		KOC
1987 10 19.75	S	6.0	AA	8.0	B		20	7	7	0.75	100	ZAN
1987 10 19.75	S	6.3	AA	3.0	B		8					HAS02
1987 10 19.75	S	6.3	AA	10.0	B		14	3.5	5	0.88	75	HAS02
1987 10 19.76	B	6.5	AA	5.0	B		10		5			REI01
1987 10 19.80	M	6.0	AA	8.0	B		20		6			BOU
1987 10 20.08	S	6.2	NP	5.0	B		10		7	>3.0		SCO01
1987 10 20.09	S	6.1	NP	0.0	E		1					SCO01
1987 10 20.10	M	6.2	AA	5.0	B		10			1.17	95	HAL
1987 10 20.12	S	6.0	A	8.0	B		11	5	5			SPR
1987 10 21.06	M	6.2	AA	5.0	B		10	15	4	1	90	JAC01
1987 10 21.06	M	6.3	AA	8.0	B		20	12	4	1	90	JAC01
1987 10 21.12	S	5.9	A	8.0	B		11	6	6	0.42	55	SPR
1987 10 21.51	S	6.3	AA	20	L	4	45	1.5	6/	0.75	78	PEA
1987 10 21.52	M	6.0	AA	31	L	4	60	6	8	1.30	91	CLA
1987 10 21.75	S	5.9	S	8.0	B		15					BRI01
1987 10 21.75	S	6.3	AA	8.0	B		15	4	7	0.58	55	KOR
1987 10 21.75	S	6.3	S	10.0	B		10	1.5	7	1	78	LOO01
1987 10 21.78	S	6.5	S	8.0	B		15	6	6			SCH04
1987 10 22.01	M	6.7	AC	15	R	5	31	3	6	0.45	80	MOR03
1987 10 22.01	S	6.6	AC	3.5	B		7	4		0.25	80	MOR03
1987 10 22.12	S	5.8	A	8.0	B		11	6	6	0.5	60	SPR
1987 10 22.51	M	5.9	AA	31	L	4	60	6	7	1.1	91	CLA
1987 10 22.74	S	5.8	S	8.0	B		15					BRI01
1987 10 22.77	S	6.5:	S	5.0	B		10		5			COM
1987 10 22.80	B	6.2	S	5.0	B		7	10	5			THE
1987 10 22.99				31.7	L	6	55	3.0	7	0.45	95	BOR
1987 10 22.99	S	6.6	HR	5.0	B		10	5.5	6	?		BOR
1987 10 23.02	S	5.9	S	5.0	B		7					CHE
1987 10 23.40	S	6.1	AA	31.0	L	6	80	5	5	0.7		HAS03
1987 10 23.76	M	5.8	AA	8.0	B		20		7			BOU

Comet Bradfield 1987s [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 24.50	M	5.8	AA	31	L	4	60	6	7	2.25	90	CLA
1987 10 24.51	M	5.6	AA	3.0	R	10	6			1.1	90	CLA
1987 10 24.52	S	6.5	AA	20	L	4	45	2	6	0.5		PEA
1987 10 25.75	S	5.4	S	8.0	B		15					BRI01
1987 10 25.75	S	6.0	AA	8.0	B		15	5	7	0.41	80	KOR
1987 10 26.00				31.7	L	6	55	2.7	7/			BOR
1987 10 26.00	B	6.2	AA	5.0	B		10			3	90	ROB03
1987 10 26.00	E	6.6	HR	5.0	B		10					BOR
1987 10 26.00	M	6.4	AA	15	R	5	31	3	5	0.55	80	MOR03
1987 10 26.00	S	6.3	AA	3.5	B		7	4		0.28	80	MOR03
1987 10 26.00	S	6.5	HR	5.0	B		10	5.5	7	0.4	95	BOR
1987 10 26.01	S	5.9	S	5.0	B		7					CHE
1987 10 26.02	B	6.3	A	5.0	B	5	10	10	7	0.42	81	SAB
1987 10 26.73	S	5.8	AC	15.2	L	5	44	&12	7	1.8	80	MOE
1987 10 26.73	S	5.9	AC	5.0	B		7	12	6			MOE
1987 10 26.75	B	6.4:	AA	5.0	B		7		5	1.5	60	LIN02
1987 10 26.77	M	5.8	AA	8.0	B		20		7	1.6	85	BOU
1987 10 27.11	S	5.7	A	8.0	B		11	6	5	0.5	80	SPR
1987 10 27.42	S	6.2	AA	31.0	L	6	63	6	5	0.8		HAS03
1987 10 28.77	M	5.9	AA	5.0	B		10		6			BOU
1987 10 28.99	S	5.8	S	5.0	B		7					CHE
1987 10 28.99	S	6.2	AA	3.5	B		7	7				MOR03
1987 10 29.76	M	5.7	AA	8.0	B		20		6/	1.5	82	BOU
1987 10 29.98	B	6.4	AA	8.0	B		20					GRE
1987 10 29.99	S	5.8	AA	8.0	B		20	& 7.5	7			GRE
1987 10 30.72	B	6.6	SP	5.0	B		7	10	7	0.4	95	KOS
1987 10 30.75	S	5.3	SC	5.0	B		10	22	6	1.2	72	BOA
1987 10 30.76	M	5.6	AA	8.0	B		20		7			BOU
1987 10 30.98	S	5.7	S	5.0	B		7					CHE
1987 10 31.75	M	5.7	AA	8.0	B		20		7			BOU
1987 10 31.75	S	5.8	AA	8.0	B		20	6	6/	1.0	50	ZAN
1987 10 31.76	S	5.7	AA	4.2	B		7	8	7			ZAN
1987 10 31.96	B	6.3	AA	8.0	B		20					GRE
1987 10 31.96	M	5.5	AA	8.0	B		20					GRE
1987 10 31.96	S	5.7	AA	8.0	B		20	& 6	8	&0.8		GRE
1987 10 31.98				31.7	L	6	68	2.3	8			BOR
1987 10 31.98	E	5.6	HR	5.0	B		10					BOR
1987 10 31.98	S	5.6	HR	5.0	B		10	6	7	0.5	70	BOR
1987 11 02.07	S	5.9	NP	5.0	B		7		6			SCO01
1987 11 02.74	S	5.9	S	8.0	B		15	10	7	0.13	90	SCH04
1987 11 02.97	E	5.7	HR	5.0	B		10					BOR
1987 11 02.97	S	5.6	HR	5.0	B		10	7	6			BOR
1987 11 03.73	O	5.6	A	8.0	B	4	12	8	6	1	75	AND01
1987 11 03.74	S	5.8	AA	8.0	B		20	6	6/	0.83	70	ZAN
1987 11 03.78	S	6.1	S	4.0	B		7	4	6			BUS01
1987 11 04.07	M	6.0	SC	5.0	B		10			1.25	85	HAL
1987 11 04.10	S	5.6	A	8.0	B		11	5	5	0.25	95	SPR
1987 11 04.71	B	6.3	SP	5.0	B		7	10	7	0.5	95	KOS
1987 11 04.72	M	5.9	AA	5.0	B		7	6.5	8	0.3	75	MIK
1987 11 04.73	M	5.9	AA	8.0	B		15	5	8	0.33	75	MIK
1987 11 05.10	S	5.8	A	8.0	B		11	5	5	0.5	90	SPR
1987 11 05.44	S	5.7	AA	31.0	L	6	63	4.5	5			HAS03
1987 11 05.72	M	5.9	AA	5.0	B		7	6	8			MIK
1987 11 05.73	M	5.9	AA	8.0	B		15	4.5	7	0.42	72	MIK
1987 11 05.74	B	5.9	AA	5.0	B		7	7	6/			LIN02
1987 11 05.74	B	5.9	AA	14.0	S	4	20	7	8			LIN02
1987 11 05.74	S	5.9	AA	8.0	B		15	3	7	0.25	85	KOR
1987 11 05.76	B	5.9	AA	5.0	B		10		5			REI01

Comet Bradfield 1987s [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 11 05.97	E	5.7	HR	5.0	B		10	3.5	6			BOR
1987 11 05.98	S	5.6	S	5.0	B		7					CHE
1987 11 06.01	S	5.6	AA	8.0	B		20	& 5	5/			GRE
1987 11 06.11	S	5.9	A	8.0	B		11	5	4	0.5	90	SPR
1987 11 06.73	S	5.8	AA	8.0	B		20	5	6/	0.66	70	ZAN
1987 11 06.75	B	5.9	AA	5.0	B		10		5			REI01
1987 11 06.97	E	5.8	HR	5.0	B		10	5	6			BOR
1987 11 06.99	M	5.0:	AA	8.0	B		20	& 7	7/			GRE
1987 11 06.99	S	5.6	AA	8.0	B		20					GRE
1987 11 07.42	S	6.2	AA	5.0	B		10		6			WIL02
1987 11 07.72	B	5.8	AA	5.0	B		7	7	7/	0.53	45	LIN02
1987 11 07.72	S	5.8	AA	8.0	B		20	5	7	0.66	70	ZAN
1987 11 07.74	M	5.8	AA	8.0	B		15	5	7	0.73	75	MIK
1987 11 07.74	S	5.7	AA	8.0	B		15	4	7/	0.33	80	KOR
1987 11 07.96	M	5.4	AA	8.0	B		20					GRE
1987 11 07.96	S	5.5	AA	8.0	B		20	& 6.5	7/	& 0.5		GRE
1987 11 07.97	E	5.6	HR	5.0	B		10	5.5	6	1.1	67	BOR
1987 11 08.39	S	5.5	S	16	L	6	31	7	6	> 0.33		SUG01
1987 11 08.51	M	5.3	AA	31	L	4	60	5	7	0.9	112	CLA
1987 11 08.72	O	5.5	A	6.0	B	4	9	8	7	0.5	75	AND01
1987 11 08.73	S	5.8:	AA	10.0	B		14					HAS02
1987 11 08.75	B	5.8	AA	5.0	B		10		4			REI01
1987 11 09.07	S	5.7	NP	5.0	B		10		6	4.0		SCO01
1987 11 09.08	S	5.6	NP	0.0	E		1					SCO01
1987 11 09.80	M	6.9	AA	7.5	R	7	25	4	8			GAL
1987 11 09.81	S	6.1	AA	6	R	6	20	4	6			CAR
1987 11 10.07	M	5.5	SC	5.0	B		10			2.5	80	HAL
1987 11 10.11	M	5.7	AA	8.0	B		20	8.5	7	2	75	MOR
1987 11 10.36	S	5.8	AA	31.0	L	6	63	6.5	5	0.75		HAS03
1987 11 10.41	S	5.8	S	16	L	6	31	6	7	> 0.5		SUG01
1987 11 10.71	O	5.5	A	8.0	B	4	20	8	7	0.5	70	AND01
1987 11 10.75	I	6.4	AA	11.4	T	9	50	3				MAR02
1987 11 10.80	M	6.0	AA	6	R	6	20	4	6	0.1	70	CAR
1987 11 10.81	M	6.3	AA	7.5	R	7	25	10	7	0.33	80	GAL
1987 11 11.00	M	5.8	AA	3.5	B		7	4		0.50	75	MOR03
1987 11 11.41	S	5.5	S	16	L	6	31	6	6	> 0.5		SUG01
1987 11 11.70	O	5.5	A	8.0	B	4	20	8	6	0.6	70	AND01
1987 11 11.72	B	5.4	AA	3.0	B		8					HAS02
1987 11 11.72	B	5.4	AA	10.0	B		14	4.1	6	1.07	65	HAS02
1987 11 11.72	I	5.6	AA	0.0	E		1					HAS02
1987 11 11.72	S	5.4	AA	3.0	B		8			0.63		HAS02
1987 11 11.72	S	5.6	AA	8.0	B		20	5.5	6	0.63		KOC
1987 11 11.72	S	5.6	AA	10.0	B		14					HAS02
1987 11 11.75	I	6.4	AA	11.4	T	9	50	3				MAR02
1987 11 11.75	M	6.0	AA	9	R	15	50	10		1		ROD01
1987 11 11.75	S	5.6	AA	4.2	B		7	9	7/	2.0	55	ZAN
1987 11 11.76	I	5.5	AA	0.0	E		1					ZAN
1987 11 11.76	S	5.7	AA	8.0	B		20	6	7	1.25	55	ZAN
1987 11 11.80	M	6.2	AA	7.5	R	7	25	4	8	0.15	80	GAL
1987 11 11.82	M	6.0	AA	6	R	6	20	4	5	0.1	70	CAR
1987 11 11.94	B	5.6	S	7.0	B		10	6		0.86	69	DEA
1987 11 11.98	M	5.7	AA	3.5	B		7	5		0.55	75	MOR03
1987 11 12.09	M	5.5	SC	5.0	B		10			2.5	75	HAL
1987 11 12.10	S	5.5	AC	0.7	E		1					LEV
1987 11 12.10	S	5.6	NP	5.0	B		10		7	7.0		SCO01
1987 11 12.12	S	5.7	AC	3.0	R	5	6					LEV
1987 11 12.15	M	5.3	AA	5.0	B		10			4	80	MOR
1987 11 12.15	M	5.3	AA	8.0	B		20			4	80	MOR

Comet Bradfield 1987s [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 11 12.52	M	5.3	AA	31	L	4	60	5	7	1.5		CLA
1987 11 12.72	B	6.1	AA	5.0	B		7	8	7	&1		LIN02
1987 11 12.76	B	5.8	AA	10.0	B		14	2.9	6	1.33	69	HAS02
1987 11 12.76	S	4.8	AC	5.0	B		7	14	6	>0.5	70	MOE
1987 11 12.77	I	5.5	AA	0.0	E		1					HAS02
1987 11 12.77	S	5.0	AC	15.2	L	5	44	12	6	1.5	70	MOE
1987 11 12.94	B	5.7	S	7.0	B		10	6		1.13	69	DEA
1987 11 12.98	S	5.5	S	5.0	B		7					CHE
1987 11 12.99	B	6.2	AA	8.0	B		20					GRE
1987 11 13.00	B	6.0	AA	5.0	B		10	&10		2	80	ROB03
1987 11 13.00	S	5.5	AA	8.0	B		20	& 7	6			GRE
1987 11 13.69	S	5.3	AC	8.0	R	12	57	10	6			MOE
1987 11 13.70	S	5.6	AC	48.5	L	4	115	13	6	>0.8	60	MOE
1987 11 13.76	S	5.9	AA	8.0	B		10	3.2	7	1.56	69	SHA02
1987 11 13.85	B	5.5	AA	15	T	5	38	8		1.5		CRE
1987 11 13.98	E	5.9	HR	5.0	B		10	4.5	7	1.2	65	BOR
1987 11 14.72	B	5.5	AC	35	T	6	96	0.2	3	3.2	298	AMO
1987 11 14.75	B	5.2	AC	5.0	B		7	10	6	>1.0	60	MOE
1987 11 14.75	S	5.0:	S	4.0	B		7	15	6	4.5	55	BUS01
1987 11 14.76				14.5	L	5	36	4	8	0.05	95	BUS01
1987 11 14.76	S	5.4	AA	8.0	B		15	7	7	1.0	78	KOR
1987 11 14.76	S	5.4	AC	15.2	L	5	44	12	7	1.8	70	MOE
1987 11 14.76	S	5.9	AA	8.0	B		20	2.7	6	2.69	62	SHA02
1987 11 14.77	I	6.5	AA	20	T	6	100	6		0.12		PUJ
1987 11 14.78	M	6.1	AA	7.5	R	7	25	4	7	0.23	80	GAL
1987 11 14.80	B	5.4	AA	5.0	B		7	12	6	>1	50	LIN02
1987 11 14.80	B	5.9	AA	11.4	T	4	13	8	6	1	50	GOM01
1987 11 14.81	M	5.9	AA	6	R	6	20	5	4	0.3	70	CAR
1987 11 14.85	B	6.6	AA	4.0	B		7					GAL01
1987 11 14.98				31.7	L	6	55	5.4	7			BOR
1987 11 14.98	E	5.6	HR	5.0	B		10	4.5	6/	0.8	50	BOR
1987 11 14.98	S	5.4	S	5.0	B		7			>3	80	CHE
1987 11 15.00	B	5.7	AA	5.0	B		10	&10		3	80	ROB03
1987 11 15.00	S	5.0	AA	5.0	B		7	& 8	4/			GRE
1987 11 15.01	M	6.0	AA	3.5	B		7	4		0.40	70	MOR03
1987 11 15.06	S	5.5	NP	5.0	B		10		7			SCO01
1987 11 15.07	S	5.3	NP	0.0	E		1					SCO01
1987 11 15.08	S	4.6	AC	0.7	E		1					LEV
1987 11 15.13	M	5.5	AA	8.0	B		20					MOR
1987 11 15.70	B	5.5	AA	5.0	B		7	5.6	6			LIN02
1987 11 15.70	S	5.7	AC	15.2	L	5	44	10	6	>1.0	60	MOE
1987 11 15.73	B	5.9	AA	10.0	B		14	3.1	6	1.53	76	HAS02
1987 11 15.73	S	5.5	AA	8.0	B		20	1.8	7	1.07		KOC
1987 11 15.74	M	6.0	AA	5.0	B		7	6	7	1.35	60	MIK
1987 11 15.74	S	5.5	AA	4.2	B		7	10	7/	2.0	55	ZAN
1987 11 15.75	B	5.4	AC	35	T	6	96	0.2	3	3.8	296	AMO
1987 11 15.75	M	5.9	AA	8.0	B		15	7	8	1.8	58	MIK
1987 11 15.76	B	5.6	AA	5.0	B		10		4		72	REI01
1987 11 15.78	M	6.0	AA	7.5	R	7	25	6	6	0.35	70	GAL
1987 11 15.96	B	5.7	AA	5.0	B		10			2	80	ROB03
1987 11 15.99	B	6.0	AA	8.0	B		20					GRE
1987 11 15.99	M	5.2	AA	8.0	B		20	& 7	7/			GRE
1987 11 15.99	S	5.7	AA	8.0	B		20					GRE
1987 11 16.09	M	5.5	AA	5.0	B		10					MOR
1987 11 16.09	M	5.5	AA	8.0	B		20					MOR
1987 11 16.11	M	5.6	SC	5.0	B		10			2.5	68	HAL
1987 11 16.14	S	5.6	NP	5.0	B		10		7			SCO01
1987 11 16.36	S	5.2	AA	31.0	L	6	63	8	5	0.7		HAS03

Comet Bradfield 1987s [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 11 16.72	B	5.8	AA	5.0	B		7	9	6	1.07	45	LIN02
1987 11 16.73	S	5.3	S	4.0	B		7	12	4/	2	58	BUS01
1987 11 16.74	S	5.6	S	5.0	B		10	10	7	1.5	70	COM
1987 11 16.78	M	6.1:	AA	7.5	R	7	25	4	7			GAL
1987 11 16.79	I	5.4	AA	11.4	T	9	50	5		0.17		MAR02
1987 11 16.83	B	5.7	AA	3.0	R	5	6					GAL01
1987 11 16.98	B	5.7	HR	8.0	B		20	5	7	2	75	BOR
1987 11 16.98	E	5.6	HR	5.0	B		10	6	6/	2.2	75	BOR
1987 11 16.98	O	5.4:	AA	8.0	B		20					MAR03
1987 11 16.99	B	6.3	AA	8.0	B		20					GRE
1987 11 16.99	S	5.3	AA	8.0	B		20	& 8.5	7/			GRE
1987 11 17.10	S	5.2	A	8.0	B		11	4.5	5	1	90	SPR
1987 11 17.36	S	5.4	AA	31.0	L	6	63	7	5			HAS03
1987 11 17.73	M	5.5	AA	8.0	B		15	7	8	2.67		MIK
1987 11 17.78	M	5.9	AA	15	R	15	36	6	4	0.3	60	CAR
1987 11 17.78	M	6.1	AA	15	R	15	37	12	6	0.67	80	GAL
1987 11 17.97	E	5.6	HR	5.0	B		10	6	6	1.3	72	BOR
1987 11 18.71	M	5.5	AA	5.0	B		7	7	8			MIK
1987 11 18.73	S	5.3	S	8.0	B		15		5			BRI01
1987 11 18.76	M	6.1	AA	7.5	R	7	25	5	6	0.20	75	GAL
1987 11 18.77	M	5.6	AA	8.0	B		15	6.5	7	2.3		MIK
1987 11 18.97	M	5.5	AA	3.5	B		7	6.5		0.80	75	MOR03
1987 11 19.09	S	5.7	NP	5.0	B		10		6	4.0		SCO01
1987 11 19.10	M	5.3	AA	8.0	B		20					MOR
1987 11 19.11	M	5.4	AA	5.0	B		10					MOR
1987 11 19.78	M	6.1	AA	7.5	R	7	25	3				GAL
1987 11 19.83	M	5.8	AA	6	R	6	20	4	3			CAR
1987 11 19.83	S	5.5	AA	8.0	B		10	4.3	7	4.05	77	SHA02
1987 11 19.97				31.7	L	6	55	2.9	7			BOR
1987 11 19.97	E	5.5	HR	5.0	B		10	6.5	6	2.0	65	BOR
1987 11 19.97	I	5.3	HR	0.0	E		1					BOR
1987 11 19.98	B	5.8	AA	5.0	B		7					GRE
1987 11 19.98	S	5.4	AA	5.0	B		7	& 7	7/			GRE
1987 11 20.08				5.0	B		10			3	63	HAL
1987 11 20.08	B	5.2	SC	0.8	E		1			2	63	HAL
1987 11 20.08	S	5.6	NP	5.0	B		10		6			SCO01
1987 11 20.11	M	5.3	AA	5.0	B		10					MOR
1987 11 20.11	M	5.3	AA	8.0	B		20					MOR
1987 11 20.14	S	4.8	AC	3.5	B		7					LEV
1987 11 20.15				15	L	4	30		7	3		LEV
1987 11 20.38	S	5.5	AA	31.0	L	6	63	7	6			HAS03
1987 11 20.71	S	5.7	S	3.5	B		7		8	1.2		FEI
1987 11 20.75	S	5.3	AA	0.0	E		1	12	8	1.5	65	ZAN
1987 11 20.75	S	5.6	AA	8.0	B		10	4.3	7	3.11	71	SHA02
1987 11 20.76	S	5.4	AA	4.2	B		7	10	8	1.5	65	ZAN
1987 11 20.77	M	5.5	AA	8.0	B		20					ZAN
1987 11 20.77	S	5.5	AA	8.0	B		20	7	7	1.16	75	ZAN
1987 11 20.83	B	5.3	AA	3.5	B		8	10	4	2		GOM
1987 11 20.83	M	6.0	AA	7.5	R	7	25	5	8	0.33	80	GAL
1987 11 20.85	B	5.7	AA	5.0	B		7			1.25	62	GOM01
1987 11 20.85	B	5.8	AA	11.4	T	4	13	12	8	0.83	62	GOM01
1987 11 20.97				31.7	L	6	55	3.8	7/			BOR
1987 11 20.97	E	5.6	HR	5.0	B		10	7.5	6	2.5	70	BOR
1987 11 20.97	I	5.4	HR	0.0	E		1					BOR
1987 11 20.98	M	5.9	AC	3.5	B		7	4		0.85	70	MOR03
1987 11 21.08	M	5.3	AA	5.0	B		10					MOR
1987 11 21.09	S	5.6	NP	5.0	B		10		5	3.0		SCO01
1987 11 21.72	M	5.4	AA	8.0	B		20					ZAN

Comet Bradfield 1987s [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 11 21.72	S	5.4	AA	8.0	B		20	7	7	1.5	70	ZAN
1987 11 21.74	S	5.3	AA	0.0	E		1	12	8	1.5	65	ZAN
1987 11 21.74	S	5.3	AA	4.2	B		7	10	7	1.5	65	ZAN
1987 11 21.75	B	5.3	AC	35	T	6	96	0.4	5	2.3	301	AMO
1987 11 21.79	M	5.8	AA	7.5	R	7	25	4	8	1.75	80	GAL
1987 11 21.80	M	6.3	AA	8.0	B		15	5.5	7	1.73	61	MIK
1987 11 21.83	I	5.5	AA	15	T	5	62					LLA
1987 11 21.84	M	5.9	AA	7.5	R	6	22	10	4	1.6	50	CAR
1987 11 21.85	B	5.7	AA	5.0	B		7					GAL01
1987 11 21.96	B	5.7	AA	5.0	B		10	&10		2	80	ROB03
1987 11 21.97	M	6.0	AC	3.5	B		7	5.5		0.87	65	MOR03
1987 11 22.39	S	5.5	AA	31.0	L	6	63	7.5	5	1		HAS03
1987 11 22.71	M	6.0	AA	8.0	B		15	6	7	1.8		MIK
1987 11 22.78	B	6.0	AA	5.0	B		7					GAL01
1987 11 22.98	B	5.5	AA	5.0	B		10	&10		3	70	ROB03
1987 11 23.00	S	5.4	AA	8.0	B		20	& 5.0	7	&0.8		GRE
1987 11 23.01	S	5.5	SC	5.0	B		7			&4		CHE
1987 11 23.09	S	5.2	AC	0.7	E		1					LEV
1987 11 23.09	S	5.4	A	8.0	B		11	4.5	5	1	70	SPR
1987 11 23.10	I	5.2	AA	0.7	E		1					MOR
1987 11 23.11	M	5.4	AA	5.0	B		10	9.5	7	3.25	70	MOR
1987 11 23.12	M	5.4	AA	8.0	B		20	8.5	6			MOR
1987 11 23.15	S	5.7	NP	5.0	B		10		5			SCO01
1987 11 23.39	S	5.8	S	16	L	6	31	5	6	>0.67		SUG01
1987 11 23.72	B	5.6	AC	15.6	L	10	54	7	7	1.3	96	KOS
1987 11 23.75	B	5.4	AA	5.0	B		10		4		69	REI01
1987 11 23.76	S	5.7	AA	8.0	B		10	4.3	7	1.57	73	SHA02
1987 11 24.16	S	5.4	NP	5.0	B		10		5	3.0		SCO01
1987 11 24.44	S	5.6	S	16	L	6	31	5	5	>0.5		SUG01
1987 11 24.97	E	5.8	HR	5.0	B		10	6.5	6	1.35	60	BOR
1987 11 24.97	E	6.0	HR	31.7	L	6	55	3.8	7			BOR
1987 11 25.10	M	5.7	SC	5.0	B		10			3	60	HAL
1987 11 25.10	S	5.5	A	8.0	B		11	4.5	4	1.5	70	SPR
1987 11 25.76	B	5.6	AA	10.0	B		14	2.7	5	0.8	65	HAS02
1987 11 25.80	M	5.9	AA	7.5	R	7	25	8	6	0.50	80	GAL
1987 11 25.98	B	5.5	AA	5.0	B		10	5		1.5	70	ROB03
1987 11 26.15	M	5.3	AA	5.0	B		10	8.5	6/	3.25	75	MOR
1987 11 26.16	M	5.3	AA	5.0	B		10	7	6/			MOR
1987 11 26.73	S	5.7	AC	15.2	L	5	44	14	7	1.2	70	MOE
1987 11 26.97	M	5.6	AC	3.5	B		7	5		1.0	55	MOR03
1987 11 27.08	M	5.3	AA	8.0	B		20					MOR
1987 11 27.78	S	5.9	AA	8.0	B		10	4.1	8	2.11	69	SHA02
1987 11 27.80	M	5.9	AA	7.5	R	7	25	7	6			GAL
1987 11 28.08	M	5.8	SC	5.0	B		10					HAL
1987 11 28.10	S	5.5	A	8.0	B		11	4.5	4	1.5	70	SPR
1987 11 28.72	S	5.3	S	8.0	B		15		5			BRI01
1987 11 28.76	B	5.7	AC	5.0	B		7					KOS
1987 11 28.77	B	5.2	AC	35	T	6	96	0.2	5	2.8	334	AMO
1987 11 29.12	S	5.3	AC	20.3	L	7	56					LEV
1987 11 29.70	S	5.8:	AC	15.2	L	5	44	&10	6	&0.6	70	MOE
1987 11 29.73	B	6.0:	SC	6.3	B		8	10	3	0.25		GEE
1987 11 29.73	S	5.9	AA	8.0	B		10	4.1	7	1.33	73	SHA02
1987 11 29.75	S	5.4	S	8.0	B		15		5	2		BRI01
1987 11 29.81	M	5.9	AA	7.5	R	7	25	11	8			GAL
1987 11 30.78	B	6.0	AC	5.0	B		7					KOS
1987 11 30.80	O	5.7	A	6.0	B	4	9	9	5	0.3	60	AND01
1987 12 01.77				25.4	J	6	72	4	8	0.05	190	BUS01
1987 12 01.80	O	5.7	A	6.0	B	4	9	9	5	0.5	60	AND01

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Comet Bradfield 1987s [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 12 02.12	S	5.6	A	8.0	B		11	5	3	1.5	65	SPR
1987 12 02.41	S	5.5	AA	31.0	L	6	63	7	5	1.5		HAS03
1987 12 02.42	S	6.0	S	16	L	6	31	5	6	>0.33		SUG01
1987 12 02.70	O	5.7	A	8.0	B	4	20	9	5	0.3	60	AND01
1987 12 02.75	S	5.7	AC	15.2	L	5	44	10	6	&0.7	70	MOE
1987 12 02.97				31.7	L	6	55	3.0	7			BOR
1987 12 02.97	E	5.8	HR	5.0	B		10	9	6	1.0	55	BOR
1987 12 02.97	S	5.6	S	5.0	B		7					CHE
1987 12 03.01	M	5.6	AA	5.0	B		7					GRE
1987 12 03.01	S	5.7	AA	5.0	B		7	& 7	7/			GRE
1987 12 03.01	S	5.9	AC	3.5	B		7	8				MOR03
1987 12 03.41	S	5.2	AA	31.0	L	6	63	5	4	1.5		HAS03
1987 12 03.73	M	5.9	AA	5.0	B		7	4.5	7	0.4		MIK
1987 12 03.74				25.4	J	6	72	4	8	0.03	200	BUS01
1987 12 03.79	B	6.4	AC	5.0	B		7					KOS
1987 12 03.79	O	5.7	A	6.0	B	4	9	9	5	0.3	60	AND01
1987 12 03.79	S	5.7	S	4.0	B		12		7			FEI
1987 12 03.95	S	5.7	AA	8.0	B		20	& 8	5/			GRE
1987 12 04.10	M	5.5	SC	5.0	B		10					HAL
1987 12 04.97	S	6.2	AA	3.5	B		7	10				MOR03
1987 12 05.10	S	5.7	A	8.0	B		11	5	2	1.5	60	SPR
1987 12 05.99	S	6.0	AA	3.5	B		7	8				MOR03
1987 12 06.42	S	5.6	S	16	L	6	31	6	6	>0.33		SUG01
1987 12 06.68	O	5.7	A	8.0	B	4	20	10	5	0.3	60	AND01
1987 12 06.97	E	5.8	HR	5.0	B		10	7.5	6	1.2	60	BOR
1987 12 06.97	E	6.3	HR	31.7	L	6	55	3.7	6/			BOR
1987 12 06.99	S	5.7	S	5.0	B		7					CHE
1987 12 07.03	S	6.2	AA	3.5	B		7	9				MOR03
1987 12 07.38	S	5.3	AA	31.0	L	6	63	7	6			HAS03
1987 12 07.70	B	5.7	AC	5.0	B		7	11	6	0.55	68	MOE
1987 12 07.71	S	5.3	AA	4.2	B		7	12	6/	1.52	55	ZAN
1987 12 07.71	S	5.4	S	3.5	B		7		7			FEI
1987 12 07.71	S	5.6	S	4.0	B		7	10	4/	3.5	50	BUS01
1987 12 07.71	S	5.8	AC	5.0	R		10	10	6			MOE
1987 12 07.71	S	5.8	AC	15.2	L	5	44	12	6	1.2	60	MOE
1987 12 07.73				25.4	J	6	72	4	7	0.03	200	BUS01
1987 12 07.73	S	5.7	AA	8.0	B		10	8.0	7	1.76	81	SHA02
1987 12 07.74	S	6.2	AA	8.0	B		15	7	6/	0.66	60	KOR
1987 12 07.79	I	5.5	AA	20	T	6	62	5				PUJ
1987 12 08.13	M	5.9	AA	8.0	B		20		4			MOR
1987 12 08.70	S	5.7	AC	5.0	B		7	11	6	0.7	70	MOE
1987 12 08.70	S	5.7	AC	15.2	L	5	44	12	6	1.5	70	MOE
1987 12 08.72	S	6.0	AA	8.0	B		20	2.5				KOC
1987 12 08.75	B	6.1	AA	10.0	B		14	5.8	5	0.72	75	HAS02
1987 12 08.76	S	5.9	AA	8.0	B		15	10	7	0.83	60	KOR
1987 12 08.83	S	5.8	AA	8.0	B		10	6.0	6	2.23	77	SHA02
1987 12 08.98	B	5.8	AA	5.0	B		10			2	70	ROB03
1987 12 09.01	S	5.7	S	5.0	B		7					CHE
1987 12 09.02				31.7	L	6	55	3.1	7			BOR
1987 12 09.02	E	5.8	HR	5.0	B		10	6.5	6	2.0	65	BOR
1987 12 09.10	M	6.0	SC	5.0	B		10			3	58	HAL
1987 12 09.11	B	5.7	SC	0.8	E		1					HAL
1987 12 09.71	S	5.4	S	4.0	B		7	10	4/	3.5	50	BUS01
1987 12 09.72				25.4	J	6	72	3		0.05	190	BUS01
1987 12 09.74	B	6.2	AC	15.6	L	10	54	4	8	0.6	123	KOS
1987 12 09.76	S	6.0	AA	8.0	B		15	10	6/	0.75	60	KOR
1987 12 09.78	S	5.9	AC	5.0	B		7	10	6			MOE
1987 12 10.10	S	5.9	AC	0.7	E		1					LEV

Comet Bradfield 1987s [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 12 10.73	B	6.0	AC	5.0	B		7					KOS
1987 12 10.74		5.8	AA	0.0	E		1					MIK
1987 12 10.74	M	5.8	AA	8.0	B		15	6.5	6	2.0	59	MIK
1987 12 11.08	M	5.8	AA	8.0	B		20	7	4/			MOR
1987 12 11.09	S	5.8	A	8.0	B		11	6	3	2	50	SPR
1987 12 11.69	S	5.7	AC	10.0	B		14	11	6	1.0	60	MOE
1987 12 11.72	M	5.7	AA	5.0	B		7	7	7	3.7	60	MIK
1987 12 11.73	M	5.8	AA	8.0	B		15	6	6	3.0	60	MIK
1987 12 11.75	M	5.4	AA	4.2	B		7					ZAN
1987 12 11.75	S	5.4	AA	4.2	B		7	12	6	2.8	55	ZAN
1987 12 11.76	S	5.4	AA	0.0	E		1					ZAN
1987 12 11.77	S	5.5	AA	8.0	B		20	10	6/	2.83	55	ZAN
1987 12 11.79		5.5	AA	0.0	E		1	&10		&0.75		MIK
1987 12 11.83	O	5.7	A	5.0	B	4	10	10	5	0.7	55	AND01
1987 12 12.01				31.7	L	6	55	4.0	6/			BOR
1987 12 12.01	E	5.7	HR	5.0	B		10	8.0	5	2.4	65	BOR
1987 12 12.71	S	5.6	AC	5.0	R		10	13	6	0.8	58	MOE
1987 12 12.71	S	5.6	AC	15.2	L	5	44	14	6	1.3	58	MOE
1987 12 12.72	S	5.5	AA	8.0	B		20	10	6/			ZAN
1987 12 12.73	S	5.4	AA	4.2	B		7	12	6			ZAN
1987 12 12.74	S	5.5	AC	15.2	L	5	38	14	6	1.3	62	MOE
1987 12 12.85	S	5.9	AA	8.0	B		20	5.4	6	1.81	61	SHA02
1987 12 12.98	S	5.7	S	5.0	B		7					CHE
1987 12 13.10	S	5.9	A	8.0	B		11	6	3	2	50	SPR
1987 12 13.70	B	5.9	AC	15.6	L	10	54	5	8	0.4	59	KOS
1987 12 13.74	S	6.0	AA	5.0	B		7	9.0	5	2.68	51	SHA02
1987 12 13.97	E	6.1	HR	5.0	B		10	7.5	6	3.0	58	BOR
1987 12 13.98	S	5.8	S	5.0	B		7			>5	60	CHE
1987 12 14.11	M	5.8	AA	8.0	B		20	8	4			MOR
1987 12 14.73	S	6.2	AA	8.0	B		20	5.0				KOC
1987 12 14.74	B	6.0	AA	10.0	B		14	7.2	5	1.6	71	HAS02
1987 12 14.81	O	5.8	A	6.0	B	4	9	10	5	1	55	AND01
1987 12 14.98	S	6.0	AA	3.5	B		7	8		0.9	60	MOR03
1987 12 15.73	M	5.5	AA	4.2	B		7					ZAN
1987 12 15.73	S	5.4	AA	4.2	B		7	14	6	2.7	50	ZAN
1987 12 15.76	S	5.6	AA	8.0	B		20	10	6/	&2.0	50	ZAN
1987 12 15.82	S	6.0	AA	10.0	B		14	8.0	4	2.0	60	HAS02
1987 12 16.39	S	5.6	AA	31.0	L	6	63	7	5			HAS03
1987 12 16.42	S	5.4	S	16	L	6	31	6	6	>0.33		SUG01
1987 12 16.88	O	5.8	A	6.0	B	4	9	10	5	0.8	55	AND01
1987 12 17.41	S	5.6	AA	31.0	L	6	63	5.2	5			HAS03
1987 12 17.99	S	6.1	AA	3.5	B		7	10	4	0.8	65	MOR03
1987 12 18.01	S	5.9	S	5.0	B		7			>4	60	CHE
1987 12 18.40	S	5.5	AA	31.0	L	6	63	6.4	5	0.5		HAS03
1987 12 18.74	S	5.6	AA	8.0	B		20	10	6	2.7	55	ZAN
1987 12 18.93	S	5.8	AA	8.0	B		10	9.6	5	1.74	71	SHA02
1987 12 19.00	E	5.8	HR	5.0	B		10	9.5	5/	2.8	63	BOR
1987 12 19.00	I	5.5	HR	0.0	E		1	24	0			BOR
1987 12 19.02	B	6.3	AA	5.0	B		7					GRE
1987 12 19.02	S	5.8	AA	5.0	B		7	&12	7			GRE
1987 12 19.40	S	5.6	AA	31.0	L	6	63	5.9	4			HAS03
1987 12 19.72		5.8	AA	0.0	E		1					MIK
1987 12 19.72	M	6.0	AA	5.0	B		7	8	7	2.5	57	MIK
1987 12 19.72	S	5.8	AC	5.0	B		7	9	6	0.8	60	MOE
1987 12 19.73	M	6.1	AA	8.0	B		15	7.5	6	2.2	57	MIK
1987 12 19.73	S	5.8	AC	15.2	L	5	44	11	6	1.4	60	MOE
1987 12 19.73	S	5.9	AC	5.0	R		10	8	7	0.5	60	MOE
1987 12 19.76	S	5.4	AA	0.0	E		1			0.5	55	ZAN

Comet Bradfield 1987s [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 12 19.77	S	5.6	AA	8.0	B		20	11	6/	2.72	55	ZAN
1987 12 19.80	S	5.6	AA	4.2	B		7	14	6/	3.2	55	ZAN
1987 12 19.81	B	5.9	AA	10.0	B		14	11	4	1.8	61	HAS02
1987 12 19.83	I	5.9	AA	0.0	E		1					HAS02
1987 12 19.87	M	6.5	AA	7.5	R	7	25	5	6			GAL
1987 12 20.09	M	5.9	AA	8.0	B		20	9	3			MOR
1987 12 20.42	S	5.7	S	16	L	6	31	7	6			SUG01
1987 12 20.44	S	6.0	AA	31.0	L	6	63	6.7	4			HAS03
1987 12 20.77	S	5.7	AA	8.0	B		20	11	6	2.72	60	ZAN
1987 12 20.78	S	5.6	AA	4.2	B		7	15	6	3.2	60	ZAN
1987 12 20.83	I	5.0	AA	20	T	6	100	4				PUJ
1987 12 20.83	I	5.5	AA	6	R	15	20	15				RUI
1987 12 20.88	M	6.7	AA	7.5	R	7	25	8	6			GAL
1987 12 21.10	M	6.0	AA	8.0	B		20	9	3/			MOR
1987 12 21.11	M	5.8	SC	5.0	B		10			2	62	HAL
1987 12 21.44	S	6.0	AA	31.0	L	6	63	6.0	4	0.4		HAS03
1987 12 21.76		5.8	AA	0.0	E		1					MIK
1987 12 21.76	M	6.2	AA	8.0	B		15	7	6	2.8		MIK
1987 12 21.77	M	6.0	AA	5.0	B		7	7	7	3.0		MIK
1987 12 21.80	B	6.2	AC	5.0	B		7		8			KOS
1987 12 21.84	S	6.0	AA	8.0	B		10	9.6	6	1.33	65	SHA02
1987 12 21.97	S	5.9	AA	3.5	B		7	8	4	0.9	70	MOR03
1987 12 22.00	B	6.3	AA	5.0	B		7					GRE
1987 12 22.00	S	5.4	AA	5.0	B		7	&15	6			GRE
1987 12 22.02	S	5.9	AA	8.0	B		20	& 8	5			GRE
1987 12 22.12	I	5.5	AA	0.7	E		1					MOR
1987 12 22.12	M	5.5	AA	5.0	B		10	9.5	7	9	65	MOR
1987 12 22.15	M	5.6	AA	8.0	B		20	8.5				MOR
1987 12 22.16				25.6	L	4	67			0.58	250	MOR
1987 12 22.42	S	5.9	S	16	L	6	31	6	5	>0.67		SUG01
1987 12 22.69	S	5.8	AC	15.2	L	5	38	10	6	1.1	70	MOE
1987 12 22.69	S	5.9	AC	5.0	B		7	8	5	0.5	60	MOE
1987 12 22.69	S	5.9	AC	5.0	R		10	8	5			MOE
1987 12 22.69	S	6.0	AC	15.2	L	5	44	9	6	1.0	60	MOE
1987 12 22.72	B	5.8	AC	0.8	E		1					MOE
1987 12 22.74	S	5.8	AA	8.0	B		10	7.2	6	1.82	68	SHA02
1987 12 22.74	S	6.2	AA	8.0	B		15	8	5/	0.66	50	KOR
1987 12 22.76	M	6.0	AA	5.0	B		7	7	7	2.9		MIK
1987 12 23.17	S	6.2	AC	7.8	R	6	12			1.5	240	LEV
1987 12 23.42	S	6.0	S	16	L	6	31	6	5	>0.67		SUG01
1987 12 23.74	S	6.3	AA	5.0	B		10	12	5	0.83	45	KOR
1987 12 23.97	E	6.0	HR	5.0	B		10	8.5	5	3.0	55	BOR
1987 12 24.12	M	5.9	AA	8.0	B		20	8.5	4			MOR
1987 12 24.19	M	5.8	SC	5.0	B		10			2	61	HAL
1987 12 24.71	S	6.0	AC	15.2	L	5	44	10	6	0.5	70	MOE
1987 12 24.75	B	6.8	AC	15.6	L	10	54	3	7	0.4	98	KOS
1987 12 25.12	M	6.0	AA	8.0	B		20					MOR
1987 12 25.74	S	6.0	AA	5.0	B		7	6	7	1.0		MIK
1987 12 25.87	O	6.5	A	5.0	B	4	10	8	5	0.5	50	AND01
1987 12 26.40	S	6.3	AA	31.0	L	6	63	6.5	4			HAS03
1987 12 26.41	S	6.3	S	16	L	6	31	7	6	>0.67		SUG01
1987 12 26.72	S	6.0	AA	8.0	B		20	3.3	4	0.91	30	KOC
1987 12 26.79	B	6.1	AC	35	T	6	96	0.2	6	1.6	295	AMO
1987 12 26.91	I	6.8	AA	7.5	R	7	25	4				GAL
1987 12 26.99	S	6.4	AA	3.5	B		7	12	5			MOR03
1987 12 27.05				31.7	L	6	55	5.9	5/			BOR
1987 12 27.05	E	6.1	HR	5.0	B		10					BOR
1987 12 27.05	S	6.0	HR	5.0	B		10	8.0	5	1.7	62	BOR

Comet Bradfield 1987s [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 12 27.43	S	5.9	S	16	L	6	31	6	6	>0.25		SUG01
1987 12 27.75	S	6.0	AA	8.0	B		20	11	6			ZAN
1987 12 27.78	S	6.1	AA	8.0	B		20	6.9	5	2.01	72	SHA02
1987 12 28.15	M	6.2	SC	5.0	B		10			2	65	HAL
1987 12 28.38	S	6.4:	S	16	L	6	31	4	5			SUG01
1987 12 28.72	B	6.0:	AA	10.0	B		14	10	3	0.87	70	HAS02
1987 12 28.72	S	6.1	AA	8.0	B		20	3.0	4	0.93	60	KOC
1987 12 28.83	O	6.7	A	6.0	B	4	9	8	6	0.3	50	AND01
1987 12 29.39	S	6.7	S	16	L	6	31	5	5	>0.33		SUG01
1987 12 29.72	S	6.4	AA	5.0	B		7	6	6			MIK
1987 12 29.86	S	6.2	AA	8.0	B		20	6.2	5			SHA02
1987 12 29.97	S	6.4	AA	3.5	B		7	9				MOR03
1987 12 30.03	B	6.7	AA	5.0	B		10	5		0.83	70	ROB03
1987 12 30.40	S	6.6	S	16	L	6	31	5	6	>0.33		SUG01
1987 12 30.75	S	6.5	AA	5.0	B		7	5.5	7			MIK
1987 12 30.81	B	7.2	AC	5.0	B		7	2	6			KOS
1987 12 30.99				31.7	L	6	55	4.1	5/	0.4	50	BOR
1987 12 30.99	B	6.7	AA	5.0	B		10	5		0.5	60	ROB03
1987 12 30.99	S	6.2	HR	5.0	B		10	10	5			BOR
1987 12 31.70	S	6.4	AC	15.2	L	5	44	8	8	0.4	80	MOE
1987 12 31.75	S	6.8	AA	8.0	B		20	5.4	5	1.01	77	SHA02
1988 01 01.39	S	6.8	S	16	L	6	31	6	6	>0.5		SUG01
1988 01 01.72	S	6.8	AA	5.0	B		7	5	7			MIK
1988 01 01.74	S	6.2	AA	8.0	B		20	10	5			ZAN
1988 01 01.79	M	7.1	AC	33	L	4	50	6	4	?0.08		BOA
1988 01 02.83	S	6.5	AA	8.0	B		20	6.0	5	1.17	71	SHA02
1988 01 03.13	M	7.4	SC	5.0	B		10					HAL
1988 01 03.74	S	6.5	AA	8.0	B		20	7.7	4	0.54	60	SHA02
1988 01 04.90	S	6.9:	AA	8.0	B		20		4			SHA02
1988 01 05.76	S	6.7	AA	8.0	B		10	7.7	4	0.88	69	SHA02
1988 01 06.42	S	6.7	S	16	L	6	31	7	6	>1		SUG01
1988 01 06.69	S	6.6	AC	5.0	R		10					MOE
1988 01 06.74	S	6.6	AC	15.2	L	5	44	12	5	1.1	60	MOE
1988 01 06.75	S	6.6	AA	8.0	B		15	10	4	0.58	70	KOR
1988 01 06.99	S	7.2	S	5.0	B		7					CHE
1988 01 07.10	M	7.1	SC	5.0	B		10			1.5	50	HAL
1988 01 07.73	B	6.3	AA	10.0	B		14	9.1	3	0.87	61	HAS02
1988 01 07.73	S	6.3	AA	3.0	B		8		3			HAS02
1988 01 07.90	S	7.1	AA	8.0	B		20	4.3	5	0.38	69	SHA02
1988 01 08.42	S	7.0	S	16	L	6	31	5	6	>0.5		SUG01
1988 01 08.76	M	7.0	AA	5.0	B		7	8	6	0.6		MIK
1988 01 08.76	S	7.0	AC	10.0	B		14	10	5			MOE
1988 01 08.77	M	7.0	AA	8.0	B		15	7	6	0.9		MIK
1988 01 08.78	S	7.3	AC	48.5	L	4	115	11	5			MOE
1988 01 08.83	M	6.7	AA	5.0	B		10	10	3/	0.80		BOA
1988 01 08.85	S	6.5	AA	3.0	B		8					HAS02
1988 01 08.85	S	6.7	AA	10.0	B		14	9.4	3	0.27	37	HAS02
1988 01 09.41	S	6.9	S	16	L	6	31	6	6	>0.5		SUG01
1988 01 09.70	S	7.1	AC	5.0	R		10	10	4			MOE
1988 01 09.70	S	7.2	AC	15.2	L	5	38	11	4	0.8	70	MOE
1988 01 09.72	S	7.1	AC	15.2	L	5	44	12	4	1.1	62	MOE
1988 01 09.72	S	7.3	AC	15.2	L	5	100	10	4	0.5	62	MOE
1988 01 09.73	M	6.8	AA	5.0	B		10	9.5	3/	0.75		BOA
1988 01 09.73	S	7.1	AC	5.0	B		7	11	4	0.5	62	MOE
1988 01 09.74	B	7.2	AC	35	T	6	96	2.9	5	0.51	295	AMO
1988 01 09.79	S	6.5	AA	8.0	B		20	6	5	1.5	50	ZAN
1988 01 09.80	S	6.6	AA	4.2	B		7	8	5/			ZAN
1988 01 09.88	B	6.5	AA	3.0	B		8					HAS02

Comet Bradfield 1987s [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1988 01 09.88	S	6.6	AA	10.0	B		14	5.8	4	1.0	55	HAS02
1988 01 10.81	S	6.9	AA	8.0	B		10	8.0	5	1.26	73	SHA02
1988 01 11.55	S	6.7	S	16	L	6	31	5	6	>0.33		SUG01
1988 01 11.71	S	7.1	AC	5.0	R		10	11	4			MOE
1988 01 11.71	S	7.2	AC	15.2	L	5	44	12	4	1.2	70	MOE
1988 01 11.71	S	7.3	AC	15.2	L	5	100	11				MOE
1988 01 11.72	S	7.1	AC	15.2	L	5	38	12	4	1.2	75	MOE
1988 01 11.77	S	6.4	S	10.0	B		14	6.8	4	1.13	69	HAS02
1988 01 11.79	S	7.0	AA	8.0	B		15	4	4/	0.50	65	KOR
1988 01 12.74	M	6.9	AA	8.0	B		15	7.5	6	1.2		MIK
1988 01 12.76	S	7.1	AA	5.0	B		7	8	7	0.5		MIK
1988 01 12.78	S	7.1	AA	8.0	B		15	4	4	0.42	65	KOR
1988 01 13.20	M	7.5	AC	5.0	B		10					HAL
1988 01 13.70	S	7.3	AC	5.0	R		10	9	3			MOE
1988 01 13.70	S	7.4	AC	15.2	L	5	44	10	4	1.1	78	MOE
1988 01 13.70	S	7.6	AC	15.2	L	5	100	9	4	0.5	78	MOE
1988 01 13.71	S	7.4	AC	15.2	L	5	38	10	4	1.2	78	MOE
1988 01 14.76	S	7.5	AA	8.0	B		10	5.4	5	0.75	56	SHA02
1988 01 14.84	S	7.4	AC	15.2	L	5	44	9	4	0.8	72	MOE
1988 01 15.77	B	7.3	S	10.0	B		14	5.1	3	0.27	73	HAS02
1988 01 20.76	B	7.8	S	10.0	B		14	7.0	3	0.33	55	HAS02
1988 01 20.90	S	7.7	AA	8.0	B		10	9.0	5			SHA02
1988 01 21.71	S	8.1	AC	5.0	R		10	8	3			MOE
1988 01 21.71	S	8.1	AC	15.2	L	5	38	8	3	0.5	70	MOE
1988 01 21.71	S	8.1	AC	15.2	L	5	44	8	3	0.5	70	MOE
1988 01 21.71	S	8.3	AC	15.2	L	5	100	7	3			MOE
1988 01 22.92	S	8.1	AA	20.0	R	14	40	5.6	5			SHA02
1988 01 23.72	S	8.5	AC	15.2	L	5	44	8	2	0.5	70	MOE
1988 01 23.72	S	8.8	AC	15.2	L	5	100	6	2			MOE
1988 01 23.78	B	7.8	AC	35	T	6	96	1.6	5	0.28	290	AMO

Comet Rudenko 1987u

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 08 22.22	S	9.7	A	44.5	L	4	63	4	1			SPR
1987 08 23.21	S	9.9	A	14.0	S	4	28	3	1			SPR
1987 08 24.20	S	10.1	A	20.0	C	10	64	3	1			SPR
1987 08 25.11	S	10.1	AC	15	R	8	30		2			LEV
1987 08 25.21	S	9.9	A	20.0	C	10	64	3	2			SPR
1987 08 26.06	S	10.3	A	31.7	L	6	68	1.9	2			BOR
1987 08 26.87	S	9.7	AC	25.4	J	6	59	3.5	0/			BOU
1987 08 29.23	S	9.8	L	25	L	4	46	4.2	2			JAC01
1987 08 29.25	S	9.8	L	8.0	B		20	4	2/			JAC01
1987 08 31.18	S	9.6	L	25	L	4	46	4.8	2			JAC01
1987 08 31.18	S	9.8	L	8.0	B		20	5	1			JAC01
1987 08 31.19	S	9.6	A	20.0	C	10	64	3	2			SPR
1987 08 31.20	S	10.1	L	6.0	R	13	32	2.9	3			JAC01
1987 08 31.85	S	10.3	AC	20.0	T	10	50	2	2			COM
1987 08 31.87	S	9.5	AC	25.4	J	6	59	2.8	2		155	BOU
1987 09 01.19	S	9.4	A	20.0	C	10	64	3	3			SPR
1987 09 01.24	S	9.7	L	25	L	4	46	4.2	2			JAC01
1987 09 01.24	S	9.8	L	8.0	B		20	5.5	2			JAC01
1987 09 02.06	S	9.7	AC	15	R	5	62	2.2	3			MOR03
1987 09 02.23	B	9.5	L	25	L	4	46					JAC01
1987 09 02.23	S	9.3	L	25	L	4	46					JAC01
1987 09 03.05	S	9.9	AC	15	R	5	62	2.0	3			MOR03
1987 09 03.20	S	9.0	AA	25	L	4	46					JAC01
1987 09 07.18	S	8.7	AA	25	L	4	46					JAC01

Comet Rudenko 1987u [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 09 08.21	S	8.8:	AA	25	L	4	46					JAC01
1987 09 09.20	S	8.7	AA	25	L	4	46					JAC01
1987 09 14.16	S	8.5	AA	25	L	4	46	4.7	3			JAC01
1987 09 14.83	S	8.7	AC	25.4	J	6	59	2.5	3/			BOU
1987 09 15.82	S	8.6	AC	25.4	J	6	59	2.5	4			BOU
1987 09 20.13	M	8.5:	S	25.6	L	4	67	3.5	6			MOR
1987 09 23.14	B	8.3	AA	25	L	4	46	5.7	3			JAC01
1987 09 24.10	B	8.3	AA	25	L	4	46	5.5	1			JAC01
1987 09 24.11	B	8.2:	AA	8.0	B		20	7	0			JAC01
1987 09 25.08	S	8.4:	AA	25	L	4	46					JAC01
1987 09 26.02	! S	8.6	AC	15	R	5	62	1.4	4			MOR03
1987 09 26.08	S	8.2:	AA	25	L	4	46					JAC01
1987 10 10.82	S	7.5	AA	31.0	L	6	80	2.5	6			HAS03
1987 10 16.49				20	L	6	55			0.17	305	HAL
1987 10 16.49	! M	7.6	NP	5.0	B		10					HAL
1987 10 17.81	S	6.4	AA	31.0	L	6	80	2.5	6	&0.7		HAS03
1987 10 19.80	S	6.7	AA	31.0	L	6	80	4	5	&0.5		HAS03
1987 10 20.17	S	7.5	AA	8.0	B		20	4	8			ZAN
1987 10 20.18	S	7.5	AA	25.4	L	4	36	4	8/			ZAN
1987 10 21.47	S	6.8	AA	8.0	B		20	& 6	2/			JAC01
1987 10 21.47	S	6.8	AA	25	L	4	46		3/			JAC01
1987 10 21.50	! S	7.9:	AC	41	L	4	83					HAL
1987 10 23.18	S	8.0	S	11.0	L	7	32	2	6			SCH04
1987 10 24.41	! S	7.6	AC	15	R	5	31	2	4			MOR03
1987 10 24.83	S	7.5	AA	20	L	4	45	2.5	5			PEA
1987 10 24.84	S	7.3	AA	31	L	4	60	5	4			CLA
1987 10 26.42	! S	7.8	AC	15	R	5	31	3	4			MOR03
1987 10 30.18	S	7.1	AA	8.0	B		20	& 3	5			BOU
1987 10 30.52	M	7.5:	AC	41	L	4	83					HAL
1987 10 31.18	S	7.2	SC	33	L	4	50	4	3/	5	272	BOA
1987 10 31.18	S	7.3	AA	4.2	B		7	5	7/			ZAN
1987 10 31.43	S	7.6	AC	15	R	5	31	3.5	5			MOR03
1987 11 01.18	S	7.3	AA	8.0	B		20		4			BOU
1987 11 01.30	B	7.9	S	7.0	B		10	5.6				DEA
1987 11 01.41	S	7.2	A	5.0	B		10	6	4			BOR
1987 11 02.28	B	8.0	S	7.0	B		10					DEA
1987 11 02.42	S	7.7	AC	15	R	5	31	3.5	5			MOR03
1987 11 03.17	S	7.6	SC	33	L	4	50	3.5	4	4	271	BOA
1987 11 03.29	B	8.0	S	7.0	B		10					DEA
1987 11 03.50	! M	7.8	AC	5.0	B		10					HAL
1987 11 05.84	S	6.8	AA	31.0	L	6	63	4	6			HAS03
1987 11 06.47	M	6.9	AA	8.0	B		20	9	3			JAC01
1987 11 06.47	M	7.1	AA	25	L	4	46	7.5	4			JAC01
1987 11 06.83	S	7.0	AA	31.0	L	6	63	4.5	6	0.2		HAS03
1987 11 09.47	M	7.3	AA	25	L	4	46	7	4/			JAC01
1987 11 09.81	S	7.7	AA	31.0	L	6	63	4.5	4			HAS03
1987 11 10.84	S	8.0	AA	31.0	L	6	63	3	2			HAS03
1987 11 11.43	! S	8.8	AC	15	R	5	31	3.5	2			MOR03
1987 11 11.51	! M	8.0	AC	41	L	4	83					HAL
1987 11 12.83	S	7.5	AA	31	L	4	60	6	4			CLA
1987 11 16.81	S	8.5	AA	15.3	L	8	52	6	3			HAS03
1987 11 21.53	! S	8.1:	NP	20	L	6	55					HAL

Comet Levy 1987y

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 11.1	S	9.5:	AC	20.3	L	7	44		3			LEV
1987 10 12.08	S	9.3	AC	20.3	L	7	44	3	3			LEV

Comet Levy 1987y [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 14.10	!	S 9.3	NP	20	L	6	55					HAL
1987 10 14.76		S 9.6	AC	15.2	L	5	44	2.5	3			MOE
1987 10 15.10		S 9.2	AC	20.3	L	7	44	3	3			LEV
1987 10 16.10	!	M 9.2	AC	41	L	4	83					HAL
1987 10 17.11		M 9.1	AA	25.6	L	4	45					MOR
1987 10 17.74		S 9.5	AC	15.2	L	5	44	2	2			MOE
1987 10 18.11		M 9.1	AA	25.6	L	4	45	4	2/			MOR
1987 10 18.74		S 9.6	AC	15.2	L	5	44	2	2			MOE
1987 10 18.77		S 9.6	AA	20.3	T	10	85	2.0	2			HAS02
1987 10 19.74		S 9.6	AA	10.0	B		14	2.7	2			HAS02
1987 10 19.74		S 9.8	AC	15.2	L	5	44	2	3			MOE
1987 10 19.79		S 9.4	AC	25.4	J	6	59	2.6	4			BOU
1987 10 20.10		S 9.8:	NP	15.2	L	8	38		3			SCO01
1987 10 20.11		S 10.4	A	20.0	C	10	64	3.0	2			SPR
1987 10 21.11		S 10.2	A	20.0	C	10	64	2.0	1			SPR
1987 10 22.12		S 10.6	A	20.0	C	10	64	2.0	1			SPR
1987 10 22.98		S 9.8	A	31.7	L	6	68	2.3	0			BOR
1987 10 23.78		S 10.0	AC	25.4	J	6	73	2.6	1			BOU
1987 10 25.99		S 9.8	A	31.7	L	6	68	3.4	1			BOR
1987 10 28.78		S 10.0	AC	25.4	J	6	59		0/			BOU
1987 10 29.02	!	S 10.6	AC	44.5	L	4	80	2.5	1			MOR03
1987 10 29.76		S 10.5	AC	25.4	J	6	73	1.8	0/			BOU
1987 11 11.08		I[13.0		41	L	4	183					HAL
1987 11 12.13		S 12.5:	NP	25.6	L	4	45	1.5	1			MOR
1987 11 12.15		S 12.6:	AC	25.6	L	4	111					LEV
1987 11 17.07				91.4	L	4			1	0.03	343	SCO02
1987 11 19.07		C 17	FA	91.4	L	4			1			SCO02
1987 11 20.08		S 13.0:		154.9	L	14	654	3	0			LEV
1987 11 21.73		S 12.9	AC	33	L	4	150					BOA

Comet Ichimura 1987d,

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 11 24.27		S 8.1	NP	5.0	B		10		2			SCO01
1987 11 24.29		c 17	FA	91.4	L	4		24.0				SCO02
1987 11 24.33				40.6	L	5	101	11	3	0.33	210	LEV
1987 11 24.33		S 8.3	AC	7.8	R	6	12					LEV
1987 11 25.23				20	L	6	55	8				HAL
1987 11 25.23		S 8.6	NP	5.0	B		10					HAL
1987 11 25.33				40.6	L	5	101	20	3			LEV
1987 11 25.33		S 7.4	AC	7.8	R	6	12					LEV
1987 11 25.35		S 8.3	AA	25.6	L	4	45	11	2			MOR
1987 11 26.25		S 7.2	AA	5.0	B		10	16	0/			MOR
1987 11 26.33				40.6	L	5	101	18	4			LEV
1987 11 26.33		S 7.7	AC	7.8	R	6	12					LEV
1987 11 28.26		S 8.4	NP	5.0	B		10					HAL

Comet Furuyama 1987f,

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 11 25.17		S 10.2	AC	40.6	L	5	101	3	3	0.17	110	LEV
1987 11 25.38		M 10.4	NP	25.6	L	4	45	2.3	3/			MOR
1987 11 26.24		M 10.8	PC	41	L	4	83					HAL
1987 11 26.26		M 10.4	NP	25.6	L	4	67	3.1	4			MOR
1987 11 27.20		S 10.9	VB	33.3	L	5	60	1.5	3			SHA02
1987 11 27.36		S 9.9	AC	40.6	L	5	101	3	4	&0.17	80	LEV
1987 11 27.46		M 10.4	NP	25.6	L	4	67	2.4	4			MOR
1987 11 28.48		S 10.0	AC	40.6	L	5	101					LEV

Comet Furuyama 1987f, [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 11 29.13	S	10.5:		31.7	L	6	110	1.5				BOR
1987 11 29.44	M	10.7	PC	41	L	4	83					HAL
1987 11 29.59	S	10.5:	S	31.0	L	6	63	3.5	3			HAS03
1987 12 01.75	S	10.6	AA	31.0	L	6	63	3.0	2			HAS03
1987 12 07.62	S	11.0	A	31.0	L	6	63	1.3	1			HAS03
1987 12 08.86	S	10.6	VB	20.0	R	14	40	2.0	2			SHA02
1987 12 08.89	S	11.2	AC	36.0	T	11	325	0.8	3			KOR
1987 12 09.90	S	11.4	AC	36.0	T	11	325	0.7	2/			KOR
1987 12 10.06	S	10.6	VB	20.0	R	14	40	2.0	2			SHA02
1987 12 10.18	M	10.1	PC	41	L	4	83					HAL
1987 12 11.95	S	10.3	AC	40.6	L	4	57	1.5	3/			ZAN
1987 12 12.09	S	10.6	A	31.7	L	6	68	2.0	3			BOR
1987 12 12.73	S	10.4	AC	15.2	L	5	38	6	1			MOE
1987 12 13.15	S	9.7	A	20.0	C	10	64	1.5	1			SPR
1987 12 13.90	S	11.0:	VB	20.0	R	14	40					SHA02
1987 12 13.90	S	[11.0:	VB	20.0	R	14	40					SHA02
1987 12 14.01	S	10.3	A	31.7	L	6	68	1.5	3			BOR
1987 12 14.06	S	9.7	S	14	S	4	19					CHE
1987 12 14.55	S	10.4	A	31.0	L	6	63	3.0	2			HAS03
1987 12 15.79	S	10.3	AC	30.5	L	5	47	2	3			ZAN
1987 12 16.57	S	10.2	S	16	L	6	31	3	2			SUG01
1987 12 16.59	S	10.5	A	31.0	L	6	63	3.0	2			HAS03
1987 12 16.92	B	10.9	AC	35	T	6	96	0.2	5			AMO
1987 12 17.58	S	10.0	S	16	L	6	31	3	2			SUG01
1987 12 17.68	S	10.9	A	31.0	L	6	63	3.0	1			HAS03
1987 12 17.89	S	10.3	AC	30.5	L	5	47	4	3/			ZAN
1987 12 18.55	S	11.5	A	31.0	L	6	63	2.9	1			HAS03
1987 12 18.95	S	11.1	VB	20.0	R	14	40	4.0	2			SHA02
1987 12 19.02	S	10.4	A	31.7	L	6	68	2.6	2			BOR
1987 12 19.92	S	10.3	AC	25.4	L	4	36	4	3			ZAN
1987 12 20.72	M	10.1	AC	33	L	4	150	1.5	2			BOA
1987 12 20.81	S	10.3	AC	40.6	L	4	57	3	3/			ZAN
1987 12 21.20	M	9.9	AC	41	L	4	83					HAL
1987 12 21.55	S	11.4	A	31.0	L	6	63	2.1	1			HAS03
1987 12 22.20	M	9.8	NP	25.6	L	4	67	2.4	3/			MOR
1987 12 22.57	S	11.8	A	31.0	L	6	63	2.5	1			HAS03
1987 12 22.72	S	10.8	AC	15.2	L	5	44	4	1			MOE
1987 12 22.80	S	10.8	AC	15.2	L	5	38	5	1			MOE
1987 12 23.60	S	12.0	A	31.0	L	6	166	3.1	1			HAS03
1987 12 23.92	B	11.4	AC	35	T	6	96	0.1	3			AMO
1987 12 26.55	S	12.3	A	31.0	L	6	166	2.5	0			HAS03
1987 12 26.75	B	11.2	AC	35	T	6	96		3			AMO
1987 12 28.23	M	10.0	PC	41	L	4	83					HAL
1988 01 07.09	M	9.8	PC	41	L	4	83					HAL
1988 01 08.78	M	9.6	AC	33	L	4	50	5	1	0.10	63	BOA
1988 01 09.74	S	9.9	AC	33	L	4	50	4.5	1	0.07	66	BOA
1988 01 09.77	S	10.2	AC	30.5	L	5	47	4	3			ZAN
1988 01 11.78	S	10.3	AC	20.3	T	10	85	2.0	1			HAS02
1988 01 13.16	M	9.8	PC	41	L	4	83					HAL
1988 01 14.81	S	10.5	VB	33.3	L	5	45	2.0	3			SHA02

Comet Jensen-Shoemaker 1987g,

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 12 16.19		16.0:		154.9	L	14	654	0.75	2			LEV
1987 12 21.15	C	16.7	FA	91.4	L	4		0.48		0.01	339	SCO02

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Comet Liller 1988a

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1988 01 13.10	S	9.9	AC	15	L	4	35	5	1			LEV
1988 01 14.08	M	9.5	AC	41	L	4	83		2/			HAL
1988 01 20.75	S	9.2	S	8.0	B		20	2.6	4			HAS02

Periodic comet Grigg-Skjellerup (1986m)

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 06 14.21	S	11.9	L	25	L	4	46	& 1.5	2			JAC01
1987 06 26.21	S	11.7	L	25	L	4	46	1.7	4			JAC01
1987 06 27.21	S	11.5	L	15	S	4	42	2.2	2			JAC01
1987 06 27.21	S	11.8	L	25	L	4	82	1.5	3/			JAC01
1987 06 30.18	S	11.8	L	25	L	4	46	2	3			JAC01
1987 07 16.20	S	11.5	L	25	L	4	46	2.3	3			JAC01
1987 07 25.17	S	11.8:	L	25	L	4	46	1.5	1			JAC01
1987 08 03.92	S	12.2	AC	25.4	J	6	73	1.5	0/			BOU

Periodic comet Wild 3 (1987e)

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 27.44	C	20.9	FA	91.4	L	4			9			SCO02
1987 11 24.44	C	20.4	FA	91.4	L	4			9			SCO02
1988 01 15.24	C	19.2	FA	91.4	L	4						SCO02

Periodic comet Kohoutek (1986k)

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 16.43	C	16.1	FA	91.4	L	4			6	0.03	278	SCO02
1987 10 19.40	I[13.0			41	L	4	244					HAL
1987 10 20.10	S	14.3	AC	51.0	L	4	186	0.4	2			BOU
1987 10 26.33		13.0:		154.9	L	14	654					LEV
1987 10 26.42				91.4	L	4			6			SCO02
1987 10 30.08	S	14.0	AC	51.0	L	4	186	0.4	4			BOU
1987 11 01.08	S	14.2	AC	51.0	L	4	265	0.5	3			BOU
1987 11 16.45	C	15	FA	91.4	L	4						SCO02
1987 11 16.45	c	18.6	FA	91.4	L	4		1.25	5	0.09	287	SCO02
1987 11 16.99	S	12.1	VB	33.3	L	5	45	0.9	2			SHA02
1987 11 17.42	S	13.6	CA	41	L	4	244		1/			HAL
1987 11 20.47	S	13.7	CA	41	L	4	183					HAL
1987 11 20.49		12.5:		154.9	L	14	654					LEV
1987 11 24.43				91.4	L	5	180		3			SCO01
1987 11 27.48	S	13.8	CA	41	L	4	244					HAL
1987 11 27.50	S	13.4	NP	25.6	L	4	156	0.65	2			MOR
1987 12 18.03	S	13.3	AC	40.6	L	4	114	1.2	3			ZAN
1987 12 19.03	S	12.7	VB	33.3	L	5	60	2.0	2			SHA02
1987 12 21.49	M	12.7	CA	41	L	4	83					HAL
1987 12 29.48	S	12.9	CA	41	L	4	183					HAL
1988 01 10.22	S	13.1	CA	41	L	4	183					HAL
1988 01 13.28	S	13.0	CA	41	L	4	183					HAL

Periodic comet Borrelly (1987p)

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 09 17.76	S	10.8	A	31	L	4	60	2	3			CLA
1987 09 18.54	S	11	V	15.2	L	5	76					SEA
1987 09 20.44	! M	11.5	NP	25.6	L	4	67	2.0	3			MOR
1987 09 23.56	S	11.6	V	15.2	L	5	76					SEA
1987 09 27.50	! M	11.1	NP	25.6	L	4	67	1.4	4			MOR
1987 09 27.64	S	10.4	A	31	L	4	60	3	4			CLA

Periodic comet Borrelly (1987p) [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 09 27.75	S	10.8	VN	20	L	4	46	2	5/			PEA
1987 09 28.81	S	10.8	VN	20	L	4	46	2	4/			PEA
1987 09 30.83	S	10.8	VN	20	L	4	46	2.5	4			PEA
1987 10 01.42	! M	11.3	PC	41	L	4	83					HAL
1987 10 12.57	S	10.4	AC	25.4	L	4	46	2	6			SEA
1987 10 16.34	! M	10.2	PC	41	L	4	83					HAL
1987 10 17.47	S	9.3	V	8.0	B		15					SEA
1987 10 17.62	S	9.6	VN	20	L	4	45	3.5	6/			PEA
1987 10 17.68	S	10.5:	S	31.0	L	6	80	2	4			HAS03
1987 10 17.75	M	8.8	AA	31	L	4	60	7	7			CLA
1987 10 18.47	M	9.6	AA	25.6	L	4	67	2.9	6			MOR
1987 10 19.69	S	10.2:	S	31.0	L	6	80	3	3			HAS03
1987 10 20.06	S	9.2	AC	51.0	L	4	75		3			BOU
1987 10 21.56	S	8.6	AA	31	L	4	60	5	6			CLA
1987 10 22.76	S	9.5	AA	20	L	4	45	3	6			PEA
1987 10 22.83	M	8.4	AA	31	L	4	60	6	6			CLA
1987 10 23.77	S	9.5	AA	20	L	4	45	3	6			PEA
1987 10 24.65	M	8.5	AA	31	L	4	60	6	6			CLA
1987 10 24.76				4.0	B		8	7	4			PEA
1987 10 24.76	S	9.4	AA	20	L	4	45	3.5	6			PEA
1987 10 26.31	! M	9.4	AC	41	L	4	83					HAL
1987 10 27.53	S	8.7	AA	8.0	B		15	& 8				SEA
1987 10 30.04	S	8.5	AC	51.0	L	4	75	& 2.5	3			BOU
1987 10 30.06	S	8.6	AC	8.0	B		20					BOU
1987 11 08.49	M	8.2	AA	8.0	B		15	6	6			SEA
1987 11 08.56	M	7.9	AA	31	L	4	60	6	5			CLA
1987 11 10.25	! M	9.0	PC	41	L	4	83					HAL
1987 11 11.02	B	8.1	S	7.0	B		10	16				DEA
1987 11 11.63	S	9.3	S	31.0	L	6	63	4	3			HAS03
1987 11 12.46	M	7.7	AA	8.0	B		15		6			SEA
1987 11 12.63	M	7.6	AA	31	L	4	60	9	6			CLA
1987 11 13.22	! S	9.1	AC	5.0	B		10					HAL
1987 11 14.93	S	7.9	S	10.0	B		14	5.3	4			HAS02
1987 11 15.16	S	7.9	NP	5.0	B		10					SCO01
1987 11 15.16	S	8.2	NP	15.2	L	8	38		4			SCO01
1987 11 16.15	S	7.8	NP	5.0	B		10		3			SCO01
1987 11 16.97	S	8.6	AA	15.0	L	8	67	2.8	4			SHA02
1987 11 17.57	S	8.5	AA	31.0	L	6	63	4	5			HAS03
1987 11 18.48	M	7.6	AA	8.0	B		15	8	5			SEA
1987 11 19.05	B	8.6	AC	35	T	6	96	0.03	7	0.07	65	AMO
1987 11 19.23	S	7.7	NP	5.0	B		10		4			SCO01
1987 11 19.71	S	8.6	AA	31.0	L	6	63	3.5	3			HAS03
1987 11 19.97	S	8.4	AA	8.0	B		20	2.7	4			SHA02
1987 11 20.24	S	7.6	NP	5.0	B		10		3			SCO01
1987 11 20.44	M	7.4	AA	8.0	B		15		6			SEA
1987 11 20.90	S	7.6	AA	8.0	B		20	5	4/			ZAN
1987 11 20.95	S	8.4	AA	8.0	B		20	4.1	4			SHA02
1987 11 20.95	S	8.4	AA	15.0	L	8	67	2.2	4			SHA02
1987 11 21.00	B	8.4	AC	35	T	6	96	0.04	5	0.09	65	AMO
1987 11 21.19	S	7.7	NP	5.0	B		10		3			SCO01
1987 11 21.34	M	8.5	NP	5.0	B		10					HAL
1987 11 21.43	M	7.2	AA	8.0	B		15	10	6			SEA
1987 11 21.44	M	7.2	AA	5.0	B		10	12	5			SEA
1987 11 21.71	S	8.4	S	15.3	L	8	52	5.5	4			HAS03
1987 11 22.06	M	7.8	AA	7.5	R	7	25	22	4			GAL
1987 11 22.43	M	7.3	AA	8.0	B		15	12	6			SEA
1987 11 23.24	S	7.6	NP	5.0	B		10		3			SCO01
1987 11 23.50	S	8.5	S	16	L	6	31	4	4			SUG01

Periodic comet Borrelly (1987p) [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 11 24.17	S	7.6	NP	5.0	B		10		4			SCO01
1987 11 24.43	M	7.2	AA	8.0	B		15		6			SEA
1987 11 24.52	S	8.2	S	16	L	6	31		4			SUG01
1987 11 25.43	M	7.1	AA	5.0	B		10	12	5			SEA
1987 11 26.23				25.6	L	4	45			0.67	180	MOR
1987 11 26.23	M	7.6	AA	5.0	B		10	13.5	4			MOR
1987 11 28.02	B	7.5	AA	3.0	B		8	17	2			CAB
1987 11 28.29	M	7.7	AC	5.0	B		10					HAL
1987 11 29.21	S	8.2	AC	20.3	L	7	44					LEV
1987 11 29.69	S	8.3	AA	31.0	L	6	63	5	4			HAS03
1987 12 07.64	S	8.2	AA	31.0	L	6	63	5	4			HAS03
1987 12 07.78	S	8.4	VB	33.3	L	5	45	3.3	5			SHA02
1987 12 07.82	S	8.7	AA	36.0	T	11	123	& 2.5	4			KOR
1987 12 08.76	S	8.3	AA	8.0	B		15	3	3			KOR
1987 12 08.85	S	8.4	VB	8.0	B		20	3.6	4			SHA02
1987 12 08.86	S	8.6	AA	36.0	T	11	123	2	5			KOR
1987 12 09.01				31.7	L	6	55	4.9	6			BOR
1987 12 09.01	S	7.5	A	5.0	B		10	7	5			BOR
1987 12 09.13	M	7.5	AC	5.0	B		10					HAL
1987 12 09.81	S	7.6	AC	15.2	L	5	44	5	3			MOE
1987 12 09.86	S	8.6	AA	36.0	T	11	123	2	4/			KOR
1987 12 09.88	S	8.2	AA	8.0	B		15	3.5	4			KOR
1987 12 09.95	S	8.3:	S	10.0	B		14	& 3.6	3			HAS02
1987 12 10.02	S	8.2	VB	20.0	R	14	40	2.7	6			SHA02
1987 12 10.76	M	8.0	AA	8.0	B		15	9	5			MIK
1987 12 10.90	B	8.1	S	10.0	B		14	7.0	4			HAS02
1987 12 10.91	S	7.5	AC	15.2	L	5	44	6	4			MOE
1987 12 11.81	S	7.2	AA	8.0	B		20	10	4			ZAN
1987 12 11.82	S	7.0	AA	4.2	B		7	11	4/			ZAN
1987 12 11.82	S	7.4	AC	15.2	L	5	44	8	4			MOE
1987 12 12.02				31.7	L	6	55	5.4	6	?	90	BOR
1987 12 12.02	S	7.5	A	5.0	B		10	10	5			BOR
1987 12 12.74	S	7.0	AC	15.2	L	5	38	8	4			MOE
1987 12 12.74	S	7.1	AC	5.0	B		10	8	5			MOE
1987 12 12.74	S	7.5	AC	15.2	L	5	100	5	4			MOE
1987 12 13.04	S	7.3	A	5.0	B		10	12	4			BOR
1987 12 13.13	S	7.6	A	8.0	B		11	5	3			SPR
1987 12 13.81	S	8.5	AA	8.0	B		20	4.1	4			SHA02
1987 12 13.87	B	8.1	AC	15.6	L	10	54	3	7			KOS
1987 12 13.99				31.7	L	6	55	4.1	6	?	90	BOR
1987 12 13.99	S	7.2	A	5.0	B		10	10	3			BOR
1987 12 14.02	S	7.6	S	5.0	B		7			0.50	55	CHE
1987 12 14.75	S	7.7	AA	8.0	B		20	6.0	4			KOC
1987 12 14.75	S	8.0	AA	10.0	B		14	6.4	3			HAS02
1987 12 15.74	S	6.8	AA	4.2	B		7	14	4/			ZAN
1987 12 15.77	S	7.0	AA	8.0	B		20	10	4/			ZAN
1987 12 15.82	S	7.8	AA	10.0	B		14	7.4	4			HAS02
1987 12 16.54	S	7.8	S	16	L	6	31	5	5			SUG01
1987 12 16.69	S	8.2	AA	31.0	L	6	63	4.5	5			HAS03
1987 12 17.55	S	7.6	S	16	L	6	31	5	5			SUG01
1987 12 17.60	S	8.0	AA	31.0	L	6	63	6	5			HAS03
1987 12 17.86	S	7.0	AA	8.0	B		20	10	4/			ZAN
1987 12 17.87	S	6.8	AA	4.2	B		7	14	4			ZAN
1987 12 18.54	S	8.2	AA	31.0	L	6	63	5.2	4			HAS03
1987 12 18.93	S	7.9	AA	8.0	B		10	5.4	5			SHA02
1987 12 19.01				31.7	L	6	55	5.0	5	0.15	90	BOR
1987 12 19.01	S	7.3	A	5.0	B		10	12.5	5			BOR
1987 12 19.56	S	7.9	S	16	L	6	31	5	5			SUG01

Periodic comet Borrelly (1987p) [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 12 19.78	S	7.0	AA	8.0	B		20	10	5			ZAN
1987 12 19.80	S	6.8	AA	4.2	B		7	13	4			ZAN
1987 12 19.81	S	7.8	AA	10.0	B		14	7.7	4			HAS02
1987 12 19.82	S	7.5	AA	8.0	B		20	3.8	3	0.17	30	KOC
1987 12 20.55	S	7.5	S	16	L	6	31	4	5			SUG01
1987 12 20.77	M	7.2	AC	33	L	4	50	8	4	0.08	65	BOA
1987 12 20.78	S	6.8	AA	4.2	B		7	13	4/			ZAN
1987 12 20.78	S	7.0	AA	8.0	B		20	10	4/			ZAN
1987 12 20.79				40.6	L	4	57	4	5/	0.20	50	ZAN
1987 12 20.83	M	8.6	AA	7.5	R	7	25	5	2			GAL
1987 12 21.16	M	7.8:	SC	5.0	B		10					HAL
1987 12 21.57	S	8.0	AA	31.0	L	6	63	6.7	4			HAS03
1987 12 21.59	S	8.1	S	16	L	6	31	5	5			SUG01
1987 12 21.78	M	7.9	AA	8.0	B		15	9	5			MIK
1987 12 21.82	B	8.0	AC	5.0	B		7		7			KOS
1987 12 21.85	S	7.7	AA	8.0	B		10	7.2	4			SHA02
1987 12 22.12				31.7	L	6	55	6.9	6			BOR
1987 12 22.12	S	7.1	HR	5.0	B		10	14	4			BOR
1987 12 22.17	M	6.8	AA	5.0	B		10	16	3			MOR
1987 12 22.18	M	7.1	AA	8.0	B		20	8	4			MOR
1987 12 22.21	S	7.8	AA	8.0	B		20	6	4			GRE
1987 12 22.52	S	8.3	S	16	L	6	31	4	4			SUG01
1987 12 22.70	S	7.4	AC	15.2	L	5	44	7	5	?		MOE
1987 12 22.70	S	7.5	AC	5.0	B		7	6	6			MOE
1987 12 22.70	S	7.6	AC	15.2	L	5	100	6	5			MOE
1987 12 22.76	S	8.0	AA	8.0	B		20	5.0	4			SHA02
1987 12 22.77	M	8.0	AA	5.0	B		7	6	6			MIK
1987 12 23.48	B	7.2	AC	35	T	6	96	0.05	4	0.06	315	AMO
1987 12 24.12	S	7.4	A	5.0	B		10	12	4			BOR
1987 12 24.80	B	7.8	AC	5.0	B		7		6			KOS
1987 12 24.99	S	7.8	AA	8.0	B		20	6.0	5			SHA02
1987 12 26.42	S	7.8	S	16	L	6	31	4	5			SUG01
1987 12 26.95	B	7.1	AC	35	T	6	96	0.05	6			AMO
1987 12 27.76	S	7.1	AA	8.0	B		20	7	4			ZAN
1987 12 27.79	S	8.1	AA	8.0	B		20	4.0	5			SHA02
1987 12 28.19	M	7.3	PC	41	L	4	83					HAL
1987 12 31.77	S	8.1	AA	20.0	R	14	40	3.3	4			SHA02
1988 01 01.41	S	8.0	S	16	L	6	31	3	4			SUG01
1988 01 02.84	S	8.1	AA	8.0	B		20	3.7	4			SHA02
1988 01 03.16	M	7.6	PC	41	L	4	83					HAL
1988 01 03.75	S	8.3	AA	8.0	B		20	3.7	6			SHA02
1988 01 06.45	S	8.5	S	16	L	6	31	3	4			SUG01
1988 01 06.70	S	7.8	AC	15.2	L	5	38	7	5			MOE
1988 01 06.70	S	7.8	AC	15.2	L	5	44	7	5			MOE
1988 01 06.70	S	8.1	AC	15.2	L	5	100	5	5			MOE
1988 01 06.76	S	8.2	AA	8.0	B		15	6	3			KOR
1988 01 07.14	S	7.6	PC	5.0	B		10					HAL
1988 01 07.73	S	8.1	AA	10.0	B		14	5.4	3			HAS02
1988 01 07.91	S	8.6	AA	8.0	B		20	4.3	4			SHA02
1988 01 08.45	S	8.3	S	16	L	6	31	4	4			SUG01
1988 01 08.77	S	8.0	AC	10.0	B		14	5	5			MOE
1988 01 08.78	M	8.4	AA	8.0	B		15	6	7			MIK
1988 01 08.81	M	8.4	AA	5.0	B		10	7	3			BOA
1988 01 08.85	S	8.1	AA	10.0	B		14	7.0	3			HAS02
1988 01 09.72	S	7.9	AC	15.2	L	5	44	5	3			MOE
1988 01 09.72	S	8.3	AC	15.2	L	5	100	4	4			MOE
1988 01 09.75	M	8.5	AA	5.0	B		10	6.5	3			BOA
1988 01 09.80	S	7.7	AA	8.0	B		20	6	4/			ZAN

Periodic comet Borrelly (1987p) [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1988 01 09.85	S	7.6	AA	4.2	B		7	9	3/			ZAN
1988 01 09.88	S	8.2	AA	10.0	B		14	6.1	3			HAS02
1988 01 10.81	S	8.1	AA	8.0	B		10	7.7	4			SHA02
1988 01 11.56	S	8.9	S	16	L	6	31	4	4			SUG01
1988 01 11.72	S	8.3	AC	15.2	L	5	44	5	3			MOE
1988 01 11.72	S	8.5	AC	15.2	L	5	100	5	3			MOE
1988 01 11.80	S	8.6	AA	8.0	B		15	2	3			KOR
1988 01 11.85	S	8.7	AA	36.0	T	11	123	2.5	4	&0.03	130	KOR
1988 01 11.96	S	8.5	AA	8.0	B		20	5.4	3			SHA02
1988 01 12.79	S	8.4	AA	8.0	B		15	3.5	3/			KOR
1988 01 13.23	S	7.7	PC	5.0	B		10					HAL
1988 01 13.72	S	8.0	AC	15.2	L	5	38	5	3	?		MOE
1988 01 13.72	S	8.1	AC	15.2	L	5	44	4.5	3	?		MOE
1988 01 13.72	S	8.4	AC	15.2	L	5	100	3.5	3	?		MOE
1988 01 14.78	S	8.7	AA	8.0	B		20	5.4	5			SHA02
1988 01 14.91	S	8.4	AC	15.2	L	5	38	4	4	?		MOE
1988 01 14.91	S	8.4	AC	15.2	L	5	44	4	4			MOE
1988 01 14.91	S	8.7	AC	15.2	L	5	100	3	4			MOE
1988 01 15.77	S	8.6	AA	10.0	B		14	4.7	2			HAS02
1988 01 20.76	B	8.8	AA	10.0	B		14	3.2	2			HAS02
1988 01 20.91	S	9.5	AA	8.0	B		20	4.3	4			SHA02
1988 01 21.72	B	8.6	AC	15.2	L	5	38	5.5	3			MOE
1988 01 21.72	B	8.6	AC	15.2	L	5	44	5	3			MOE
1988 01 21.72	S	8.8	AC	15.2	L	5	100	5	3			MOE
1988 01 22.93	S	9.5	AA	20.0	R	14	40	3.9	5			SHA02
1988 01 23.33	S	9.6	AC	15	L	4	35	4	3			LEV
1988 01 23.72	S	8.9	AC	15.2	L	5	44	3.5	3			MOE
1988 01 23.72	S	9.1	AC	15.2	L	5	100	3	3			MOE

Periodic comet Schwassmann-Wachmann 2 (1986h)

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 01.49	I	[12.5		41	L	4	244					HAL
1987 10 20.17	S	13	: AC	51.0	L	4	186	0.7	2			BOU
1987 10 30.17	S	13.3	AC	51.0	L	4	186	0.6	1/			BOU
1987 11 01.18	S	13.4	AC	51.0	L	4	265		1			BOU
1987 11 12.84	S	11.7	A	31	L	4	114	2	2			CLA
1987 11 20.50	I	[13.0		41	L	4	244					HAL
1987 12 21.51	I	[13.0		41	L	4	244					HAL

Periodic comet Forbes (1986g)

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 16.35	C	18.4	FA	91.4	L	4			6	0.02	243	SCO02

Periodic comet Reinmuth 2 (1987l)

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 09 20.27	S	13.6	NP	25.6	L	4	156	1.0	2			MOR
1987 10 15.14	C	15.6	FA	91.4	L	4			5	0.01	72	SCO02
1987 10 16.25	I	[13.0		41	L	4	244					HAL
1987 10 21.16	I	[13.5		41	L	4	244					HAL

Periodic comet Wirtanen (1986 VI)

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1986 03 01.02	S	10.3	A	31.7	L	6	68	1.7	2/			BOR

Periodic comet Harrington (1987n)

DATE (UT)	MM MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 16.17	! S 13.2	AC	41	L	4	244					HAL
1987 10 18.20	S 13.3	NP	25.6	L	4	156	1.4	0/			MOR
1987 10 20.21	! S 13.3	AC	41	L	4	244					HAL
1987 10 26.29	13.0:		154.9	L	14	654		3			LEV
1987 11 11.12	! S 13.3	AC	41	L	4	183					HAL
1987 11 22.19	I[13.0		41	L	4	244					HAL
1987 12 10.10	I[13.5		41	L	4	244					HAL

Periodic comet Gunn

DATE (UT)	MM MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 30.11	S[14.5	AC	51.0	L	4	265					BOU
1988 01 15.44	C 17.4	FA	91.4	L	4		0.35		0.11	288	SCO02

Periodic comet West-Kohoutek-Ikemura (1987x)

DATE (UT)	MM MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 20.12	S[14.5	AC	51.0	L	4	265					BOU
1987 10 30.14	S[14.5	AC	51.0	L	4	265					BOU
1987 12 21.49	15.0:		154.9	L	14	654	0.50	0			LEV
1987 12 21.53	c 21.0	FA	91.4	L	4						SCO02
1987 12 21.55	C 18.4	FA	91.4	L	4		0.27		0.04	323	SCO02

Periodic comet Longmore (1987c₁)

DATE (UT)	MM MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1986 12 29.40	C 20.5	FA	91.4	L	4			9			SCO02
1987 11 19.49	C 18.9	FA	91.4	L	4			8	0.01	299	SCO02
1987 12 21.47	S 16.3	AC	154.9	L	14	654	0.75	7			LEV

Periodic comet Howell (1987h)

DATE (UT)	MM MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 07 06.39	S 12.5	L	25	L	4	179	0.8	2/			JAC01
1987 07 07.39	S 12.6	L	25	L	4	179	0.8	3			JAC01
1987 07 28.33	S 12.6	L	25	L	4	179	0.8	1			JAC01
1987 07 29.35	S 12.9	L	25	L	4	179	1	2			JAC01
1987 08 04.05	S 12.9	AC	25.4	J	6	117	0.8	1			BOU
1987 08 04.39	S 13.1	L	25	L	4	179	1.1	2			JAC01
1987 08 23.31	S 13.4	L	25	L	4	179	0.9	2			JAC01
1987 09 20.38	S 13.2	NP	25.6	L	4	111	& 2.0	0			MOR
1987 10 20.03	S 14.2	AC	51.0	L	4	186	0.8	0/			BOU
1987 10 23.88	S 14.2	AC	51.0	L	4	265	0.7	2			BOU
1987 10 30.00	S 14.4	AC	51.0	L	4	265	0.9	0			BOU

Periodic comet Brooks 2 (1987m)

DATE (UT)	MM MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 08 03.99	S 13.3:	AC	25.4	J	6	117	& 0.5	2			BOU
1987 08 07.03	S 13.4	AC	25.4	J	6	117	& 0.5	3			BOU
1987 09 02.24	S[13.0	A	50.0	L	5	96					BOR
1987 09 18.96	S 12.7	AC	25.4	J	6	73	1.5	1			BOU
1987 09 20.36	S 13.4	NP	25.6	L	4	156	1.1	2/			MOR
1987 09 25.94	S 12.7	AC	25.4	J	6	117		1			BOU
1987 09 27.27	S 12.8	NP	25.6	L	4	156	1.4	2			MOR
1987 09 28.76	S 13.5	VN	20	L	4	89	0.6	3			PEA
1987 09 29.06	S 13.1:	AC	20.0	T	10	50	1	2			COM
1987 09 29.31	M 13.3	AC	41	L	4	83					HAL

Periodic comet Brooks 2 (1987m) [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 09 29.92	S	12.7	AC	25.4	J	6	117	1.4	1/			BOU
1987 09 29.98	S	12.9:	AC	20.0	T	10	50	1	2			COM
1987 09 30.93	S	12.8	AC	25.4	J	6	90	& 1.5	0/			BOU
1987 10 12.54	S	13.5	AC	25.4	L	4	114	< 1	3			SEA
1987 10 15.09	S	12.8	A	50.0	L	5	96	1.0	4			BOR
1987 10 16.31	M	12.6	AC	41	L	4	83					HAL
1987 10 17.96	S	12.6	AC	25.4	J	6	73	& 2.0	1			BOU
1987 10 18.28	S	12.4	NP	25.6	L	4	111	1.1	1/			MOR
1987 10 20.01	S	12.5	AC	51.0	L	4	115	1.6	2/			BOU
1987 10 23.84	S	12.5	AC	51.0	L	4	115	1.5	3			BOU
1987 10 24.60	S	12.9	A	31	L	4	114	2	4			CLA
1987 10 24.75	S	12.8	VN	20	L	4	90	1	3			PEA
1987 10 25.21	S	[13.0	A	50.0	L	5	96					BOR
1987 10 26.23	M	12.7:	AC	41	L	4	83					HAL
1987 10 29.12	S	13.2	AC	44.5	L	4	167	0.8	3			MOR03
1987 10 29.94	S	12.7	AC	51.0	L	4	93	1.5	3			BOU
1987 11 11.16	S	12.9	AC	41	L	4	83					HAL
1987 11 12.56	S	13.3	A	31	L	4	114	1.5	2			CLA
1987 11 21.31	I	[13.5		41	L	4	244					HAL
1987 11 21.89	S	13.0	AC	33	L	4	150					BOA
1987 11 22.22	I	[13.5		41	L	4	244					HAL
1987 11 26.20	S	12.7	NP	25.6	L	4	111	1.4	4			MOR
1987 12 10.16	I	[13.5		41	L	4	244					HAL
1988 01 09.17	I	[13.5		41	L	4	244					HAL

Periodic comet Reinmuth 1 (1987r)

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 19.35	I	[13.5		41	L	4	244					HAL
1987 11 26.29	I	[14.0		41	L	4	244					HAL
1987 12 21.21		13.5:		154.9	L	14	654		2			LEV
1987 12 21.27	c	18.7	FA	91.4	L	4		0.78				SCO02
1987 12 21.30	C	16	FA	91.4	L	4						SCO02
1987 12 29.41	I	[13.0		41	L	4	244					HAL
1988 01 09.15	I	[13.0		41	L	4	244					HAL
1988 01 10.14	I	[13.5		41	L	4	244					HAL

Periodic comet Whipple (1986 XII)

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1988 01 15.30	c	21.2	FA	91.4	L	4		0.15				SCO02
1988 01 15.33	C	19.6	FA	91.4	L	4						SCO02

Periodic comet Ashbrook-Jackson (1986 II)

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 12 21.36	c	21.7	FA	91.4	L	4						SCO02
1987 12 21.39	C	20.2	FA	91.4	L	4						SCO02

Periodic comet Comas Sola (1986j)

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 01.48	I	[13.0		41	L	4	244					HAL
1987 10 30.15	S	14.7	AC	51.0	L	4	288	0.5	3			BOU
1987 10 30.50	I	[13.0		41	L	4	244					HAL
1987 11 03.49	I	[13.5		41	L	4	244					HAL
1987 11 25.20	I	[13.5		41	L	4	244					HAL
1987 12 24.48	I	[13.5		41	L	4	244					HAL

Periodic comet Mueller (1987a₁)

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 20.26	I	[13.5		41	L	4	244					HAL
1987 10 27.30	C	17.1	FA	91.4	L	4			4	0.02	233	SCO02
1987 11 16.26	C	17.1	FA	91.4	L	4				0.02	225	SCO02
1987 11 16.27	c	20.2	FA	91.4	L	4						SCO02
1987 11 16.27	c	20.2	FA	91.4	L	4						SCO02
1987 11 20.17		14.5:		154.9	L	14	654					LEV
1987 11 24.26	c	19.9	FA	91.4	L	4		0.52	6	0.02	231	SCO02
1987 12 21.22	c	21.2	FA	91.4	L	4		0.58				SCO02
1987 12 21.24	C	17.8	FA	91.4	L	4						SCO02
1987 12 23.16	C	17.9	FA	91.4	L	4						SCO02
1987 12 23.16	c	21.1	FA	91.4	L	4				0.01	237	SCO02

Periodic comet Halley (1986 III)

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 11 19.52	S	14.6	AC	154.9	L	14	654		0			LEV
1987 11 20.53	S	14.4	AC	154.9	L	14	654		0			LEV
1987 11 29.47	I	[13.5		41	L	4	244					HAL
1987 12 21.45	S	15.3	AC	154.9	L	14	654	0.75	0			LEV
1987 12 22.51	c	21.3	FA	91.4	L	4		1.25				SCO02
1987 12 22.53	C	17.1	FA	91.4	L	4		& 1.25	1			SCO02
1987 12 24.46	I	[14.0		41	L	4	244					HAL
1988 01 15.44	S	15.8	AC	154.9	L	14	654	0.3	1			LEV

Periodic comet Schwassmann-Wachmann 1

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1982 04 13.89	S	11.5	VF	26.0	L	6	130	1.0	5		220	MER
1982 04 14.85	S	11.6	VF	26.0	L	6	130	1.4	3			MER
1987 06 01.78		[13.0	VN	32	L	4	113					PEA
1987 06 27.75		[13.0	VN	32	L	4	113					PEA
1987 07 02.74		[13.0	VN	32	L	4	113					PEA
1987 07 14.56		[12.0	VN	32	L	4	113					PEA
1987 07 17.75		[13.0	VN	32	L	4	113					PEA
1987 07 25.58		[13.0	VN	32	L	4	113					PEA
1987 08 05.53		[12.0	VN	12.5	R	5	90					PEA
1987 08 06.53		[12.0	VN	12.5	R	5	90					PEA
1987 08 19.55		[12.5	VN	12.5	R	5	90					PEA
1987 09 28.25	I	[13.0		41	L	4	244					HAL
1987 09 29.54		[13.0	VN	20	L	4	130					PEA
1987 10 16.22	! S	13.2	AC	41	L	4	244					HAL
1987 10 17.14	! S	13.3	AC	41	L	4	244		2			HAL
1987 10 17.52		[13.0	VN	20	L	4	130					PEA
1987 10 18.24	S	13.3	NP	25.6	L	4	156	1.6	1			MOR
1987 10 19.52		[13.0	VN	20	L	4	130					PEA
1987 10 21.14	I	[13.0		41	L	4	244					HAL
1987 10 24.52		[13.0	VN	20	L	4	130					PEA
1987 11 11.13	I	[13.0		41	L	4	244					HAL
1987 11 12.15	I	[13.0		41	L	4	244					HAL
1987 11 22.10	I	[13.0		41	L	4	244					HAL
1987 12 10.07	I	[13.0		41	L	4	183					HAL

Periodic comet Klemola (1987i)

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 06 26.39	S	13.1	L	25	L	4	179	1	2			JAC01
1987 06 28.32	S	13.5	AC	44.5	L	4	167	0.5	4			MOR03
1987 07 03.40	S	12.9	L	25	L	4	82	0.9	2			JAC01

Periodic comet Klemola (1987i) [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 07 04.01	S	12.4:	AC	25.4	J	6	90	& 0.7	1/			BOU
1987 07 04.38	S	12.9	L	25	L	4	82	1	3			JAC01
1987 07 06.00	S	12.5:	AC	25.4	J	6	90	0.8	3			BOU
1987 07 18.37	S	12.6	L	25	L	4	82	1.6	3			JAC01
1987 07 22.32	S	12.5	L	25	L	4	46	1.8	2			JAC01
1987 07 25.39	S	12.5	L	25	L	4	82	1.9	3			JAC01
1987 07 28.32	S	12.7	A	31.7	L	6	110	1.1	1			BOR
1987 08 03.98	S	12.4	AC	25.4	J	6	90	1.5				BOU
1987 08 04.39	S	11.9	L	25	L	4	46	1.5	3			JAC01
1987 08 06.32	S	13.7	AC	44.5	L	4	167	1.0	2			MOR03
1987 08 07.32	S	13.7	AC	44.5	L	4	167	1.0	2			MOR03
1987 08 17.25	S	11.9	L	25	L	4	46	1.7	4			JAC01
1987 08 18.18	S	14.1	AC	44.5	L	4	167	0.5	1			MOR03
1987 08 22.29	S	11.9	L	25	L	4	46	1.7	4			JAC01
1987 08 25.33	S	13.6	AC	44.5	L	4	167	0.6	3			MOR03
1987 08 28.31	S	12.1	L	25	L	4	82					JAC01
1987 08 29.97	B	13.7	AC	35	T	6	96		8			AMO
1987 09 02.23	S	12.7	A	50.0	L	5	96	1.5	3/			BOR
1987 09 03.30	S	13.9	AC	44.5	L	4	167	0.6	3			MOR03
1987 09 14.17	S	12.7	L	25	L	4	82	1.2	2			JAC01
1987 09 18.94	S	12.6	AC	25.4	J	6	73	2.2	0			BOU
1987 09 20.34	S	12.5	NP	25.6	L	4	111	1.8	1			MOR
1987 09 23.17	S	12.7	L	25	L	4	82	1.5	2			JAC01
1987 09 25.93	S	12.7	AC	25.4	J	6	73	2.0	0/			BOU
1987 09 27.03	S	12.8:	AC	20.0	T	10	50	2	1			COM
1987 09 27.23	S	12.6:	L	25	L	4	82					JAC01
1987 09 27.24	S	12.8	NP	25.6	L	4	111	1.3	1/			MOR
1987 09 27.99	S	12.6:	AC	20.0	T	10	50	2	1			COM
1987 09 28.78	S	12.7	VN	20	L	4	89	1	0			PEA
1987 09 29.05	S	12.8:	AC	20.0	T	10	50	> 2	1			COM
1987 09 29.28	M	12.9	AC	41	L	4	83					HAL
1987 09 29.91	S	12.8	AC	25.4	J	6	73	1.8	0/			BOU
1987 09 29.97	S	12.8:	AC	20.0	T	10	50	2	1			COM
1987 09 30.92	S	12.7	AC	25.4	J	6	90	2.0	0			BOU
1987 10 12.07	S	13.5	L	25	L	4	82	1.4	3			JAC01
1987 10 15.10	S	[13.0	A	50.0	L	5	96					BOR
1987 10 16.28	S	13.6	AC	41	L	4	244					HAL
1987 10 17.97	S	13.4	AC	40.6	L	5	82	2.0	0			BOU
1987 10 23.87	S	13.6	AC	51.0	L	4	115	1.3	0/			BOU
1987 10 24.58	S	13.2	A	31	L	4	114	2.5	2			CLA
1987 10 30.01	S	13.5	AC	51.0	L	4	93	1.2	0			BOU
1987 11 12.60	S	13.8	A	31	L	4	114	1.5	1			CLA

Periodic comet Gehrels 1 (1987v)

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 16.31	C	17.1	FA	91.4	L	4			5	0.02	256	SCO02
1987 10 20.08	S	[14.5	AC	51.0	L	4	265					BOU
1987 10 26.40		15.0:		154.9	L	14	654					LEV
1987 11 16.35	c	19.3	FA	91.4	L	4			7			SCO02
1987 11 16.36	C	16.7	FA	91.4	L	4						SCO02
1987 11 26.27	I	[14.0		41	L	4	244					HAL

Periodic comet Helin (1987w)

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 09 29.33	I	[13.0		41	L	4	244					HAL
1987 10 16.25	C	17.7	FA	91.4	L	4			8			SCO02

Periodic comet Helin (1987w) [cont.]

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 20.04	S	14.5	AC	51.0	L	4	265					BOU
1987 11 20.21		16.0:		154.9	L	14	654					LEV
1987 12 21.18	c	21.4	FA	91.4	L	4		0.35				SCO02
1987 12 22.25	C	18.8	FA	91.4	L	4						SCO02
1988 01 15.13	C	19.9	FA	91.4	L	4		0.20				SCO02

Periodic comet Shoemaker-Holt (1987z)

DATE (UT)	MM	MAG.	RF	AP.	T	F/	PWR	COMA	DC	TAIL	PA	OBS.
1987 10 26.36				91.4	L	4				8	0.01	254 SCO02
1987 11 11.19	I	13.5		41	L	4	244					HAL
1987 11 12.21	I	14.0		41	L	4	244					HAL
1987 11 13.18	I	14.0		41	L	4	244					HAL
1987 11 16.20	c	18.7	FA	91.4	L	4		0.55	8	0.01	60	SCO02
1987 11 19.30		13.5:		154.9	L	14	654					LEV
1988 01 09.16	I	13.5		41	L	4	244					HAL

NOTES CONCERNING TABULATED OBSERVATIONS

The full explanation of tabulated ICQ data and the complete set of Keys to References (RF), Magnitude Methods (MM), Observer (OBS.), Instrument types (T), etc., are available for US\$4.00 postpaid from the Editor (see address on page 2. Reports forms are available also from the Editor or may be copied from the form published in the October 1987 issue. All times in the ICQ are Universal Time (UT) unless otherwise noted.

ROMAN NUMERAL DESIGNATIONS OF COMETS IN 1986.

The following tabulation is from MPC 12627. The designation 1926 VIII is given to the observations formerly known under the minor planet designation 1925 QD, which S. Nakano has identified with P/Whipple.

Comet	T	Name	Year/letter	Ref.
1986 I	Jan. 16.5	P/Boethin	1985n	MPC 10156
1986 II	Jan. 24.4	P/Ashbrook-Jackson	1985a	IAUC 4048
1986 III	Feb. 9.5	P/Halley	1982i	MPC 10634
1986 IV	Mar. 11.3	Shoemaker	1986b	MPC 12307
1986 V	Mar. 14.1	P/Holmes	1986f	IAUC 4225
1986 VI	Mar. 19.1	P/Wirtanen	1985q	NK 517
1986 VII	Apr. 4.7	P/Kojima	1985o	MPC 11624
1986 VIII	Apr. 23.5	P/Machholz	1986e	MPC 11153
1986 IX	May 6.5	Churyumov-Solodovnikov	1986i	MPC 12453
1986 X	May 27.4	P/Shajn-Schaldach	1985i	NK 496
1986 XI	June 9.0	P/Singer Brewster	1986d	NK 497
1986 XII	June 25.1	P/Whipple	1985h	IAUC 4088
1986 XIII	Sept. 2.2	P/Lovas 2	1986p	MPC 12124
1986 XIV	Nov. 17.2	Shoemaker	1987o	MPC 12008
1986 XV	Nov. 22.8	P/Wiseman-Skiff	1987b	MPC 12124
1986 XVI	Nov. 22.9	P/Urata-Niijima	1986o	MPC 12128
1986 XVII	Dec. 17.5	Levy	1987a	MPC 12124
1986 XVIII	Dec. 24.9	Terasako	1987d	MPC 12200