

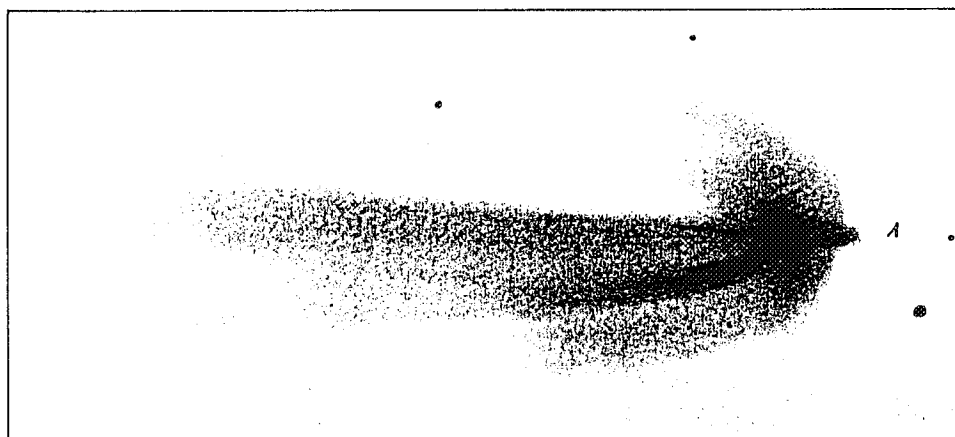
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The Archive of The Amateur Observation Network of The International Halley Watch

Volume 1: Comet Giacobini-Zinner

Stephen J. Edberg
Editor



February 9, 1996



National Aeronautics and
Space Administration

Jet Propulsion Laboratory
California Institute of Technology
Pasadena, California



JPL Publication 96-3, Vol. 2

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Volume 2: Comet Halley

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ABSTRACT

The International Halley Watch (IHW) was organized for the purpose of gathering and archiving the most complete record of the apparition of a comet, Halley's Comet (1982i = 1986 III = 1P/Halley), ever compiled. The redirection of the International Sun-Earth Explorer 3 (ISEE-3) spacecraft, subsequently renamed the International Cometary Explorer (ICE), toward Comet Giacobini-Zinner (1984e = 1985 XIII = 21P/Giacobini-Zinner) prompted the initiation of a formal watch on that comet. All the data collected on P/Giacobini-Zinner and P/Halley have been published on CD-ROM in the *Comet Halley Archive*. This document contains a printed version of the archive data, collected by amateur astronomers, on these two comets. Volume 1 contains the Comet Giacobini-Zinner data archive and Volume 2 contains the Comet Halley archive. Both volumes include information on how to read the data in both archives, as well as a history of both comet watches (including the organizing of the network of astronomers and lessons learned from that experience).

ACKNOWLEDGEMENTS

Charles Morris, Daniel W. E. Green, and John E. Bortle were very helpful in supplying advice and information on many aspects of cometary magnitude estimates and the visual appearance. Richard H. Stanton made photoelectric checks on several AAVSO comparison star fields before copies were issued to IHW comet observers. James A. Morgan, Alan Hale, Ruthi Moore, Mike Morrow, John D. Sabia, John Sanford, Chris Spratt, David Seargent, E. Peter Bus, Marek Muciek, Jan Hollan, Antonio Milani, Jose Campos, Klim Churyumov, Graham Keitch, Harold Ridley, Gabor Sule, Jürgen Rendtel, and many other well-known observers served as collection points and forwarded much of the data to the Lead Center. Giulio Varsi, Sandor Trajmar, and B. Watson provided translations of some observers' notes. Murray Geller helped with the proofreading and supplied good advice and considerable encouragement. Richard West provided guidance. Ray L. Newburn, Jr. was helpful and supportive in ways too numerous to list. Pamela K. Stewart supplied very helpful database management routines. Without Mikael Aronsson's programming and patience and Tim Thompson's assistance the presentation of these data would not have been possible.

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Volume 1

Data Set

Amateur Observation Network Data on
Comet Giacobini-Zinner DATE: 13 APRIL 1985

Volume 2

Data Set

Amateur Observation Network Data on
Comet Halley DATE: 23 JAN 1985

THE ARCHIVE OF
THE AMATEUR OBSERVATION NETWORK OF
THE INTERNATIONAL HALLEY WATCH

Prologue

The International Halley Watch (IHW) was organized by the Jet Propulsion Laboratory (JPL) for the U.S. National Aeronautics and Space Administration (NASA) for the purpose of gathering and archiving the most complete record of the apparition of a comet, Halley's Comet (1982i = 1986 III = 1P/Halley), ever compiled. Descriptions of the IHW may be found in Edberg (1985) and in Edberg, Newburn, and Rahe (1988). The potential contribution of amateur astronomers was recognized at the outset (Brandt et al., 1980) and the IHW was set up to include an Amateur Observation Network.

Detailed planning and publicity began in 1981 and *The International Halley Watch Amateur Observers' Manual for Scientific Comet Studies* (Edberg, 1983) was available in time for the IHW's trial run on Comet Crommelin (1983n = 1984 IV = 27P/Crommelin) in 1983-4. The data acquired during the trial run have been published in print (Sekanina and Aronsson, 1985) and by NASA on CD-ROM, that is, compact disc - read-only memory, in the *Comet Halley Archive*, Vol. 24 (IHW Staff, 1992).

The redirection of the International Sun-Earth Explorer 3 (ISEE-3) spacecraft, subsequently renamed the International Cometary Explorer (ICE), toward Comet Giacobini-Zinner (1984e = 1985 XIII = 21P/Giacobini-Zinner) prompted the initiation of a formal watch on that comet, even as Comet P/Halley was in the first stage of its 1985-6 apparition. All the data collected on P/Giacobini-Zinner and P/Halley have been published on CD-ROM in the *Comet Halley Archive* (IHW Staff, 1992; Vol. 24 and Vols. 1 - 23, respectively; Vols. 25 - 26 contain spacecraft data and complete the set). This document contains a printed version of the archive data, collected by amateur astronomers, on these two comets. Volume 1 contains the Comet Giacobini-Zinner data archive and Volume 2 contains the Comet Halley archive. Both volumes include information on how to read the data in both archives, as well as a history of both comet watches (including the organizing of the network of astronomers and lessons learned from that experience).

I. INTRODUCTION

Observations of Comets Halley and Giacobini-Zinner, compiled by the Discipline Specialist Team (Table I), can be grouped into four distinct categories:

- (1) Visual-appearance descriptions.
- (2) Drawings.
- (3) Photographs.
- (4) Spectrograms.

Amateur observations of Periodic Comet Giacobini-Zinner (G-Z) commenced with the visual recovery of the comet by C. S. Morris and S. J. Edberg on 1985 April 13. They ended with A. F. Jones' observation on 1985 December 10. Within that period 1016 magnitude and related visual appearance observations are included in the archive. Fifty-three drawings are listed spanning June - October and 20 photographs span July - September. Observations from 106 amateur astronomers were used in the G-Z archive.

Amateur observations of Periodic Comet Halley commenced with the visual recovery of the comet by S. J. O'Meara on 1985 January 23. They ended with D. H. Levy's observation on 1988 February 23. Within that period 11,641 magnitude and related visual appearance observations are listed in the Halley archive. Within the span of 1985 July 28 through 1986 June 30 there are 1309 drawings listed. Photographs cover the period 1985 August 12 to 1988 February 16 and total 2165. Spectra were obtained over the period 1985 December 4 through 1986 May 4 and 45 are listed.

The G-Z and Halley archives both carry identification numbers for every observation. These are called out in the amateur archive as AON#, whose leading digit is always 8 (numbers 1 - 7 identify the other disciplines in the IHW). The second (for Halley) or the third (for G-Z) digit identifies the subcollection of observations, as indicated below. The final digits were assigned to each observation in chronological order.

Because of the subjective nature of visual-appearance observation methods there is diversity in the type and quality of information recorded in the archive. When a range of values was given by the observer the more conservative value was adopted, i.e. a shorter tail, more diffuse condensation, smaller coma, and fainter magnitude. The AON# is always 1 for visual-appearance listings.

Drawings present the visual aspect of a comet. To be included in the archive a rendering must reproduce the detail discernible by the observer and provide information useful to an investigator. The AON# is always 3 for drawing listings.

All the photographic images listed in the archive are on file and were examined for quality before inclusion in the archive listings. The AON# is always 5 for photograph listings.

The spectra listed in the archive were made with either prism or grating spectrographs in a variety of modes. These spectra are perhaps the only ones in the complete IHW archive which cover the full range of visual wavelengths in one record. A few spectra extend into the photographic infrared. The AON# is always 7 for spectrogram listings.

Planning and Organization

The rationale for including amateur observations in IHW activities was described in the original IHW report by Brandt et al. (1980). The goal was to ensure that amateur observations would be as scientifically useful as possible. With that in mind the *IHW Amateur Observers' Manual for Scientific Comet Studies* (Edberg, 1983) was written. The philosophy was to provide detailed instructions that observers with some experience could follow. The manual was not intended to teach neophyte amateur astronomers how to begin the hobby, though it was available early enough that a novice, wishing to learn how to make amateur astronomical observations in general and observations of comets in particular,

TABLE I

| Discipline Specialist Team | | |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| <u>Team Member</u> | <u>Affiliation</u> | <u>Responsibility</u> |
| Stephen J. Edberg | Earth & Space Sciences Div. Jet Propulsion Laboratory California Institute of Technology Pasadena, CA 91109, U. S. A. | Discipline Specialist, Coordinator for Amateur Observations |
| Charles S. Morris | Telecommunications Science & Engineering Division Jet Propulsion Laboratory | Associate Discipline Specialist |
| Warren Morrison | American Association of Variable Star Observers (AAVSO) Cambridge, MA 02138, U. S. A. | Data Recorder |
| Thomas R. Williams | AAVSO | Data Recorder |
| Michael J. Weiner | Earth and Space Sciences Div. Jet Propulsion Laboratory | Data Reduction Assistant 1985-1986 |
| Mary L. Firth | Earth and Space Sciences Div. Jet Propulsion Laboratory | Data Reduction Assistant 1986-1988 |
| Elizabeth La Vite | Earth and Space Sciences Div. Jet Propulsion Laboratory | Data Reduction Assistant 1988-1989 |

would have enough time and could find enough general references to learn the necessary techniques.

Inviting amateur astronomers to participate in the IHW was approached in several ways. Contacts with established organizations and well-known amateur observers were made. This did not reach the bulk of potential observers. These observers were contacted via the astronomical press and other public media.

Seeking scientific assistance from amateur astronomers had its pros and cons. Filling in observational gaps in professional coverage of the comet, for the professional Large Scale Phenomena Network and the Spectroscopy and Spectrophotometry Network to name two examples, and supplying numerous visual observations were genuine, positive contributions to the IHW. On the other hand the potentially large number of contributors and observations and the observations' uncertain quality could easily have overwhelmed efforts to manage and then prepare the data for inclusion in the archive. Marketing surveys, conducted for advertisers using astronomical magazines, estimated the number of amateur astronomers in the U.S. and Canada, alone, to number 300,000.

To ameliorate the problem, amateurs planning to register with the Amateur Observation Network were encouraged, via the Observer Index registration form, to read portions of the manual first to confirm their interest not just in joining in the IHW but in actually participating by making observations useful to the scientific community.

Ultimately, the numbers of participants and observations proved manageable. There were 1575 registrations and of these, 873 actually submitted observations of P/Halley. It is noteworthy that the latter figure includes submitters who did not register with the amateur network: their observations simply arrived in the mail.

The observations were collected at the IHW's JPL Lead Center. They were either sent there directly by the observers or were forwarded by designated observation collectors - usually experienced observers willing to collect observations and advise observers - from sites around the world. (These data recorders were listed in the *International Halley Watch Amateur Observer's Bulletin* (Edberg, 1982 - 1990) and in acknowledgment and update letters sent to registered observers.) Some of the collectors also provided their assessment of the quality of the observations. The final preparation of the archive involved an assessment of all the submitted observations by the Discipline Specialist.

Registration and Preparation

The Observer Index form in the *IHW Amateur Observers' Manual* was designed so that the observer's address and observing site particulars could be entered into computer files for later use. The information requested on telescopes, cameras, and other observing hardware, while not necessary at the time of registration (but required for observations), later proved useful on numerous

occasions when ambiguities of various types appeared in observation reports. Even the signature permitting use of the data in the archive was helpful at times.

Registrants received a letter of acknowledgement and, later, letters timed appropriately for the P/Crommelin trial run and the P/Giacobini-Zinner campaign. They were encouraged to request a free subscription to the *IHW Amateur Observer's Bulletin* (published for the IHW by the Planetary Society) so they would be informed about IHW activities.

In 1988, a short questionnaire requesting more details on each observer's past cometary and general astronomical experience was sent to all observation submitters for whom addresses were available. (Some observations were sent without the submitter's address and other observers moved without sending an address update.) Staff and time limitations prevented the inclusion of the ancillary Observer Index data and the questionnaire data in computer files, but the paper files will stay with the IHW archive for future use by those who are interested in the community of participating amateur astronomers.

The observing site coordinates, listed in Table VIII and by identification number with the observations in the archive, are mostly those supplied by the observer. They have appended to them the Discipline Specialist's subjective estimate of the accuracy of that position. Occasionally observers used additional sites for which they did not supply coordinates. For these sites any evidence available was used to estimate very approximate geographic coordinates and a very large position uncertainty estimate was attached to them, sometimes as large as a whole country.

The large number of observing sites that many individuals would use was not anticipated. Observers selected sites based on such characteristics as atmospheric conditions and weather, distance from home, height and darkness of the horizon, and the comet's azimuth, among others.

The observation report forms in the manual (as later modified and published in the *IHW Amateur Observer's Bulletin* and in letters to observers) were patterned on report forms used by various amateur astronomy organizations. Occasionally there was redundancy on the forms; this sometimes proved very helpful in preparing the data for input. The forms were as self-explanatory as possible, even though a complete glossary explaining the forms was in the Manual.

The report forms were formulated so that a selected parameter was the same for all observations reported on an individual form: for magnitudes the parameter was the comet observed; for drawings, photoelectric photometry, and meteor counts it was the date; and for all observations using photography it was photographic emulsion. Unfortunately, some observers did not follow the formulations, creating significant additional work to prepare mixed-parameter observation reports for entry in the archive.

The preparation of thousands of observations for entry in the archive leads to the following conclusion: the organizer of any activity of this nature must be prepared for the unexpected and

irrational. Sometimes instructions aren't followed, and the data system must have built-in flexibility and adaptability.

II. THE ARCHIVE

Visual Appearance

After discussions with the staff of the *International Comet Quarterly (ICQ)*, their observation report form was adopted with added columns for additional data relevant to the analysis and understanding of the large number of magnitude estimates in the archive. It was a mistake not to ask for the comet's name on the report form: some observers sent in their data on P/Giacobini-Zinner and on P/Halley on separate forms but in the same mailing. Some G-Z observations were found mixed with Halley observations during the final Halley proofreading, when it was too late to add them to the G-Z archive. Another minor problem, fortunately made obvious by the observers, was that observations of brighter "comets of opportunity" discovered in 1985 were sometimes submitted with Halley observations on the same report form (this occurred with drawings as well).

UT Date was usually understood by observers but the time of observations was sometimes not correctly computed or not attached to the correct data. Some observers, responding to an IHW request, submitted their times as decimals of a day. A number of them incorrectly used the table to convert hours:minutes:seconds to decimals of a day, which was distributed in the acknowledgment letter and in the *Amateur Observer's Bulletin* (No. 11). Observations with ambiguous dates/times were discarded. With very few exceptions, decimal dates had to be specified to two or more decimal places for inclusion in the archives.

To better standardize the magnitude estimates, comparison star charts were included with the *Amateur Observers' Manual* (in Part II). These included reduced-size AAVSO *Variable Star Atlas* charts (Scovil, 1980) with their V and visual magnitudes and portions of the *B.A.A. Star Charts 1950.0* (Tirion, 1981) that had AAVSO Atlas magnitudes added to them. In addition, selected AAVSO variable star comparison charts, some checked photoelectrically by Richard Stanton (JPL, private communication) were mailed to registered observers. These efforts at standardization were thwarted both directly by the publication of other observing manuals with different star charts + magnitudes (Bouma et al., 1985 and Bus, 1984) and indirectly by observers picking their own sources of comparison magnitudes. Later in this section the many reference sources used by the observers are listed. It is incumbent on any archive user to decide which set or sets of comparison charts are acceptable for research.

Some observers reported magnitudes made with the same instrument but with different magnifications on the same data line: these were discarded because of their ambiguity.

Degree of condensation, DC, often covered the full range from

0 to 9 on many nights. Charles Morris submits the following report on recent results:

An interesting result of the February 1994 International Workshop on Cometary Astronomy concerns a comet's degree of condensation. For some time, there has been concern over the wide range of DC values (often including all possible values, 0-9) reported by different observers, even experienced observers, on a given night (S. J. Edberg, unpublished). During a panel discussion at the Workshop, led by John E. Bortle and Charles S. Morris, one reason for the spread was uncovered. Most American observers (and the IHW) define DC as a smoothly varying description of the intensity profile across a comet's head (Edberg, 1983). In particular, DC = 9 is used only when a comet is described as either wholly with a bright nuclear condensation with little surrounding coma (star-like in appearance) or with a notable, sharp-edged (planetary-like) disk. In this scheme, a diffuse coma with a stellar condensation would have a DC that is the weighted average of the two components. For instance, a totally diffuse coma (DC=0) with a faint stellar condensation might have a combined DC of two. If the same diffuse coma had a bright condensation, the DC might be six or seven.

At the Workshop it was learned that British observers jump to DC = 9 immediately upon distinguishing any stellar condensation within the comet's head. While other European comet groups/observers at the Workshop indicated that they followed the American/IHW definition of DC, a visual DC test given to the participants (Shanklin, 1994) prior to the DC discussion showed good agreement among observers for all examples, except the one having a stellar condensation embedded in a diffuse coma. While not explaining all the scatter observed in the DC estimates (e.g., different instrumentation is another potential cause), it does suggest that significant confusion exists over the definition of DC when a stellar (or near-stellar) condensation is present in the comet's coma. Users of the archive should bear this in mind when analyzing DC data.

The Dark Adapted column asked for a simple yes/no response. The actual time spent dark adapting would have been a more useful datum.

The criteria for the retention of magnitude data in the archive were extensively debated. The extremes ranged from keeping the data from only a few, selected, experienced observers to keeping virtually all of them. One specific criterion and its rationale originated with Charles Morris (JPL, private communication): Exclude observers who made less than a specified number of observations (e.g., 1 observation per month on average)

during the prime 1985-86 observing period. This number should be selected so the criterion tends to filter out inexperienced observers while retaining sufficient quantities of data from the remaining observers to make meaningful intercomparisons.

Based on these discussions, the decision was made that for the archive all those data were included that, based on the report itself, appeared to have been made in the *Manual*-prescribed manner. Thus researchers may exercise the option of applying Morris' criterion. Even this liberal approach to data inclusion resulted in the discarding of roughly one-quarter of the submitted observations. Figure 1 presents light curves of G-Z and Halley. The light curve in Figure 1b was generated with a group of selected observers while Figure 1c used all of the observers.

The size of this data set will allow many more studies of interest - some of the observers perhaps, as well as of the comet - than would have been possible had a much more limited archive been produced. Workers interested in using experience as a selection criterion are referred to Table II, kindly supplied by Daniel Green (Central Bureau for Astronomical Telegrams; private communication), which lists observations by those whose data are in the *ICQ* files. Users are also referred to Green (1986) for additional data on *ICQ* observers of P/Halley. He lists both the most active *ICQ* observers of P/Halley as well as the most active observers of all comets in the *ICQ* archives.

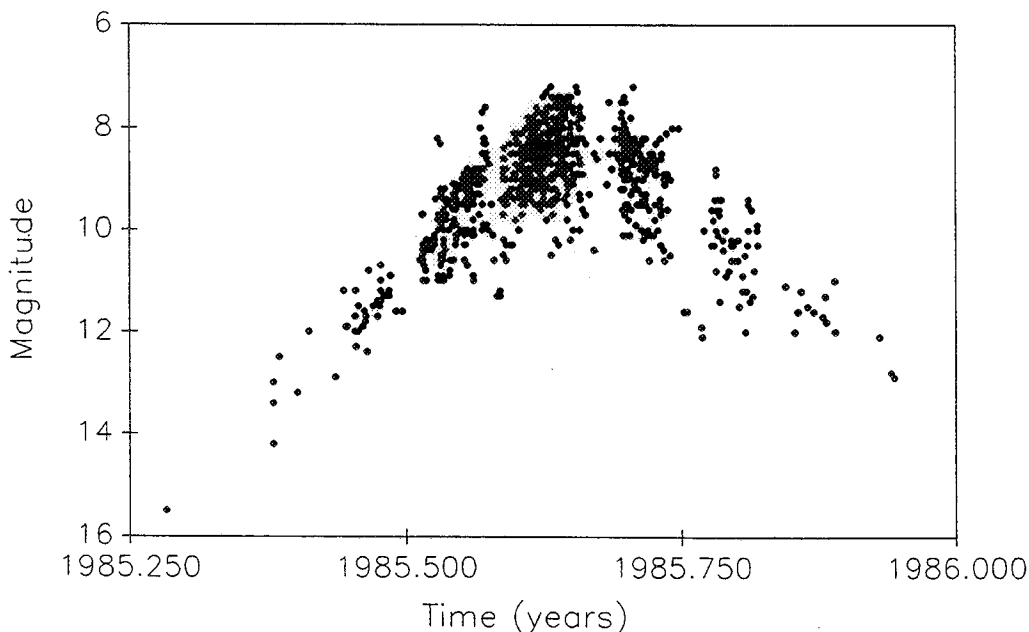


Figure 1. (a) The light curve of Comet Giacobini-Zinner, using the brightest total magnitude estimate (if more than one was made) by each observer on every night an observation was made. No aperture corrections have been applied. Breaks in the curve fall around full moon.

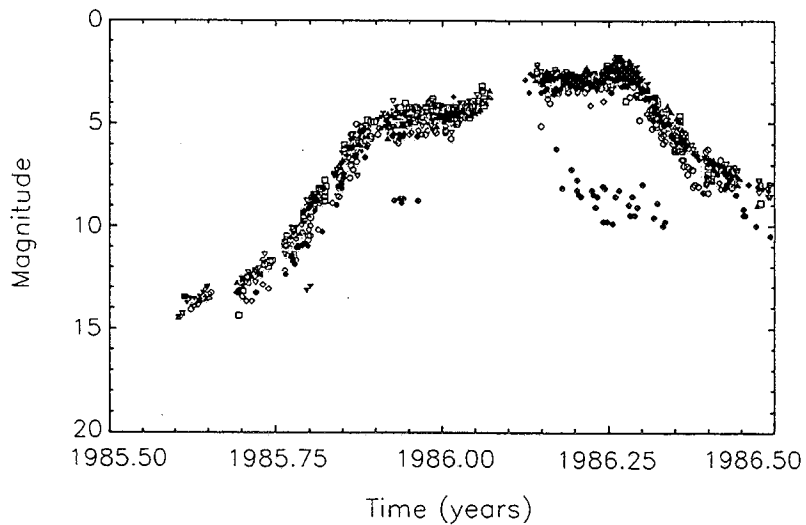


Figure 1. (b) The light curve of Comet Halley using the brightest magnitude estimate (if more than one was made) by observers J. Bortle, R. Bouma, D. W. E. Green, A. Hale, A. Jones, R. Keen, G. Keitch, C. S. Morris, W. Morrison, A. Pearce, D. Seargent, and J. Shanklin on every night an observation was made. Some "nuclear" magnitudes (m_2) have been included, falling well below the total magnitude light curves. No aperture corrections have been applied. Breaks in the curve fall around full moon or perihelion.

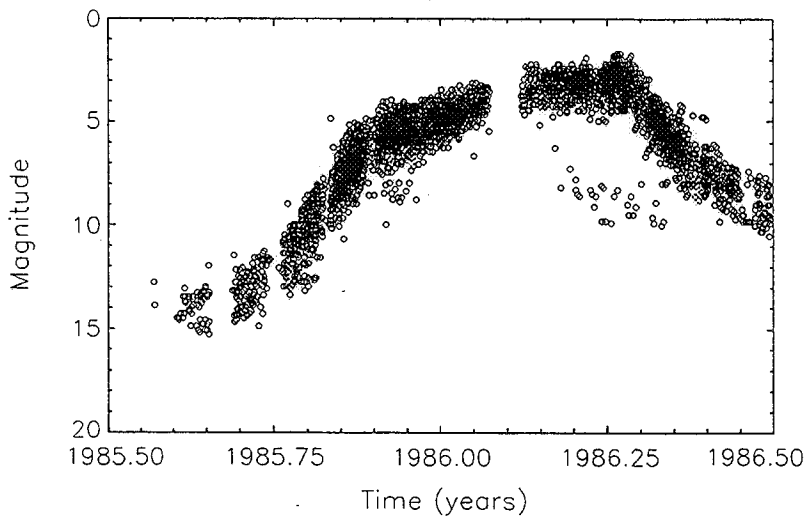


Figure 1. (c) The light curve of Comet Halley using the brightest magnitude estimate (if more than one was made) by all observers on every night an observation was made. Some "nuclear" magnitudes (m_2) have been included, falling well below the total magnitude light curves. No aperture corrections have been applied. Breaks in the curve fall around full moon or perihelion.

TABLE II

The Most Active ICQ Observers

The top 24 active observers of all comets in the ICQ archive as of 1990 January 4 are listed below. The columns list observer's name, number of positive observations, and number of negative observations (comet not detected). Here, an observation is defined as a single ICQ-format 80-character data listing; in the ICQ archive there is often more than one observation per observer per comet per night, since observers use different methods and different instruments to determine the total visual magnitude. The vast majority of observations (> 95%) contain some sort of magnitude estimate while the remainder report only other aspects of the visual appearance.

| <u>Observer</u> | <u>Obs.</u> | <u>Neg.</u> |
|--------------------|-------------|-------------|
| John E. Bortle | 1952 | 74 |
| Albert Jones | 1942 | 1 |
| Charles S. Morris | 1799 | 36 |
| Reinder Bouma | 914 | 8 |
| Daniel W. E. Green | 863 | 3 |
| Andrew Pearce | 801 | 43 |
| Alan Hale | 682 | 280 |
| Graham Keitch | 773 | 1 |
| Jonathan Shanklin | 657 | 18 |
| Warren Morrison | 622 | |
| David Seargent | 618 | 1 |
| Richard Keen | 607 | |
| Chris Spratt | 596 | |
| Michael Moeller | 533 | |
| Maurice Clark | 503 | |
| Jean-Claude Merlin | 480 | 19 |
| Don Machholz | 463 | 4 |
| Eric Jacobson | 391 | 20 |
| Richard Fleet | 354 | 5 |
| Georg Comello | 330 | 1 |
| Kiyotaka Kanai | 329 | |
| Werner Hasubick | 327 | 2 |
| E. P. Bus | 326 | |
| Akimasa Nakamura | 316 | |

Observers' notes, throughout the amateur archive, are usually reproduced as written by the observer, especially in the case of observers whose first language is not English. This can make for rough reading and ambiguity at times but it allows archive users to make their own judgments. Some observers supplied extensive notes not directly related to the comet or the observations. A few of these are scattered through the archive to supply a little color and context to the data and the times.

The column headings of the IHW Visual Appearance printed archive are described below:

Date(UT) Decimal date of the time of observation. Trailing zeroes are often mere space-fillers.

AON# Amateur observation network number, a unique reference number assigned to each observation.

m1 Total magnitude of the comet. A colon indicates that the given magnitude has lower than usual precision. A > indicates that the comet was fainter than the given magnitude.

MM The magnitude estimation method was one of four types:

- B - Bobrovnikoff method
- S - Sidgwick or In-Out method
- M - Morris method
- V - In-focus telescopic (as with variable stars) or naked eye estimates (made with or without defocusing; some observers remove corrective eyeglasses to defocus stars for comparison with the comet)

See Edberg (1983) for details of the first three methods.

Chart Source(s) of comparison star magnitudes:

(number < 179) Specific chart with V and/or visual magnitudes in the *American Association of Variable Star Observers (AAVSO) Variable Star Atlas* (Scovil, 1980).

(number + letter) Specific chart from the B.A.A. (British Astronomical Association, BAA) *Star Charts 1950.0* (Tirion, 1981) that was modified by the addition of AAVSO atlas magnitudes and published in the *IHW Amateur Observers' Manual* (Edberg, 1983).

(variable star designation) Variable star comparison chart published by the AAVSO, BAA, or Royal Astronomical Society of New Zealand (RASNZ), or AAVSO charts with V magnitudes (specially checked by R. H. Stanton, JPL; private communication). The latter were distributed by the IHW. A letter following the variable star designation identifies the specific chart used. R. W. Fleet (private communication) finds that comparison star magnitudes in the SX Leonis field are about 1/3 magnitude fainter than those in the S Sextantis field. J. Bortle (private communication) has also noted inconsistencies between comparison star fields in this part of the sky.

(numbers) *Smithsonian Astrophysical Observatory (SAO) Star Catalog* (1966) star number, or another catalog's number.

AA Chart from *The AAVSO Variable Star Atlas* (Scovil, 1980).

AAVSO Unspecified AAVSO source.

AUL UBV UBV photoelectric sequence described by Landolt (1973).

BAA Unspecified BAA source.

BSC *Yale Bright Star Catalog* (Hoffleit and Jaschek, 1982).

COELI *Atlas of the Heavens* (also called *Atlas Coeli 1950.0*; Becvar, 1958).

CZ List of white ($B-V < 0.5$) stars selected by J. Hollan of Copernicus Observatory & Planetarium, Brno, Czechoslovakia (private communication).

DCS Dutch Comet Section observing manual (Bus, 1984), with magnitudes based on *Sky Catalog 2000.0* (Hirshfeld and Sinnott, 1982). V magnitudes were converted to visual magnitudes.

E *Atlas Eclipticalis 1950.0* (Becvar, 1958).

IHW Unspecified IHW source; occasionally a specific chart is indicated.

- IHW BAA Unspecified BAA chart published by the IHW.
- LNES Lampkin's (1972) *Naked Eye Stars*.
- M *Stellar Atlas* by A. A. Mikhaylov (1975) using *Henry Draper Catalogue* (HD; Cannon and Pickering, 1918-24) magnitudes.
- MP *McCormick Photovisual Sequences* (published by the Univ. of Virginia; also Wirtanen and Vyssotsky, 1945).
- NPS North Polar Sequence, published by the AAVSO.
- PA Stars from the *Palomar Observatory Sky Survey*. Their V magnitudes were determined by comparison with the standard sequence in NGC 2119 (Hoag et al., 1961) and converted according to: (visual magnitude) = V + 0.16 [B-V] (K. Churyumov, private communication).
- RASNZ Unspecified RASNZ source.
- SA Selected area (Everhart, 1984), either numbered or unspecified.
- SAO Smithsonian Astrophysical Observatory source.
- SAO A/C *SAO Star Atlas* (1969) and *SAO Star Catalog* (1966).
- SAO (+ numbers) Chart from the *SAO Star Atlas* (1969).
- SC 2000 Unspecified stars from *Sky Catalog 2000.0* (Hirshfeld and Sinnott, 1982).
- SPV Unspecified stars with photovisual magnitudes from the *Cape Photographic Catalog for 1950.0*.
- USNOC United States Naval Observatory *Photoelectric Catalog* (Blanco et al., 1968).
- VAS (+ numbers) Unspecified stars from a specific chart in Vehrenberg's (1971) *Atlas Stellarum 1950.0*.

Occasionally combinations of sources are specified, e.g. SA47SAO, SPER 16, AA NPS, AACZORI, etc. Additional sources were used by a small number of observers, about which little or no information was supplied.

- Coma size Coma diameter [arcmin]. For an elliptical coma the major and minor axes are given.
- DC Degree of condensation, a qualitative measure of the brightness profile across the coma. Values from 0 to 9 indicate increasing degrees of condensation from diffuse to stellar. See Edberg (1983) for details.
- Tail Length of a tail [deg]. In the printed archive additional tails are listed as notes.
- PA Position angle [deg] measured north through east. In the printed archive additional tails (and fans) are listed as notes.
- Ap, Ins, f/, Pwr Aperture size [m], type of instrument (see below), focal ratio, and magnification.

Type of instrument:

- B - Binoculars
- C - Cassegrainian
- EY - Naked eye
- JB - Jones-Bird
- M - Maksutov
- N - Newtonian
- R - Refractor
- SC - Schmidt-Cassegrainian
- SN - Schmidt-Newtonian

The Jones-Bird design is described by Jones (1957) and by Bird and Bowen (1979).

On a few occasions the stated telescope characteristics don't seem to match the telescope type listed, both as supplied by the observer. In the case of fast Schmidt-Cassegrainian telescopes, an auxiliary positive lens was probably used as a focal reducer (telecompressor), and a rather fast Cassegrainian telescope (f/10) is probably a Schmidt-Cassegrainian.

- Lim Limiting magnitude of stars visible to the naked eye. Interference with the observation is indicated by the letters C, M, T, or Z if used, which refer to city lights, moonlight, twilight, or zodiacal light, respectively.

DA The observer's dark adaptation (Y = yes, N = no). A few observers gave the time spent dark adapting; times greater than or equal to 10 minutes were assigned a Y, shorter times an N.

Site Observing site identification number (cf. Table VIII).

Observer(s) Name(s) of observer(s). Additional observers are indicated in notes.

Notes Observer's or editor's comments, if any.

Drawings

The discerning eyes and skilled hands of astronomical illustrators have historically provided images of comets. Today, unfortunately, few professional or amateur astronomers have the artistic skill and accuracy, in this age of photography and electronic detectors, that were once the common tools of many astronomers. Drawings of P/Halley still help to place the comet's 1986 apparition in the context of earlier ones, however. In addition, the large number of drawings on file offers investigators the opportunity to better understand eye-brain detector variations among observers, especially when the drawings are compared with images from the Near Nucleus Studies Network that were made by non-human detectors (though later processing by archive users will insert a form of personal bias into the images, or at least into their appearance). Figure 2 presents high quality drawings.

Some observers' reports of magnification used for their observations were ambiguous. For example, an observer may have indicated 58-271, listed in the archive as 58,271. It is not clear if the observer used an unspecified intermediate power or a range of powers for that particular drawing.

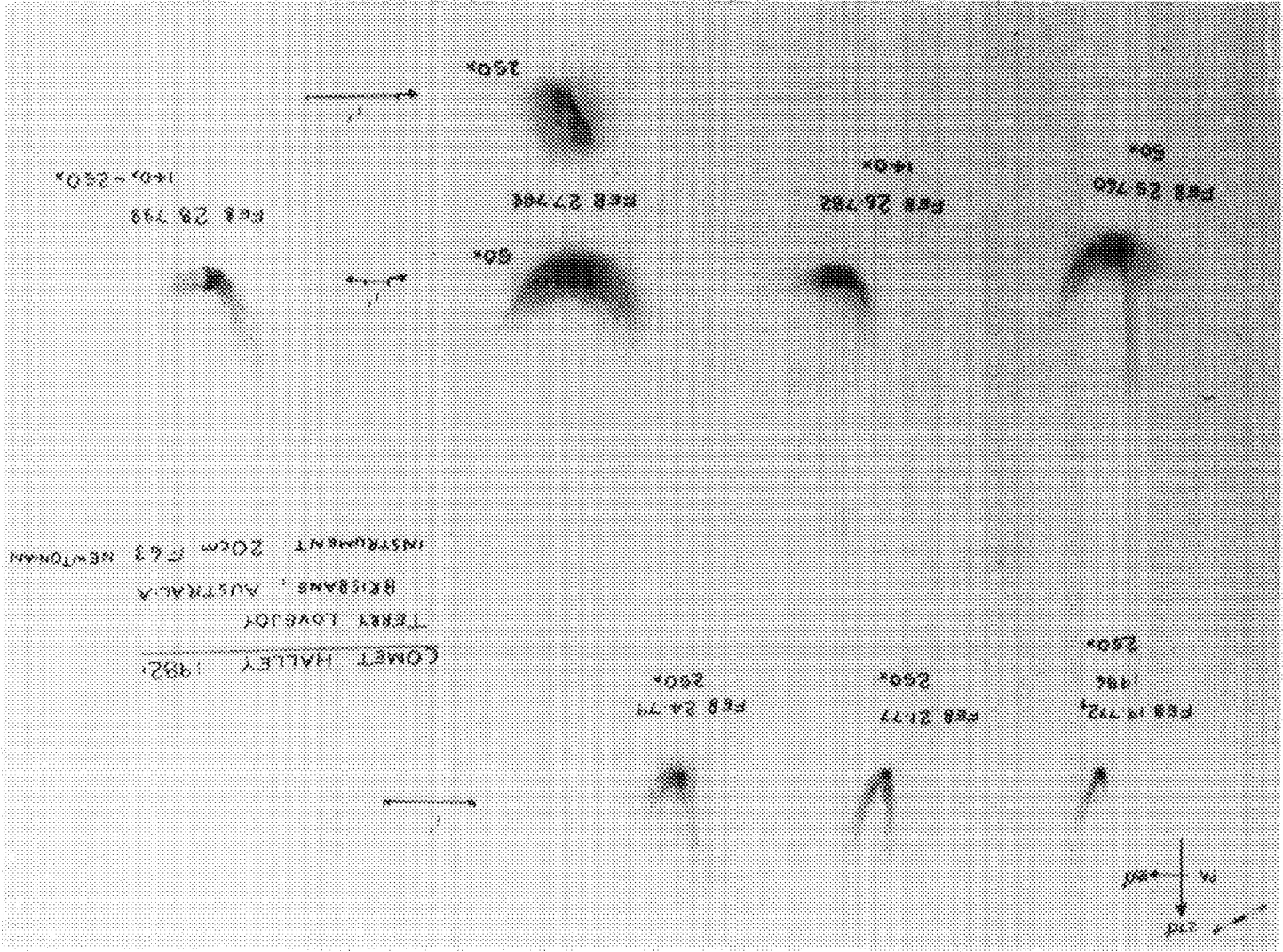
The intent in asking for U. T. Start/End was to determine how long it took the observer to make the drawing since it couldn't be made instantaneously. In a few cases a single time was given with the drawing but not in the space provided for Start/End. In such cases an editor's note was inserted and any evidence available, including other drawings or magnitude estimates, was used to suggest in the note whether the supplied time was for the start or end or middle.

The format of the list of drawings in the printed archive is described below:

Date(UT) Decimal date of the time of observation. Trailing zeroes are often mere space-fillers.

AON# Amateur observation network number, a unique reference number assigned to each observation.

Figure 2. Terry Lovejoy supplied this collection of drawings of Comet Halley (AON#s 830847, 830850, 830855, 830857, 830860, 830863, and 830868).



Scale Scale in minutes of arc per millimeter. Drawings lacking a scale are sometimes included.

Ap, Ins, f/, Pwr(s) Aperture size [m], type of instrument (see below), focal ratio, and magnification(s).

 Type of instrument:

B - Binoculars
C - Cassegrainian
EY - Naked eye
JB - Jones-Bird
M - Maksutov
N - Newtonian
R - Refractor
SC - Schmidt-Cassegrainian
SN - Schmidt-Newtonian

The Jones-Bird design is described by Jones (1957) and by Bird and Bowen (1979).

On a few occasions the stated telescope characteristics don't seem to match the telescope type listed, both as supplied by the observer. In the case of fast Schmidt-Cassegrainian telescopes, an auxiliary positive lens was probably used as a telecompressor (focal reducer), and a rather fast Cassegrainian telescope (f/10) is probably a Schmidt-Cassegrainian.

DurM Time [min] spent to execute the drawing.

Lim Limiting magnitude of stars visible to the naked eye. Interference with the observation is indicated by the letters C, M, T, or Z if used, which refer to city lights, moonlight, twilight, or zodiacal light, respectively.

Site Observing site identification number (cf. Table VIII).

Observer(s) Name(s) of observer(s). Additional observers are indicated in notes.

Notes Observer's or editor's comments, if any.

Photography

The photography report form, updated in *IHW Amateur Observer's Bulletin* No. 6 from the version in the *Manual*, was designed with intentionally redundant entries. This was occasionally helpful in interpreting an observer's report.

Images listed in the archive are those for which a quick

visual inspection without magnification suggested that the image could have use to someone studying the appearance of the comet. Even when an image is of doubtful quality it is listed, consistent with the philosophy that it is best to let archive users be aware of the availability of that image. Roughly one-eighth of the photos submitted were not included in the archive and neither are the numerous reports of photos taken for which no copy was included. The quality of the images in the files ranges from barely useful to superb, professional-level work. Figure 3 presents samples of both wide-angle and narrow-angle photographs.

The times listed in the archive were converted from exposure start and duration to mid-exposure time. Often the photographer gave the starting time to greater precision (in hours:minutes:seconds) than is indicated by the decimal conversion.

In the archive listing, telescopes used for photography commonly have the focal length, focal ratio, and aperture all (redundantly) specified. When camera lenses were used, only focal length and focal ratio are listed. The focal ratio listed for a camera lens is that used for the photograph, which may not be the widest-open aperture (lowest focal ratio) possible with the lens.

Auxiliary lenses are sometimes used on telescopes and cameras to increase or decrease the focal length. When re-imaging is not involved and a negative lens is used to increase the telescope's effective focal length for photography, the lens is commonly called a tele-extender or teleconverter. (Such a lens is called a Barlow lens when used visually.) A telecompressor or focal reducer is a positive lens that shortens the effective focal length without re-imaging.

The ISO (ASA/DIN) speed of the emulsion is given as supplied by the observer or manufacturer. Some emulsions do not have a speed (in the usual sense of the word) determined for them, so for these, and for emulsions that have been hypersensitized or push-processed, this column is left empty. For an emulsion for which different speeds are available by manufacturer's design and recommended processing, the speed as given by the observer is used.

Gas hypersensitizing and emulsion cooling both serve to increase the sensitivity of photographic emulsions or mitigate the effects of low intensity failure of the reciprocity law for photographic emulsions. Gas hypersensitized emulsions are available commercially (Lumicon and University Optics are two such suppliers) and are also prepared by observers themselves.

Considering the varying temperaments and world-wide locations of astrophotographers it would have been impossible to standardize photographic emulsions and processing. Thus, these details are provided with the archive listing.

Kodak developer D-19b is commonly used by European astrophotographers. It is an X-ray emulsion developer that is rather radically different in composition from its high contrast American namesake, D-19. Contact Eastman Kodak Co., Dept. 841-S, 343 State St., Rochester, NY 14650-0811, USA for details. Kodak can also provide details on the spectral transmission of their gelatin Wratten filter series (see *Kodak Filters for Scientific and*



a



b

Figure 3. (a) Michael Crist obtained this photograph of Comet Halley's coma and tail root on 11 January 1986 (AON# 850760). (b) Stephen Edberg captured Comet Halley's tail extending towards the Milky Way in this photograph on 20 March 1986 (AON# 851187).

Technical Uses in the references; many Wratten filter designation numbers have been adopted for equivalent glass filters made by other manufacturers).

There were variations in the way observers indicated the dilutions of their developers: for example, both 1 + 4 and 1 : 4 were used.

It seemed likely that original negatives or positives of the comets would be too precious for observers to want to give up. While there are some originals in the files, the archive largely lists copies in the files, of one of the following types:

Contact Prints - positive images on paper made by placing the original negative in contact with the photographic paper.

Negatives - May be originals or copies: some are mounted in slide frames.

Prints - These are usually enlargements from the original; occasionally a halftone or xerographic (often of poor quality) copy. Composite prints are so noted but are listed as a single entry with a mid-time determined as halfway between the initial opening of the shutter and its final closing, no matter what the individual exposure times and their separations were. Negative prints were submitted rarely.

Slides - 135-size (24 x 36 mm) positive black and white or color transparencies mounted in standard frames.

Transparencies - Positive images on film, unmounted, of 135-size or larger. Standard sizes are 135, providing an image area of approximately 24 x 36 mm, and 120, with an area of approximately 6 x 6 cm (sometimes 6 x 7 cm). Rarely, other larger films were used. The data files contain hard-copy images ranging in size from individual 135-size images to oversize prints.

For the purpose of standardization the *Amateur Observers' Manual* instructed observers to obtain calibration photos of M31, M83, and Orion's belt. Only a handful of observers cooperated. Calibration photos are stored with the comet photos but are not listed in the archive.

The format of the list of photographs in the printed archive is described below:

Date(UT) Decimal date of the time of observation. For photographs this is the middle of the exposure. Trailing zeroes are often mere space-fillers.

AON# Amateur observation network number, a unique reference number assigned to each observation.

FL, f/, and Ap Instrument focal length [m], focal ratio, and aperture [m]. Listed are the effective focal length and

effective focal ratio used. A note follows giving the nominal characteristics of the instrument if auxiliary optics were used in making the image.

FOV Computed field of view for a 24 x 36 mm frame. Larger format emulsions are identified in the notes.

ExpM Exposure time [min].

Emulsion Type of emulsion.

ISO The speed (ASA/DIN) of the emulsion.

Hyp "Y" indicates a hypersensitized emulsion, "C" stands for an exposure with a cooled-emulsion camera; otherwise an "N".

Gdng Type of guiding:

- C - Computed offsets to telescope drive
- M - By micrometer
- O - Cross hairs on central condensation
- S - Sidereal-rate drive or guiding on a star
- T - Cross hairs tangent to coma
- X - Cross hairs on a coma with no condensation

These methods are explained in Edberg (1983).

Id/Typ IHW- or observer-assigned number and type of image on file:

- C - Contact print
- N - Negative
- P - Enlarged print
- S - Slide
- T - Transparency

Site Observing site identification number (cf. Table VIII).

Observer(s) Name(s) of observer(s). Additional observers are indicated in notes.

Notes Observer's or editor's comments, if any.

Astrometry

A few amateur astronomers have been contributing much-needed astrometric observations of comets for many years. These astronomers worked directly with the IHW Astrometry Network. Several other amateur astrometrists sent their measurements to the Amateur Observation Network. Astrometry Network Discipline

Specialist Donald K. Yeomans analyzed these data and, unfortunately, found them unacceptable. These observers were encouraged to continue improving their technique; good astrometric measurements of comets and asteroids continue to be sorely needed.

Spectroscopy

Amateur astronomers apparently generated the only low dispersion spectra of Comet Halley (Figure 4). Reports of spectroscopic observations were made on a form closely matching the photographic report form. (Both the photography report form and the spectroscopy report form were each similarly revised in *IHW Amateur Observer's Bulletin* No. 6 from their versions in the *Manual*.) The principal difference was the request for information on the type of telescope and spectroscopic system used and on disperser characteristics. The archive listings indicate camera lens specifically with a "CL" and a camera lens may also be inferred, as in the listings of direct photographs, from the empty column listing for aperture.

Observer W. Tom Buchanan's spectrograph has an unusual design. It is basically an objective grating spectrograph using a camera lens. He has added a complex optical system which allows wavelength reference marks to be placed on the film with the target spectrum. His detailed description is on file with his spectra.

The format of the list of spectrograms in the printed archive is described below:

Date(UT) Decimal date of the time of observation. For spectrograms this is the middle of the exposure. Trailing zeroes are often mere space-fillers.

AON# Amateur observation network number, a unique reference number assigned to each observation.

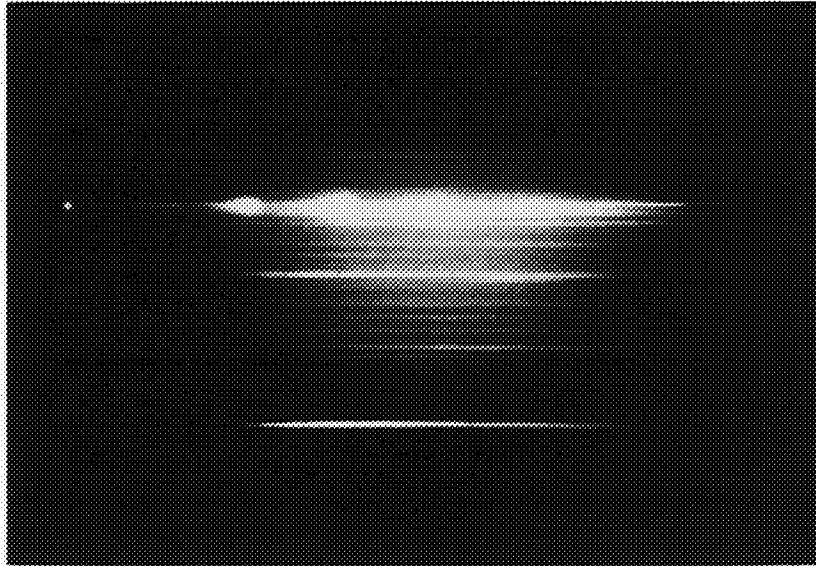
Config The type of spectrograph used. The initial number and letter pair indicates the disperser: the number gives the grooves/mm of Grating or the apex angle of a Prism. The second letter indicates the specific configuration used: Non-objective, Objective, or Slitless.

Ins The type of instrument used. An "N" indicates a Newtonian reflector, an "R" indicates a refractor, and "CL" indicates a camera lens was used.

FL, f/, and Ap Instrument focal length [m], focal ratio, and aperture [m]. Listed are the effective focal length and effective focal ratio used. A note follows giving the nominal characteristics of the instrument if auxiliary optics were used.

ExpM Exposure time [min].

a



b

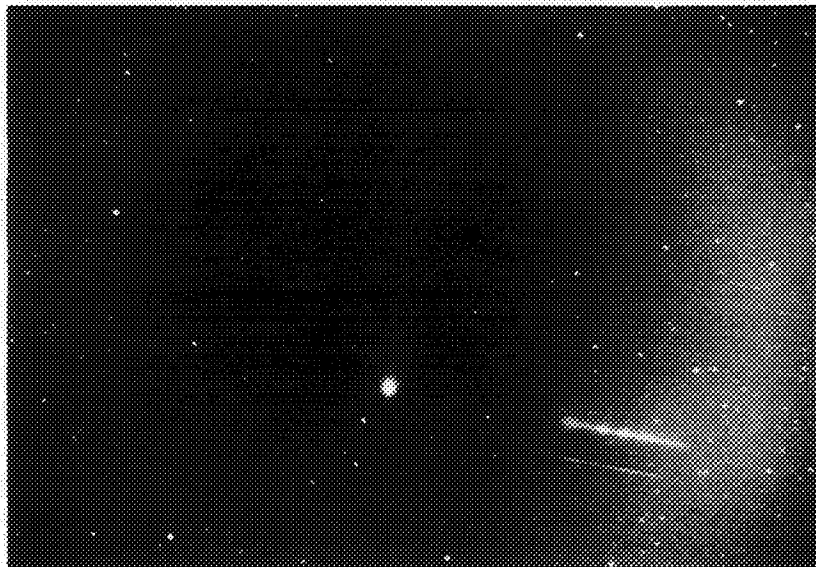


Figure 4. (a) Spectrogram of Comet Halley by W. Tom Buchanan taken on 9 April 1986 (AON# 870136). The continuum of reflected sunlight is punctuated with emissions of CN (on the far left) and various carbon compounds to the right. (b) Spectra of Comet Halley extend on both sides of the zero order image in this photograph by Stephen Edberg taken on 17 March 1986 (AON# 870132).

Emulsion Type of emulsion.

ISO The ASA/DIN speed of the emulsion.

Hyp "Y" indicates a hypersensitized emulsion, "C" stands for an exposure with a cooled-emulsion camera; otherwise an "N".

Gdng Type of guiding:

- C - Computed offsets to telescope drive
- M - By micrometer
- O - Cross hairs on central condensation
- S - Sidereal-rate drive or guiding on a star
- T - Cross hairs tangent to coma
- X - Cross hairs on a coma with no condensation

These methods are explained in Edberg (1983).

Id/Typ IHW- or observer-assigned number and type of image on file:

- C - Contact print
- N - Negative
- P - Enlarged print
- S - Slide
- T - Transparency

Site Observing site identification number (cf. Table VII).

Observer(s) Name(s) of observer(s). Additional observers are indicated in notes.

Notes Observer's or editor's comments, if any.

Photoelectric Photometry

Only one observer submitted photometric observations to the Amateur Observation Network, on his own report form (with the comment that the form in the manual was inadequate). These were forwarded to the professional Photometry and Polarimetry Network for disposition.

Meteor Observations

At the time the IHW was being organized a professional network of meteor observers was not included. Amateur meteor observations were solicited to ensure that at least some meteor data would be included in the archives, especially since this is a subject easily and traditionally studied by amateurs.

With much already known about these meteor showers, hourly counts, photography, and spectrophotography were emphasized. Halley Meteor Days were set from 1982-1987 for May 2-6 and October 20-24.

Visual hourly counts were emphasized initially (in the Manual) but with the encouragement and assistance of David Meisel of the American Meteor Society (AMS) radio counts were later added to the program. Mike Morrow and Ruthi Moore, the IHW Meteor Recorders, designed an improved Visual/Radio Meteor Observation Report form which was distributed and explained in the acknowledgement letter to observers and in Bulletin No. 5.

Well over a thousand meteor reports were received from several hundred observers. The majority of them observed only over periods of one or two hours, rather than the more desirable multiple hour periods. Efforts in meteor photography were minimal. Only three direct photos were submitted (one Eta Aquarid, one Orionid, and one sporadic meteor) and no spectra. The meteor photography report form was updated in parallel with that of photography and that of spectroscopy.

On the advice of the IHW's Steering Group, a professional Meteor Studies network was created and announced in *IHW Newsletter* (Edberg, 1982 - 1987) No. 7 (18 June 1985). With this network organized, all the amateur observations were forwarded to Discipline Specialist Anton Hajduk at the Astronomical Institute of the Slovak Academy of Sciences for inclusion in the meteor archive. Copies of all the data are also included with the paper files of the amateur archive.

III. FLEXIBLE IMAGE TRANSPORT SYSTEM (FITS) KEYWORDS IN THE DIGITAL ARCHIVE

FITS Headers

The amateur data are computer-archived on CD-ROM and magnetic tape according to the standard, extended FITS format. The visual data use a header with table extension format. All the other types include all the data in the primary header. To maintain consistency with the P/Crommelin data set, the header + table extension is used for the archives containing P/Giacobini-Zinner and P/Halley even though it would have been more efficient to include all the magnitude data in the primary header.

The FITS keyword sets used in the archive include both the FITS standard keywords and the table extension keyword set that is offered by FITS. The keywords used are described separately in Tables III - VII.

Table III. All Types of Data

```

SIMPLE = T / THIS IS A FITS FILE
BITPIX = 8 / BITS PER PIXEL
NAXIS = 0 / NO IMAGE DATA ARRAY PRESENT
EXTEND = T / THERE MAY BE STANDARD EXTENSIONS

OBJECT = 'ooo...oo' / NAME OF OBJECT
FILE-NUM= 8nnnnn / UNIQUE FILE IDENTIFICATION NO.
DATE-OBS= 'dd/mm/yy' / DATE OF MIDDLE OF OBSERVATION (UT)
TIME-OBS= .tttt / TIME OF MIDDLE OF OBSERVATION (UT)
DATE-REL= 'dd/mm/yy' / DATE OF PUBLIC RELEASE
DISCIPLN= 'AMATEUR' / IHW DISCIPLINE
LONG-OBS= 'ddd/mm/ss' / EAST LONGITUDE OF OBSERVING SITE
LAT-OBS= 'sdd/mm/ss' / LATITUDE OF OBSERVING SITE
SYSTEM = 8nnntt11 / OBSERVING SYSTEM CODE
OBSERVER= 'ooo...oo' / NAME OF OBSERVER
SUBMITTR= 'sss...ss' / NAME OF SUBMITTER OF DATA
SPEC-EVT= s / SPECIAL EVENT FLAG

```

Table IV. Visual Appearance

```

DAT-FORM= 'ASCII' / FORM OF DATA

DAT-TYPE= 'VISUAL MAG. EST.' / TYPE OF DATA
ELEV-OBS= 'eeee' / ELEVATION OF OBSERVING SITE (METER)
INSTRUME= 'iii...ii' / TYPE OF INSTRUMENT USED
APERTURE= 'a.aaa' / APERTURE SIZE (METER)
FRATIO = 'f.f' / FOCAL RATIO
POWER = 'ppp' / MAGNIFICATION
ORIGIN = 'JET PROPULSION LAB' / TAPE WRITING INSTITUTION
COMMENT ccc...cc

END

XTENSION= 'TABLE' / TABLE EXTENSION
BITPIX = 8 / BITS PER PIXEL
NAXIS = 2 / 2-D MATRIX
NAXIS1 = 71 / NO. OF CHARACTERS PER ROW
NAXIS2 = 1 / NO. OF XXXX
PCOUNT = 0 / NO. OF PARAMETERS
GCOUNT = 1 / ONLY ONE GROUP
TFIELDS = 16 / NO. OF FIELDS PER ROW

TTYPE1 = 'MAG. EST. METHOD' / VALUES: B=BOBROVNIKOFF, M=MORRIS, S=SIDGWICK
TBCOL1 = 1 / STARTING COLUMN
TFORM1 = 'A1' / FORMAT
TNULL1 = '?' / MISSING VALUE

TTYPE2 = 'COMA MAGNITUDE' / TOTAL MAGNITUDE (GIVEN AS ALPHANUMERIC
TBCOL2 = 3 / STARTING COLUMN STRING, SINCE 1ST COL. CAN
TFORM2 = 'A5' / FORMAT BE > SIGN, WHICH IMPLIES
TNULL2 = '-99.0' / MISSING VALUE UPPER LIMIT)

TTYPE3 = 'MAGNITUDE COMMENT' / INDICATES UNCERTAINTY IF VALUE IS : OR ?
TBCOL3 = 8 / STARTING COLUMN
TFORM3 = 'A1' / FORMAT
TNULL3 = ' ' / MISSING VALUE

TTYPE4 = 'CHART NO.' / USED FOR COMPARISON STARS (SEE PRINTED CROMMELIN ARCHIVE OR
TBCOL4 = 10 / STARTING COLUMN INT'L. COMET QRLY.
TFORM4 = 'A7' / FORMAT FOR EXPLANATION)
TNULL4 = ' ' / MISSING VALUE

TTYPE5 = 'COMA DIAMETER 1' / CIRCULAR COMA DIAM. (OR MAJOR AXIS, ELLIPTICAL
TBCOL5 = 18 / STARTING COLUMN COMA)
TFORM5 = 'E5.1' / FORMAT
TUNIT5 = 'ARCMIN.' / UNIT
TNULL5 = '-99.0' / MISSING VALUE

TTYPE6 = 'COMA DIAMETER 2' / MINOR AXIS, ELLIPTICAL COMA
TBCOL6 = 24 / STARTING COLUMN
TFORM6 = 'E5.1' / FORMAT
TUNIT6 = 'ARCMIN.' / UNIT
TNULL6 = '-99.0' / MISSING VALUE (OR CIRCULAR COMA)

TTYPE7 = 'DEGREE OF COND.' / DEGREE OF CONDENSATION
TBCOL7 = 30 / STARTING COLUMN
TFORM7 = 'I1' / FORMAT
TNULL7 = ' ' / MISSING VALUE

TTYPE8 = 'LENGTH OF TAIL 1' / TAIL LENGTH (1ST TAIL)
TBCOL8 = 32 / STARTING COLUMN
TFORM8 = 'E5.2' / FORMAT
TUNIT8 = 'DEGREE' / UNIT
TNULL8 = '-9.00' / MISSING VALUE

TTYPE9 = 'P.A. OF TAIL 1' / POSITION ANGLE OF TAIL (1ST TAIL)
TBCOL9 = 38 / STARTING COLUMN
TFORM9 = 'I3' / FORMAT
TUNIT9 = 'DEGREE' / UNIT
TNULL9 = '-99' / MISSING VALUE

```

Table IV. Visual Appearance (Cont'd)

```

TTYPE10 = 'LENGTH OF TAIL 2' / TAIL LENGTH (2ND TAIL, IF SEEN)
TBCOLL0 = 42 / STARTING COLUMN
TFORM10 = 'E5.2' / FORMAT
TUNIT10 = 'DEGREE' / UNIT
TNULL10 = '-9.00' / MISSING VALUE

TTYPE11 = 'P.A. OF TAIL 2' / POSITION ANGLE OF TAIL (2ND TAIL, IF SEEN)
TBCOLL1 = 48 / STARTING COLUMN
TFORM11 = 'I3' / FORMAT
TUNIT11 = 'DEGREE' / UNIT
TNULL11 = '-99' / MISSING VALUE

TTYPE12 = 'LENGTH OF TAIL 3' / TAIL LENGTH (3RD TAIL, IF SEEN)
TBCOLL2 = 52 / STARTING COLUMN

TFORM12 = 'E5.2' / FORMAT
TUNIT12 = 'DEGREE' / UNIT
TNULL12 = '-9.00' / MISSING VALUE

TTYPE13 = 'P.A. OF TAIL 3' / POSITION ANGLE OF TAIL (3RD TAIL, IF SEEN)
TBCOLL3 = 58 / STARTING COLUMN
TFORM13 = 'I3' / FORMAT
TUNIT13 = 'DEGREE' / UNIT
TNULL13 = '-99' / MISSING VALUE

TTYPE14 = 'LIMITING MAG.' / MAGNITUDE OF FAINTEST STAR VISIBLE TO NAKED EYE
TBCOLL4 = 62 / STARTING COLUMN
TFORM14 = 'E4.1' / FORMAT
TNULL14 = '-9.0' / MISSING VALUE

TTYPE15 = 'SKY INTERFERENCE' / LIGHT INTERFERING WITH OBSERVATION
TBCOLL5 = 66 / STARTING COLUMN (C=CITY LIGHTS, M=MOONLIGHT,
TFORM15 = 'A4' / FORMAT T=TWILIGHT, Z=ZODIACAL LIGHT)
TNULL15 = ' / MISSING VALUE (NO INTERFERENCE)
COMMENT VALUE EQUAL TO : IMPLIES UNCERTAINTY IN FAINTEST STAR MAG.

TTYPE16 = 'DARK ADAPTED' / WAS OBSERVER DARK ADAPTED? (Y=YES, N=NO)
TBCOLL6 = 71 / STARTING COLUMN
TFORM16 = 'A1' / FORMAT
TNULL16 = ' / MISSING VALUE

END

```

Table V. Drawings

```

DAT-FORM= 'NODATA' / FORM OF DATA (NO DATA RECORDS)

DAT-TYPE= 'DRAWING' / TYPE OF DATA
ELEV-OBS= 'eeee' / ELEVATION OF OBSERVING SITE (METER)
INSTRUME= 'iii...ii' / TYPE OF INSTRUMENT USED
APERTURE= 'a.aaa' / APERTURE SIZE (METER)
FRATIO = 'ff.f' / FOCAL RATIO
N-POWER = 'n' / NO. OF MAGNIFICATIONS USED
POWER = 'ppp' / MAGNIFICATION

MAG-LIM = 'm.m' / MAGNITUDE OF FAINTEST STAR VISIBLE TO NAKED EYE
PLTSCALE= 'ppp.p' / PLATE (DRAWING) SCALE (ARCSEC/MM)
DURATION= 'ddd' / TIME FOR MAKING DRAWING (SECOND)
ORIGIN = 'JET PROPULSION LAB' / TAPE WRITING INSTITUTION
COMMENT ccc...cc

END

```

Table VI. Photography

```

DAT-FORM= 'NODATA' / FORM OF DATA (NO DATA RECORDS)

DAT-TYPE= 'PHOTOGRAPH' / TYPE OF DATA
ELEV-OBS= 'eeee' / ELEVATION OF OBSERVING SITE (METER)
PRNCPLFL= 'p.ppp' / PRIMARY, UNMODIFIED INSTR. FOCAL LENGTH (METER)
TELEFL = 't.ttt' / EFFECTIVE FOCAL LENGTH (METER)
APERTURE= 'a.aaa' / APERTURE SIZE (METER)
FRATIO = 'ff.f' / FOCAL RATIO
FOVLENGT= 'ff.f' / COMPUTED FOV ASSUMING 135 FORMAT (DEGREE)
FOVWIDTH= 'ff.f' / COMPUTED FOV ASSUMING 135 FORMAT (DEGREE)
PLTSCALE= 'ppp.p' / PLATE SCALE (ARCSEC/MM)
EMULSION= 'eee...ee' / TYPE OF EMULSION
ISO = 'aaaa/dd' / ISO (ASA/DIN)
HYPERED = 'nhh...hh' / HYPERSENSITIZATION TREATMENT
TEMP-HYP= 'tt' / HYPERSENSITIZATION TEMPERATURE (CELSIUS)
TIME-HYP= 'ttt.t' / HYPERSENSITIZATION TIME (HOUR)
TEMP-EMUL= 'tt' / COLD CAMERA TEMPERATURE (CELSIUS)
DEVELOPR= 'ddd...dd' / DEVELOPER USED
TEMP-DEV= 'tt' / DEVELOPING TEMPERATURE (CELSIUS)
TIME-DEV= 'ttt' / DEVELOPING TIME (SECOND)
GUIDING = 'ggg...gg' / GUIDING METHOD
EXPOSURE= 'eeee' / EXPOSURE TIME (SECOND)
IM-ID = 'iii' / IMAGE IDENTIFICATION NO.
IM-TYPE = 'iii' / TYPE OF IMAGE ON FILE
ORIGIN = 'JET PROPULSION LAB' / TAPE WRITING INSTITUTION
COMMENT ccc...cc

END

```

Table VII. Spectroscopy

| | | |
|-------------------------------|--------|-------------------------------------------------|
| DAT-FORM= 'NODATA' | / | FORM OF DATA (NO DATA RECORDS) |
| DAT-TYPE= 'SPECTRUM' | / | TYPE OF DATA |
| ELEV-OBS= | eeee | ELEVATION OF OBSERVING SITE (METER) |
| INSTRUME= 'iii...ii' | / | TYPE OF INSTRUMENT USED |
| PRNCPLFL= | p.ppp | PRIMARY, UNMODIFIED INSTR. FOCAL LENGTH (METER) |
| TELEFL = | t.ttt | EFFECTIVE FOCAL LENGTH (METER) |
| APERTURE= | a.aaa | APERTURE SIZE (METER) |
| FRATIO = | ff.f | FOCAL RATIO |
| EMULSION= 'eee...ee' | / | TYPE OF EMULSION |
| ISO = 'aaaa/dd' | / | ISO (ASA/DIN) |
| HYPERED = 'hhh...hh' | / | HYPERSENSITIZATION TREATMENT |
| TEMP-HYP= | tt | HYPERSENSITIZATION TEMPERATURE (CELSIUS) |
| TIME-HYP= | ttt.t | HYPERSENSITIZATION TIME (HOUR) |
| TEMP-DEVP= | tt | COLD CAMERA TEMPERATURE (CELSIUS) |
| DEVELOPR= 'ddd...dd' | / | DEVELOPER USED |
| TEMP-DEV= | tt | DEVELOPING TEMPERATURE (CELSIUS) |
| TIME-DEV= | ttt | DEVELOPING TIME (SECOND) |
| GUIDING = 'ggg...gg' | / | GUIDING METHOD |
| EXPOSURE= | eeee | EXPOSURE TIME (SECOND) |
| GRATING = | ggg.g | GRATING CONSTANT (GROOVES/MM) |
| ORDER = | o | BLAZE XXXX |
| APDSPRSR= | a.aaaa | DISPERSER APERTURE (METER) |
| PROJDIST= | p.pppp | PROJECTION DISTANCE (METER) |
| APEX-ANG= | aaa | PRISM APEX ANGLE (DEGREE) |
| GLASSTYP= 'ggg...gg' | / | PRISM GLASS TYPE |
| AP-PRISM= | a.aaaa | PRISM APERTURE (METER) |
| METHOD = 'mmm...mm' | / | SPECTROSCOPIC METHOD |
| IM-ID = 'iii' | / | IMAGE IDENTIFICATION NO. |
| IM-TYPE = 'iii' | / | TYPE OF IMAGE ON FILE |
| ORIGIN = 'JET PROPULSION LAB' | / | TAPE WRITING INSTITUTION |
| COMMENT ccc...cc | | |

END

IV. OBSERVING SITE LIST

Listed in Table VIII below are the observers and all the comet observing sites they supplied to the IHW. Observers' names with diacritical marks on any letters were spelled, in this list, by adopting the closest English letter visually matching the letters with marks.

An observer may not have observed from all the sites listed. The site number preceding the site coordinates corresponds to the number in the Site column in the archive listings.

In some cases the geographic coordinates were estimated by the editor. Occasionally, different sites received the same coordinates because specific coordinates could not be found. Precision is the editor's subjective estimate of the observer's precision in reporting the site's coordinates. Especially large values indicate the editor estimated the site coordinates with an available map or atlas which did not show the place named by the observer. In a few cases the site position's precision was so high that it exceeded the space available in the format used here. Country is the IHW-assigned country code.

The country code, identified in Table IX, is in the last column.

V. CONCLUSIONS

Halley's Comet inspired amateur astronomers worldwide to contribute useful data to the IHW Archive. Halley is special, though, and the numbers of participants for any other comet or other significant astronomical event would probably be only a small fraction of this number. (One need only contemplate the small number of participants for the IHW-sponsored watches on P/Crommelin and P/Giacobini-Zinner to reach the same conclusion.) In another aspect of completeness, there are certainly numerous high quality photographs taken by amateurs which were not reported to the IHW. This is an unfortunate loss, as are the photos reported without copies submitted.

It was heartening to find that the majority of those participating took their efforts seriously enough to submit useful data. It was interesting to find that the observers new to the field of cometary observations followed directions better than the more experienced observers.

Future organizers of observational campaigns should certainly include amateur astronomers in their efforts. The talent available is a valuable resource that should be tapped. Do not expect even the most careful and lucid instructions to be followed rigorously, however. Even professional astronomers can be willful on occasion, and amateurs additionally may fail to appreciate the importance of standardizing observing techniques.

Table VIII. Observers

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|------------------|------|-----------|--------------|----------|------------|---------|
| Abbadessa, M. | 1 | 017/40/00 | +40/32/00 | 140 | 1 arcmin | 7 |
| | 2 | 015/00/00 | +35/26/00 | 300 | 1 arcmin | 7 |
| Abbott, J. | 1 | 031/10/52 | -17/43/35 | 1379 | 1 arcsec | 59 |
| | 2 | 031/11/24 | -17/42/44 | 1407 | 1 arcsec | 59 |
| | 3 | 000/38/19 | +51/48/12 | 24 | 1 arcsec | 15 |
| | 4 | 000/35/42 | +51/48/21 | 53 | 1 arcsec | 15 |
| Adamoli, G. | 1 | 010/00/00 | +45/00/00 | | 5 deg | 7 |
| | 2 | 012/00/00 | +45/30/00 | | 1 deg | 7 |
| Aerts, L. | 1 | 004/44/00 | +51/00/00 | 15 | 1 arcmin | 29 |
| | 2 | 004/42/00 | +51/02/00 | 10 | 1 arcmin | 29 |
| | 3 | 006/01/24 | +43/58/30 | 735 | 0.1 arcmin | 4 |
| | 4 | 004/44/00 | +51/08/00 | 25 | 1 arcmin | 29 |
| Afeltra, J. | 1 | 301/35/58 | -34/36/30 | 40 | 1 arcsec | 27 |
| | 2 | 301/33/56 | -34/36/19 | 35 | 1 arcsec | 27 |
| Akita, I. | 1 | 135/47/26 | +34/50/57 | 50 | 0.1 arcsec | 8 |
| | 2 | observing | site unknown | | | |
| Aleynikov, A. | 1 | observing | site unknown | | | |
| Allen, E. | 1 | 287/27/30 | +46/23/24 | 38 | 0.1 arcmin | 21 |
| | 2 | 287/40/30 | +46/28/30 | 33 | 0.1 arcmin | 21 |
| | 3 | 287/44/42 | +46/28/18 | 3 | 0.1 arcmin | 21 |
| Allen, M. T. | 1 | 278/52/00 | +37/58/00 | 671 | 1 arcmin | 16 |
| | 2 | 281/02/00 | +39/05/00 | 549 | 1 arcmin | 16 |
| | 3 | 149/00/00 | -35/18/00 | | 1 deg | 26 |
| | 4 | 144/00/00 | -17/06/00 | | 1 deg | 26 |
| Alvarez, M. L. | 1 | observing | site unknown | | | |
| Alves, A. A. | 1 | 311/28/24 | -27/34/30 | | 0.5 arcmin | 2 |
| | 2 | 311/28/20 | -27/34/34 | | 0.5 arcmin | 2 |
| Amoretti, M. | 1 | 007/45/54 | +48/49/03 | 86 | 1 arcsec | 7 |
| Anklam, W. | 1 | 013/21/11 | +52/27/32 | 78 | 1 arcsec | 25 |
| Antal, M. | 1 | 018/33/18 | +53/05/48 | 91 | 0.1 arcmin | 11 |
| Arbour, R. | 1 | 001/14/49 | +51/07/13 | 122 | 0.1 arcsec | 15 |
| Ariail, R. B. | 1 | 278/58/00 | +34/00/00 | 18 | 1 arcmin | 16 |
| | 2 | 277/37/00 | +35/14/00 | 975 | 1 arcmin | 16 |
| Arpin, P. | 1 | 286/31/00 | +45/51/00 | 30 | 1 deg | 21 |
| | 2 | 286/38/00 | +45/18/00 | 30 | 1 deg | 21 |
| | 3 | 285/41/00 | +45/33/00 | 100 | 1 deg | 21 |
| | 4 | 291/35/00 | +12/06/00 | 5 | 1 arcmin | 75 |
| | 5 | 286/32/00 | +45/26/00 | | 1 deg | 21 |
| Ashdown, M. | 1 | 174/46/00 | -41/17/00 | 250 | 1 arcmin | 48 |
| | 2 | 172/38/00 | -43/32/00 | 80 | 1 arcmin | 48 |
| | 3 | 168/42/00 | -45/02/00 | 700 | 1 arcmin | 48 |
| | 4 | 174/20/00 | -41/17/00 | 20 | 1 arcmin | 48 |
| Ashley, J. B. | 1 | 241/37/48 | +33/48/24 | 122 | 0.1 arcmin | 16 |
| | 2 | 242/35/42 | +33/32/54 | 823 | 0.1 arcmin | 16 |
| | 3 | 243/16/48 | +33/29/00 | 1329 | 0.1 arcmin | 16 |
| Association M31 | 1 | 055/18/00 | -21/02/00 | 500 | 1 arcmin | 70 |
| Auckbur, R. | 1 | 057/28/36 | -20/16/00 | 360 | 0.1 arcmin | 45 |
| | 2 | 057/26/54 | -20/13/18 | 210 | 0.1 arcmin | 45 |
| Bagla, J. S. | 1 | 077/12/00 | +28/38/00 | 230 | 1 arcmin | 5 |
| | 2 | 075/52/00 | +26/55/00 | 220 | 1 arcmin | 5 |
| Bailey, G. | 1 | 256/42/16 | +44/05/12 | 1049 | 1 arcsec | 16 |
| | 2 | 256/43/00 | +43/50/00 | | 1 deg | 16 |
| Barak, R. | 1 | 016/58/00 | +49/58/30 | 350 | 1 arcmin | 35 |
| Barclay, J. | 1 | 153/06/56 | -26/48/26 | | 0.1 arcsec | 26 |
| | 2 | 153/10/58 | -27/27/15 | | 0.1 arcsec | 26 |
| Baroni, S. | 1 | 009/07/02 | +45/27/19 | 138 | 0.1 arcsec | 7 |
| | 2 | 009/11/37 | +45/49/33 | 854 | 0.1 arcsec | 7 |
| | 3 | 009/15/00 | +46/26/00 | 1610 | 1 arcmin | 7 |
| | 4 | 009/23/00 | +45/51/00 | 1300 | 1 arcmin | 7 |
| | 5 | 008/27/00 | +45/53/00 | 1000 | 1 arcmin | 7 |
| | 6 | 009/30/54 | +45/47/21 | 1340 | 0.1 arcsec | 7 |
| Bartnik, M. | 1 | 012/23/00 | +51/18/00 | 120 | 1 arcmin | 23 |
| Battaini, P. | 1 | 009/00/00 | +46/00/00 | | 2 deg | 7 |
| | 2 | 015/31/00 | +21/35/00 | 1165 | 0.01 deg | 65 |
| Battipede, F. | 1 | 009/00/00 | +46/00/00 | | 2 deg | 7 |
| Batza, H. | 1 | observing | site unknown | | | |
| Bauer, H.-P. | 1 | 011/37/08 | +52/10/19 | 70 | 3.6 arcsec | 23 |
| | 2 | 011/38/20 | +52/10/16 | 70 | 3.6 arcsec | 23 |
| Beach, G. | 1 | 279/03/32 | +46/27/34 | 259 | 1 arcsec | 21 |
| | 2 | 279/01/28 | +46/28/03 | 294 | 1 arcsec | 21 |
| Begbie, M. J. R. | 1 | 031/00/22 | -17/49/39 | 1450 | 1 arcsec | 59 |
| | 2 | 031/11/24 | -17/42/44 | 1407 | 1 arcsec | 59 |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|--------------------|------|------------------------|-----------|----------|-------------|---------|
| Belli, V. | 1 | 009/00/00 | +46/00/00 | | 2 deg | 7 |
| Belyaev, D. | 1 | observing site unknown | | | | |
| Bembrick, C. | 1 | 151/12/12 | -33/51/40 | 44 | 1 arcsec | 26 |
| | 2 | 149/55/05 | -33/28/37 | 990 | 1 arcsec | 26 |
| | 3 | 144/39/00 | -38/16/00 | | 10 arcmin | 26 |
| | 4 | 130/58/00 | -25/11/00 | 782 | 1 arcmin | 26 |
| | 5 | 149/00/30 | -35/19/18 | 767 | 0.1 arcmin | 26 |
| Benavides, A. | 1 | 293/04/00 | +10/31/00 | | 2 deg | 17 |
| | 2 | 293/03/42 | +10/31/12 | | 0.1 arcsec | 17 |
| | 3 | 293/51/00 | +10/25/00 | | 1 arcmin | 17 |
| | 4 | 293/04/00 | +10/31/00 | | 2 deg | 17 |
| | 5 | 293/05/00 | +09/49/00 | | 2 deg | 17 |
| Berge, P. M. | 1 | 055/00/00 | -21/00/00 | 500 | 1 deg | 70 |
| Bernabeu, M. | 1 | 057/32/22 | -20/01/34 | | 2 1 arcsec | 45 |
| Bernardis, A. | 1 | 008/47/00 | +45/44/00 | 350 | 1 arcmin | 7 |
| | 2 | 008/46/00 | +45/52/00 | 1230 | 1 arcmin | 7 |
| | 3 | 012/36/00 | +35/32/00 | 100 | 1 arcmin | 7 |
| | 4 | 007/52/00 | +45/52/00 | 2390 | 1 arcmin | 7 |
| Bezrodnii, A. | 1 | observing site unknown | | | | |
| Bhadriah, L. H. E. | 1 | 076/42/00 | +12/31/00 | 770 | 1 arcmin | 5 |
| Bigbie, B. | 1 | 256/03/00 | +30/38/00 | 488 | 5 arcmin | 16 |
| Bilek, V. | 1 | 016/44/00 | +49/06/00 | 200 | 1 arcmin | 35 |
| | 2 | 016/07/00 | +49/34/00 | 700 | 1 arcmin | 35 |
| Binnewies, S. | 1 | 289/12/00 | -29/13/00 | 2400 | 1 arcmin | 32 |
| Birkner, A. | 1 | 272/20/46 | +41/55/19 | 190 | 3.6 arcsec | 16 |
| Boetto, M. | 1 | 008/36/00 | +45/30/00 | 240 | 1 arcmin | 7 |
| Bohme, D. | 1 | 012/01/15 | +51/09/05 | 169 | 1 arcsec | 23 |
| Bonnet, M. C. | 1 | 055/00/00 | -21/00/00 | | 2 deg | 70 |
| Bordignon, F. | 1 | 009/00/00 | +46/00/00 | | 2 deg | 7 |
| Bortle, J. E. | 1 | 286/15/24 | +41/34/18 | 122 | 0.1 arcmin | 16 |
| | 2 | 286/15/00 | +41/49/00 | | 1 arcmin | 16 |
| | 3 | 286/20/00 | +42/00/00 | | 1 arcmin | 16 |
| | 4 | 165/00/00 | +15/00/00 | | 10 deg | 98 |
| | 5 | 151/38/00 | -34/00/00 | | 1 deg | 26 |
| | 6 | 134/38/00 | -23/42/00 | 457 | 1 deg | 26 |
| | 7 | 130/54/00 | -25/30/00 | 549 | 5 arcmin | 26 |
| Both, S. J. J. | 1 | 004/43/00 | +52/01/00 | -2 | 1 arcmin | 46 |
| | 2 | 004/46/00 | +52/01/30 | -2 | 1 arcmin | 46 |
| | 3 | 008/25/00 | +50/10/00 | | 1 arcmin | 22 |
| Bottger, B. | 1 | 008/26/24 | +48/59/24 | 116 | 0.01 deg | 25 |
| | 2 | 008/28/12 | +48/51/00 | 400 | 0.01 deg | 25 |
| | 3 | 008/31/58 | +48/51/20 | 406 | 0.01 deg | 25 |
| | 4 | 343/23/00 | +28/15/00 | 2400 | 1 arcmin | 74 |
| | 5 | 343/23/00 | +28/15/00 | 100 | 1 arcmin | 74 |
| | 6 | 343/23/00 | +28/15/00 | 1400 | 1 arcmin | 74 |
| | 7 | 343/23/00 | +28/15/00 | 2100 | 1 arcmin | 74 |
| | 8 | 343/23/00 | +28/15/00 | 2200 | 1 arcmin | 74 |
| Bouma, R. J. | 1 | 006/13/18 | +53/23/12 | 0 | 0.1 arcmin | 46 |
| | 2 | 006/39/12 | +53/18/36 | 0 | 0.1 arcmin | 46 |
| | 3 | 006/29/42 | +53/14/24 | 0 | 0.1 arcmin | 46 |
| | 4 | 006/01/24 | +43/58/30 | 735 | 0.1 arcmin | 46 |
| | 5 | 006/00/00 | +53/00/00 | | 1 deg | 46 |
| | 6 | 006/33/00 | +52/53/00 | | 1 arcmin | 46 |
| | 7 | 006/15/36 | +53/20/36 | | 0.1 arcmin | 46 |
| | 8 | 006/34/18 | +53/17/12 | | 0.1 arcmin | 46 |
| | 9 | 006/34/18 | +53/15/00 | | 0.1 arcmin | 46 |
| | 10 | 006/34/18 | +53/20/00 | | 0.1 arcmin | 46 |
| | 11 | 151/29/24 | -33/19/48 | 30 | 0.01 arcmin | 26 |
| | 12 | 138/41/00 | -34/52/00 | 110 | 1 arcmin | 26 |
| | 13 | 143/22/12 | -34/22/12 | 60 | 0.01 arcmin | 26 |
| | 14 | 149/04/12 | -31/16/30 | 1125 | 0.1 arcmin | 26 |
| | 15 | 149/16/06 | -31/16/24 | 520 | 0.1 arcmin | 26 |
| | 16 | 149/50/00 | -31/40/00 | 450 | 1 arcmin | 26 |
| | 17 | 153/10/30 | -27/50/00 | 20 | 0.1 arcmin | 26 |
| | 18 | 153/15/30 | -27/41/00 | 0 | 0.1 arcmin | 26 |
| | 19 | 153/16/54 | -27/46/36 | 0 | 0.1 arcmin | 26 |
| | 20 | 153/17/48 | -27/43/24 | 0 | 0.1 arcmin | 26 |
| | 21 | 153/20/12 | -27/43/24 | 0 | 0.1 arcmin | 26 |
| | 22 | 153/15/00 | -27/35/00 | 85 | 1 arcmin | 26 |
| Bracken, R. | 1 | 239/10/00 | +35/18/00 | 61 | 1 arcmin | 16 |
| Bragadin, A. | 1 | 011/25/00 | +44/30/00 | 50 | 1 arcmin | 7 |
| | 2 | 011/13/00 | +44/18/00 | 300 | 1 arcmin | 7 |
| | 3 | 012/18/00 | +44/25/00 | 5 | 1 arcmin | 7 |
| | 4 | 011/12/00 | +44/10/00 | 450 | 1 arcmin | 7 |
| | 5 | 010/00/00 | +44/15/00 | 850 | 1 deg | 7 |
| Brancik, K. | 1 | 017/00/00 | +48/49/00 | 182 | 1 arcmin | 35 |
| | 2 | 016/51/00 | +48/50/00 | 155 | 1 arcmin | 35 |
| Brandli, W. | 1 | 008/00/00 | +47/30/00 | 690 | 4 deg | 18 |
| | 2 | 008/00/00 | +47/00/00 | 1200 | 4 deg | 18 |
| Bremseth, P. -J. | 1 | 010/32/21 | +63/25/32 | 5 | 1 arcsec | 47 |
| | 2 | 344/21/00 | +27/39/00 | | 1 deg | 74 |
| | 3 | 011/35/00 | +63/25/00 | | 1 deg | 47 |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|---------------------|------|------------------------|-----------|----------|------------|---------|
| Bretschneider, H. | 1 | 012/38/12 | +50/35/54 | 480 | 0.1 arcmin | 23 |
| | 2 | 012/38/48 | +50/35/54 | 430 | 0.1 arcmin | 23 |
| Briesemeister, J. | 1 | 013/21/12 | +52/27/30 | 78 | 0.1 arcmin | 25 |
| Bril, H.J. | 1 | 005/48/48 | +53/13/06 | 30 | 0.1 arcmin | 46 |
| | 2 | 005/48/00 | +50/57/00 | 50 | 1 arcmin | 29 |
| Bro, M. | 1 | 267/16/00 | +41/56/30 | 274 | 1 arcmin | 16 |
| Brogioni, A. | 1 | 012/02/35 | +43/07/45 | 250 | 5 arcsec | 7 |
| Bruhlin, W. | 1 | 007/27/15 | +46/51/14 | 960 | 0.1 arcsec | 18 |
| Brutsche, E. | 1 | 277/01/00 | +41/25/00 | 196 | 1 arcmin | 16 |
| | 2 | 279/00/00 | +27/30/00 | 18 | 1 deg | 16 |
| | 3 | 278/00/00 | +26/00/00 | 14 | 1 deg | 16 |
| Bryant, K. | 1 | 145/00/00 | -38/00/00 | 61 | 1 deg | 26 |
| Buchanan, W.T. | 1 | 275/15/00 | +32/50/00 | 425 | 1 arcmin | 16 |
| | 2 | 275/04/00 | +33/47/00 | 323 | 1 arcmin | 16 |
| | 3 | 277/01/00 | +35/22/00 | 1847 | 1 arcmin | 16 |
| | 4 | 275/09/00 | +33/44/00 | 375 | 1 arcmin | 16 |
| | 5 | 289/03/00 | -29/22/00 | 1124 | 1 arcmin | 32 |
| Budilka, P. | 1 | observing site unknown | | | | |
| Bukotkin, A. | 1 | observing site unknown | | | | |
| Burch, J.Q. | 1 | 237/22/00 | +47/35/00 | 24 | 1 arcmin | 16 |
| | 2 | 237/13/00 | +47/34/00 | 515 | 1 arcmin | 16 |
| | 3 | 237/17/00 | +47/37/00 | 122 | 1 arcmin | 16 |
| | 4 | 203/45/00 | +20/10/00 | 3054 | 1 arcmin | 76 |
| Bus, E.P. | 1 | 006/13/18 | +53/23/12 | 0 | 0.1 arcmin | 46 |
| | 2 | 006/39/12 | +53/18/36 | 0 | 0.1 arcmin | 46 |
| | 3 | 006/41/30 | +53/10/42 | 0 | 0.1 arcmin | 46 |
| | 4 | 006/01/24 | +43/58/30 | 735 | 0.1 arcmin | 4 |
| | 5 | 006/32/30 | +53/13/12 | 0 | 0.1 arcmin | 46 |
| | 6 | 006/15/36 | +53/20/36 | 0 | 0.1 arcmin | 46 |
| | 7 | 006/26/12 | +53/14/24 | 0 | 0.1 arcmin | 46 |
| | 8 | 345/55/54 | +28/38/18 | 140 | 0.1 arcmin | 74 |
| | 9 | 345/48/30 | +28/44/42 | 2340 | 0.1 arcmin | 74 |
| Buso, V. | 1 | observing site unknown | | | | |
| Campbell, R.N. | 1 | 170/30/00 | -45/54/00 | 80 | 1 arcmin | 48 |
| | 2 | 168/42/00 | -45/02/00 | 700 | 1 arcmin | 48 |
| Campos, J. | 1 | 030/56/37 | -29/55/25 | 112 | 1 arcsec | 13 |
| | 2 | 031/06/20 | -29/37/30 | 119 | 1 arcsec | 13 |
| | 3 | 030/25/00 | -29/45/00 | 850 | 1 arcmin | 13 |
| | 4 | 030/40/50 | -29/44/30 | 823 | 1 arcsec | 13 |
| | 5 | 021/12/00 | -28/18/00 | 1520 | 1 arcmin | 13 |
| | 6 | 027/37/00 | -28/20/00 | | 1 deg | 13 |
| | 7 | 032/00/00 | -30/00/00 | 10668 | 10 deg | 48 |
| Camurri, L. | 1 | 009/13/00 | +45/32/00 | 130 | 1 arcmin | 7 |
| | 2 | 009/28/00 | +45/56/00 | 770 | 1 arcmin | 7 |
| | 3 | 057/21/00 | -20/18/00 | 0 | 1 arcmin | 45 |
| Cano, M. | 1 | 359/07/00 | +41/39/00 | | 2 deg | 14 |
| Cappellari, M. | 1 | 011/28/06 | +45/32/33 | 184 | 1 arcsec | 7 |
| Cardiel, N. | 1 | 357/04/00 | +40/45/00 | 1005 | 1 arcmin | 14 |
| | 2 | 355/53/15 | +40/17/12 | 575 | 1 arcsec | 14 |
| | 3 | 356/18/00 | +40/19/00 | | 1 deg | 14 |
| | 4 | 355/55/00 | +40/17/00 | | 1 deg | 14 |
| | 5 | 356/54/39 | +40/31/24 | 929 | 1 arcsec | 14 |
| | 6 | 355/52/00 | +40/38/00 | | 1 deg | 14 |
| | 7 | 356/40/00 | +40/56/00 | | 2 deg | 14 |
| Carello, S. | 1 | observing site unknown | | | | |
| Carragan, J. | 1 | 286/26/30 | +42/45/55 | 164 | 1 arcsec | 16 |
| | 2 | 286/19/51 | +42/42/36 | 98 | 1 arcsec | 16 |
| | 3 | 286/03/39 | +42/38/33 | 128 | 1 arcsec | 16 |
| | 4 | 286/18/16 | +42/41/28 | 67 | 1 arcsec | 16 |
| | 5 | 288/31/00 | -30/16/00 | | 0.5 deg | 32 |
| | 6 | 289/15/00 | -30/01/00 | | 0.5 deg | 32 |
| Carragan, W. | 1 | 286/26/30 | +42/45/55 | 164 | 1 arcsec | 16 |
| | 2 | 286/19/51 | +42/42/36 | 98 | 1 arcsec | 16 |
| | 3 | 286/03/39 | +42/38/33 | 128 | 1 arcsec | 16 |
| | 4 | 286/18/16 | +42/41/28 | 67 | 1 arcsec | 16 |
| | 5 | 288/31/00 | -30/16/00 | | 0.5 deg | 32 |
| | 6 | 289/15/00 | -30/01/00 | | 0.5 deg | 32 |
| Castineiras, R.S.J. | 1 | 301/35/58 | -34/36/30 | 40 | 1 arcsec | 27 |
| | 2 | 301/33/56 | -34/36/19 | | 1 arcsec | 27 |
| | 3 | 301/34/16 | -34/37/07 | 20 | 0.1 arcsec | 27 |
| | 4 | 301/35/02 | -34/38/55 | | 1 arcsec | 27 |
| Castino, R. | 1 | 007/12/10 | +44/57/04 | 627 | 1 arcsec | 7 |
| Castrillon, M.E. | 1 | 296/06/00 | -34/30/00 | 154 | 1 arcmin | 27 |
| Chernis, K. | 1 | observing site unknown | | | | |
| Chester, G.R. | 1 | 282/01/01 | +38/36/25 | 146 | 1 arcsec | 16 |
| Chmielewski, W. | 1 | 303/40/00 | +35/15/00 | 20 | 1 arcmin | 89 |
| | 2 | 292/52/00 | +30/54/00 | 20 | 1 arcmin | 89 |
| | 3 | 282/45/00 | +25/48/00 | 20 | 1 arcmin | 89 |
| | 4 | 278/15/00 | +24/23/00 | 20 | 1 arcmin | 88 |
| | 5 | 273/37/00 | +26/48/00 | 20 | 1 arcmin | 88 |
| | 6 | 269/10/00 | +30/00/00 | 20 | 1 arcmin | 16 |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|--------------------|------|------------------------|-----------|----------|------------|---------|
| | 7 | 269/05/00 | +30/05/00 | 20 | 1 arcmin | 16 |
| | 8 | 269/37/00 | +27/25/00 | 20 | 1 arcmin | 88 |
| | 9 | 275/10/00 | +21/38/00 | 20 | 1 arcmin | 87 |
| | 10 | 279/31/00 | +22/09/00 | 20 | 1 arcmin | 79 |
| | 11 | 298/20/00 | +32/00/00 | 20 | 1 arcmin | 89 |
| Chodorowski, F. | 1 | 023/06/46 | +53/04/45 | 150 | 1 arcsec | 11 |
| Chuprakov, S. | 1 | observing site unknown | | | | |
| Churyumov, K. | 1 | observing site unknown | | | | |
| Cifuentes, E. | 1 | 358/06/24 | +43/17/01 | 120 | 1 arcsec | 14 |
| | 2 | 358/00/57 | +43/17/44 | 108 | 1 arcsec | 14 |
| | 3 | 293/56/12 | +18/22/48 | 25 | 1 arcsec | 77 |
| | 4 | 292/49/42 | +18/01/15 | 1 | 1 arcsec | 77 |
| | 5 | 294/02/00 | +18/18/18 | 175 | 1 arcsec | 77 |
| | 6 | 057/32/22 | -20/01/34 | 2 | 1 arcsec | 45 |
| Cimatti, A. | 1 | 011/19/38 | +44/29/00 | 50 | 1 arcmin | 7 |
| | 2 | 011/15/13 | +44/28/00 | 245 | 1 arcmin | 7 |
| | 3 | 011/20/00 | +43/59/00 | 750 | 10 arcmin | 7 |
| | 4 | 011/15/00 | +46/00/00 | 1610 | 2 deg | 7 |
| | 5 | 057/32/22 | -20/02/36 | | 1 arcsec | 45 |
| Clark, M. L. | 1 | 116/04/20 | -32/07/18 | 274 | 1 arcsec | 26 |
| | 2 | 115/00/00 | -32/00/00 | | 1 deg | 26 |
| | 3 | 115/00/00 | -30/00/00 | | 10 deg | 26 |
| | 4 | 115/00/00 | -31/00/00 | | 1 deg | 26 |
| Coco, M. | 1 | 243/10/00 | +33/50/00 | 914 | 5 arcmin | 16 |
| | 2 | 240/55/00 | +34/50/00 | 1570 | 5 arcmin | 16 |
| | 3 | 241/50/00 | +34/10/00 | 1554 | 5 arcmin | 16 |
| | 4 | 242/55/00 | +33/00/00 | 335 | 5 arcmin | 16 |
| Comello, G. | 1 | 006/26/36 | +53/07/42 | 4 | 0.1 arcmin | 46 |
| | 2 | 006/24/00 | +53/08/00 | 3 | 1 arcmin | 46 |
| | 3 | 006/24/30 | +53/08/24 | 5 | 0.1 arcmin | 46 |
| | 4 | 006/03/00 | +43/59/00 | 730 | 1 arcmin | 4 |
| | 5 | 006/33/00 | +52/53/00 | | 1 arcmin | 46 |
| | 6 | 006/29/30 | +53/09/24 | | 0.1 arcmin | 46 |
| | 7 | 345/55/54 | +28/38/18 | 140 | 0.1 arcmin | 74 |
| | 8 | 345/48/00 | +28/45/00 | 2300 | 1 arcmin | 74 |
| | 9 | 009/24/54 | +46/49/12 | 660 | 0.1 arcmin | 18 |
| Conrad, R. | 1 | 016/20/03 | +48/14/30 | 220 | 1 arcsec | 28 |
| | 2 | 016/09/27 | +48/17/01 | | 1 arcsec | 28 |
| | 3 | 343/30/00 | +28/18/00 | 2300 | 1 arcmin | 74 |
| | 4 | 343/26/25 | +28/17/20 | 2350 | 1 arcsec | 74 |
| | 5 | 013/23/00 | +46/37/00 | | 1 arcmin | 28 |
| Cook, A. J. | 1 | 241/41/54 | +34/06/47 | 357 | 0.1 arcsec | 16 |
| | 2 | 241/18/00 | +34/34/00 | 914 | 1 arcmin | 16 |
| | 3 | 240/44/00 | +34/47/00 | 2530 | 1 arcmin | 16 |
| | 4 | 243/17/00 | +33/44/00 | 1615 | 1 arcmin | 16 |
| | 5 | 242/03/00 | +34/15/00 | 1524 | 1 arcmin | 16 |
| | 6 | 241/50/00 | +34/05/00 | 300 | 1 arcmin | 16 |
| | 7 | 133/53/00 | -23/43/00 | 600 | 1 arcmin | 26 |
| | 8 | 201/00/00 | +15/00/00 | 11277 | 1 deg | 98 |
| | 9 | 241/11/00 | +34/10/00 | 300 | 1 arcmin | 16 |
| | 10 | 242/00/00 | +33/14/00 | 1500 | 1 arcmin | 16 |
| | 11 | 244/34/00 | +33/43/00 | 500 | 1 arcmin | 16 |
| | 12 | 243/56/00 | +30/20/00 | 4 | 1 arcmin | 9 |
| | 13 | 245/12/00 | +29/43/00 | 400 | 1 arcmin | 9 |
| | 14 | 247/06/00 | +27/23/00 | 1000 | 1 arcmin | 9 |
| | 15 | 248/37/00 | +26/00/00 | 2 | 1 arcmin | 9 |
| | 16 | 250/17/00 | +23/11/00 | 7 | 1 arcmin | 9 |
| | 17 | 113/15/00 | -24/27/00 | 500 | 1 arcmin | 26 |
| | 18 | 131/01/00 | -25/20/30 | 538 | 1 arcmin | 26 |
| | 19 | 240/01/00 | +34/44/00 | 1067 | 1 arcmin | 16 |
| | 20 | 244/02/00 | +33/47/00 | 1000 | 1 arcmin | 16 |
| Crist, M. | 1 | 272/45/25 | +36/02/38 | 222 | 0.1 arcsec | 16 |
| Crossley, G. | 1 | 283/07/01 | +41/00/00 | 125 | 1 deg | 16 |
| Csomos, G. | 1 | 020/00/48 | +48/23/36 | 210 | 0.1 arcsec | 35 |
| Csukas, M. | 1 | 021/39/00 | +46/48/00 | 90 | 1 arcmin | 60 |
| Cunningham, J. | 1 | 253/05/00 | +38/33/00 | 2515 | 1 arcmin | 16 |
| Curtis, D. | 1 | 170/30/00 | -45/50/00 | 100 | 0.5 deg | 48 |
| Cuthill, D. D. | 1 | 285/26/51 | +39/29/09 | 16 | 0.1 arcsec | 16 |
| | 2 | 285/23/00 | +39/48/00 | 48 | 1 deg | 16 |
| | 3 | 285/04/25 | +39/43/36 | | 1 arcsec | 16 |
| Cuthill, L. | 1 | 285/04/00 | +39/48/37 | 48 | 1 arcsec | 16 |
| | 2 | 285/04/25 | +39/48/36 | 48 | 1 arcsec | 16 |
| | 3 | 285/03/47 | +39/48/23 | 48 | 1 arcsec | 16 |
| Czerniewski, W. | 1 | 018/37/30 | +54/23/11 | 3 | 1 arcsec | 11 |
| da Silva, L. A. L. | 1 | 308/48/22 | -30/03/17 | 13 | 0.1 arcsec | 2 |
| | 2 | 308/59/16 | -30/20/01 | 65 | 0.1 arcsec | 2 |
| | 3 | 308/58/14 | -30/20/59 | 60 | 0.1 arcsec | 2 |
| | 4 | 308/29/15 | -30/14/35 | 230 | 1 arcsec | 2 |
| | 5 | 309/16/00 | -29/48/00 | | 3 arcmin | 2 |
| | 6 | 309/00/00 | -30/22/00 | | 3 arcmin | 2 |
| | 7 | 308/30/00 | -30/05/00 | | 3 arcmin | 2 |
| | 8 | 309/48/00 | -30/08/00 | | 3 arcmin | 2 |
| Dal Santo, M. | 1 | 011/32/00 | +45/14/00 | 13 | 1 arcmin | 7 |
| | 2 | 011/32/00 | +45/14/00 | 12 | 1 arcmin | 7 |
| Danilov, M. | 1 | observing site unknown | | | | |
| Darvaan, T. A. | 1 | 010/24/14 | +59/46/33 | 210 | 1 arcsec | 47 |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|---------------------|------|------------------------|-----------|----------|-------------|---------|
| Date, M. | 1 | 136/30/00 | +35/00/00 | 200 | 0.1 deg | 8 |
| | 2 | 136/37/48 | +34/56/24 | 5 | 0.1 deg | 8 |
| de Assis Neto, V.F. | 1 | 315/00/16 | -20/47/22 | 920 | 1 arcsec | 2 |
| | 2 | 315/00/15 | -20/43/09 | 997 | 1 arcsec | 2 |
| de la Rosa Jr., A. | 1 | 266/06/00 | +29/48/00 | 2 | 0.1 deg | 16 |
| de Luis, J. | 1 | 357/04/00 | +40/45/00 | 995 | 1 arcmin | 14 |
| DeYoung, J.A. | 1 | 282/53/32 | +38/44/32 | 9 | 0.1 arcsec | 16 |
| | 2 | 282/56/07 | +38/55/12 | 99 | 0.01 arcsec | 16 |
| | 3 | 282/56/01 | +38/55/17 | 93 | 0.01 arcsec | 16 |
| | 4 | 281/45/32 | +37/58/01 | 151 | 0.1 arcsec | 16 |
| | 5 | 282/04/00 | +38/41/12 | 244 | 0.1 arcmin | 16 |
| Deconinck, M. | 1 | 004/33/28 | +50/42/01 | 107 | 1 arcsec | 29 |
| | 2 | 004/20/37 | +50/47/43 | 79 | 1 arcsec | 29 |
| | 3 | 004/27/42 | +50/38/47 | 145 | 1 arcsec | 29 |
| | 4 | 005/20/28 | +50/45/47 | 185 | 1 arcsec | 29 |
| | 5 | 007/24/00 | +46/18/00 | 1515 | 1 arcmin | 29 |
| | 6 | 007/32/30 | +46/13/00 | 1600 | 1 arcmin | 29 |
| | 7 | 002/49/00 | +50/00/12 | 400 | 1 arcmin | 29 |
| Delfs, M. | 1 | 013/21/11 | +52/27/32 | 78 | 1 arcsec | 25 |
| Di Meglio, F. | 1 | 013/56/55 | +40/44/22 | 30 | 1 arcsec | 7 |
| | 2 | 013/57/29 | +40/43/57 | 25 | 1 arcsec | 7 |
| | 3 | 013/56/48 | +40/42/38 | 398 | 1 arcsec | 7 |
| | 4 | 013/53/45 | +40/43/45 | 787 | 1 arcsec | 7 |
| Diaz P., E. | 1 | 286/10/00 | +05/07/00 | 3200 | 1 arcmin | 33 |
| | 2 | 286/02/00 | +04/43/00 | 2800 | 1 arcmin | 33 |
| | 3 | 286/31/00 | +05/01/00 | 1800 | 1 arcmin | 33 |
| | 4 | 285/55/00 | +05/06/00 | 2800 | 1 arcmin | 33 |
| | 5 | 287/33/00 | +07/20/00 | 3300 | 1 arcmin | 33 |
| | 6 | 286/37/00 | +04/52/00 | 2800 | 1 arcmin | 33 |
| | 7 | 285/56/00 | +04/05/00 | 2600 | 1 arcmin | 33 |
| Dietrich, M. | 1 | 010/02/54 | +51/15/12 | 380 | 0.1 arcmin | 23 |
| | 2 | 015/51/24 | -21/57/12 | 1300 | 0.1 arcmin | 65 |
| Dilsizian, R. | 1 | 286/13/08 | +41/23/59 | 296 | 1 arcsec | 16 |
| | 2 | 286/20/08 | +41/28/00 | 52 | 1 arcsec | 16 |
| | 3 | 300/34/00 | +13/07/30 | 1 | arcmin | 71 |
| Dionisi, M. | 1 | 012/27/15 | +41/55/25 | 0 | 1 arcsec | 7 |
| | 2 | 012/38/00 | +41/26/00 | 0 | 1 arcmin | 7 |
| Dodd, W.J. | 1 | 275/47/10 | +39/51/13 | 293 | 1 arcsec | 16 |
| | 2 | 278/38/00 | +28/32/00 | 0.5 deg | 16 | |
| | 3 | 278/30/00 | +28/00/00 | 8 deg | 16 | |
| | 4 | 275/37/22 | +40/02/18 | 1 arcsec | 16 | |
| Dominici, A. | 1 | 012/06/15 | +42/24/59 | 200 | 1 arcsec | 7 |
| Donatiello, G. | 1 | 017/14/24 | +40/30/00 | 124 | 1 arcmin | 7 |
| | 2 | 017/14/42 | +40/29/00 | 153 | 1 arcmin | 7 |
| Donth, D. | 1 | 287/51/40 | +43/26/47 | 274 | 1 arcsec | 16 |
| Douma, H. | 1 | 006/55/24 | +53/19/12 | 0 | 0.1 arcmin | 46 |
| | 2 | 006/50/48 | +53/21/36 | 0 | 0.1 arcmin | 46 |
| Dragesco, J. | 1 | 029/46/00 | +02/18/00 | 1750 | 20 arcmin | 52 |
| | 2 | 024/00/00 | +22/00/00 | 10 deg | 64 | |
| Drapun, A. | 1 | observing site unknown | | | | |
| Drapun, I. | 1 | observing site unknown | | | | |
| Dyachuk, A. | 1 | observing site unknown | | | | |
| Dzhultaev, K. | 1 | observing site unknown | | | | |
| Dziura, W. | 1 | 022/14/00 | +49/56/00 | 1 arcmin | | 11 |
| Edberg, S.J. | 1 | 241/42/10 | +34/16/25 | 488 | 2 arcsec | 16 |
| | 2 | 240/54/34 | +34/44/50 | 1570 | 2 arcsec | 16 |
| | 3 | 242/00/30 | +34/16/40 | 1524 | 1 arcsec | 16 |
| | 4 | 242/19/12 | +34/22/54 | 2287 | 1 arcsec | 16 |
| | 5 | 241/17/03 | +34/34/28 | 1006 | 1 arcsec | 16 |
| | 6 | 241/24/12 | +34/39/30 | 549 | 5 arcsec | 16 |
| | 7 | 241/11/30 | +34/43/30 | 899 | 2 arcmin | 16 |
| | 8 | 241/58/00 | +34/31/00 | 914 | 1 arcmin | 16 |
| | 9 | 244/00/00 | +34/08/00 | 610 | 2 arcmin | 16 |
| | 10 | 210/23/00 | -17/34/00 | 3 | 10 arcmin | 61 |
| | 11 | 210/14/00 | -17/31/00 | 3 | 10 arcmin | 61 |
| | 12 | 243/30/00 | +32/49/00 | 1372 | 1 arcmin | 16 |
| | 13 | 243/13/00 | +34/15/00 | 2286 | 2 arcmin | 16 |
| | 14 | 242/03/00 | +34/21/00 | 2134 | 1 arcmin | 16 |
| | 15 | 241/27/00 | +34/22/00 | 396 | 2 arcmin | 16 |
| | 16 | 253/40/00 | +39/35/00 | 3048 | 2 arcmin | 16 |
| | 17 | 241/52/00 | +34/19/00 | 762 | 2 arcmin | 16 |
| | 18 | 241/55/00 | +34/16/00 | 1372 | 2 arcmin | 16 |
| | 19 | 245/00/00 | +36/00/00 | 10600 | 4 deg | 98 |
| Elias, P. | 1 | 015/55/18 | +49/33/13 | 590 | 1 arcsec | 35 |
| Eltri, M. | 1 | 012/22/08 | +45/24/43 | 10 | 1 arcsec | 7 |
| | 2 | 012/24/00 | +45/24/00 | 3 | 0.1 deg | 7 |
| Emerson, G. | 1 | 254/37/30 | +39/52/30 | 2750 | 5 arcsec | 16 |
| | 2 | 256/21/00 | +29/18/00 | 1000 | 0.01 deg | 16 |
| Emrich, G. | 1 | observing site unknown | | | | |
| Fabre, R. | 1 | 202/04/12 | +21/37/00 | 3 | 1 arcmin | 76 |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|------------------|------|------------------------|-----------|----------|--------------|---------|
| | 2 | 201/57/00 | +21/32/00 | 3 | 1 arcmin | 76 |
| | 3 | 204/32/00 | +19/50/00 | | 1 arcmin | 76 |
| | 4 | 201/53/00 | +21/28/00 | | 1 arcmin | 76 |
| Fabricius, J. | 1 | 018/45/38 | +48/43/40 | 440 | 0.1 arcsec | 35 |
| Falorni, M. | 1 | 011/21/30 | +43/41/30 | 420 | 1 arcsec | 7 |
| | 2 | 011/26/00 | +43/45/00 | 180 | 1 arcmin | 7 |
| Falsarella, N. | 1 | 310/36/50 | -20/48/56 | 468 | 1 arcsec | 2 |
| Falvo, S.A. | 1 | 284/47/20 | +43/05/50 | 131 | 1 arcsec | 16 |
| | 2 | 284/41/19 | +43/03/52 | 229 | 1 arcsec | 16 |
| | 3 | 284/46/54 | +43/03/06 | 335 | 1 arcsec | 16 |
| Farrington, W.R. | 1 | 291/32/00 | +45/58/00 | 244 | 1 arcmin | 16 |
| Farroni, G. | 1 | 055/18/00 | -21/02/00 | 500 | 1 arcmin | 70 |
| | 2 | 000/44/56 | +47/22/10 | 70 | 0.01 arcmin | 4 |
| Feijth, H. | 1 | 005/48/48 | +53/10/54 | 0 | 0.1 arcmin | 46 |
| | 2 | 006/01/24 | +43/58/30 | 735 | 0.1 arcmin | 4 |
| | 3 | 005/48/48 | +53/05/30 | | 1 arcmin | 46 |
| Feisheng, J. | 1 | 119/00/00 | +33/00/00 | 2 | 1 deg | 10 |
| Fernandez, Y. | 1 | 303/42/30 | -34/52/30 | 29 | 10 arcmin | 62 |
| Ferrin, I. | 1 | 289/08/00 | +08/47/26 | 3600 | 1 arcsec | 17 |
| | 2 | 288/52/37 | +08/37/35 | 1880 | 1 arcsec | 17 |
| | 3 | observing site unknown | | | | |
| | 4 | 289/13/12 | +08/54/12 | 4310 | 0.1 arcmin | 17 |
| Filimon, E. | 1 | 013/36/33 | +47/54/47 | 860 | 1 arcsec | 28 |
| | 2 | 013/36/00 | +47/57/36 | 486 | 3.6 arcsec | 28 |
| | 3 | 013/36/17 | +47/57/36 | 486 | 1 arcsec | 28 |
| Filimonchev, S. | 1 | observing site unknown | | | | |
| Fischer, D. | 1 | 007/06/00 | +50/42/00 | 195 | 0.1 deg | 25 |
| | 2 | 007/00/00 | +50/00/00 | 300 | 1 deg | 25 |
| | 3 | 006/38/00 | +51/27/00 | | 5 arcmin | 25 |
| | 4 | 007/06/00 | +50/44/00 | | 5 arcmin | 25 |
| | 5 | 016/00/00 | -22/00/00 | 900 | 1 deg | 65 |
| Fitzgerald, P. | 1 | observing site unknown | | | | |
| Fleet, R.W. | 1 | 031/11/00 | -17/43/00 | 1407 | 1 arcmin | 59 |
| | 2 | 028/12/00 | -25/42/00 | | 0.1 deg | 13 |
| | 3 | 029/15/00 | -29/50/00 | | 1 arcmin | 13 |
| | 4 | 030/54/00 | -29/42/00 | | 0.1 deg | 13 |
| | 5 | 031/41/00 | -21/07/00 | | 1 arcmin | 59 |
| | 6 | 031/08/08 | -17/41/55 | 1500 | 1 arcsec | 59 |
| Foster, G. | 1 | 278/36/00 | +28/18/00 | 21 | 1 arcmin | 16 |
| Foulkes, M. | 1 | 359/45/48 | +51/47/36 | 85 | 0.1 arcmin | 15 |
| | 2 | 359/57/12 | +53/33/24 | 0 | 0.1 arcmin | 15 |
| | 3 | 359/57/30 | +53/34/06 | 10 | 0.1 arcmin | 15 |
| | 4 | 359/54/00 | +51/46/12 | 70 | 0.1 arcmin | 15 |
| | 5 | 359/49/30 | +51/47/12 | 80 | 0.1 arcmin | 15 |
| | 6 | 359/14/00 | +51/15/00 | | 1 arcmin | 15 |
| | 7 | 359/46/00 | +51/45/30 | 85 | 1 arcmin | 15 |
| | 8 | 148/11/00 | -33/09/00 | | 1 arcmin | 26 |
| | 9 | 149/18/00 | -31/14/00 | | 1 arcmin | 26 |
| | 10 | 148/35/00 | -32/11/00 | | 5 arcmin | 26 |
| | 11 | 133/50/00 | -24/18/00 | | 1 deg | 26 |
| | 12 | 133/50/00 | -24/07/00 | | 1 deg | 26 |
| | 13 | 131/03/00 | -23/21/00 | | 1 deg | 26 |
| | 14 | 133/50/00 | -23/51/00 | | 1 deg | 26 |
| Fox, J.H. | 1 | 267/11/30 | +44/52/10 | 277 | 0.1 arcsec | 16 |
| Franch, J. | 1 | 272/15/00 | +41/52/00 | 258 | 1 arcmin | 16 |
| | 2 | 271/46/00 | +40/07/00 | 320 | 1 arcmin | 16 |
| Franciosi, C. | 1 | 008/46/15 | +45/52/04 | 1228 | 0.001 arcsec | 7 |
| | 2 | 008/54/43 | +45/49/17 | 394 | 0.01 arcsec | 7 |
| Freydank, E. | 1 | 071/30/00 | +04/30/00 | 78 | 4 deg | 78 |
| | 2 | 013/21/11 | +52/27/32 | 78 | 1 arcsec | 25 |
| Freydank, H. | 1 | 013/21/11 | +52/27/32 | 78 | 1 arcsec | 25 |
| | 2 | 013/20/00 | +52/31/00 | | 1 deg | 25 |
| Frosina, A. | 1 | 013/15/00 | +38/08/00 | 14 | 4 arcmin | 7 |
| | 2 | 014/15/00 | +37/32/00 | 950 | 4 arcmin | 7 |
| | 3 | 015/15/00 | +37/02/00 | 30 | 4 arcmin | 7 |
| Furia, S. | 1 | 008/46/15 | +45/52/04 | 1226 | 0.001 arcsec | 7 |
| | 2 | 015/51/00 | -21/58/00 | 1165 | 1 arcmin | 65 |
| Gainsford, M.J. | 1 | 358/39/50 | +52/32/07 | 100 | 1 arcsec | 15 |
| | 2 | 358/45/17 | +52/33/53 | | 1 arcsec | 15 |
| | 3 | 358/41/02 | +52/28/19 | | 1 arcsec | 15 |
| | 4 | 358/35/36 | +52/35/42 | | 0.1 arcmin | 15 |
| | 5 | 358/22/42 | +52/27/06 | | 0.1 arcmin | 15 |
| | 6 | 358/52/12 | +52/38/18 | | 0.1 arcmin | 15 |
| | 7 | observing site unknown | | | | |
| Gallego, J. | 1 | 357/04/00 | +40/45/00 | 1005 | 1 arcmin | 14 |
| | 2 | 356/07/00 | +40/15/00 | | 2 deg | 14 |
| | 3 | 355/52/15 | +40/17/12 | 575 | 1 arcsec | 14 |
| | 4 | 356/18/00 | +40/26/00 | | 0.5 deg | 14 |
| | 5 | 356/54/39 | +40/31/24 | 929 | 1 arcsec | 14 |
| | 6 | 355/52/00 | +40/38/00 | | 0.5 deg | 14 |
| Galli, A. | 1 | observing site unknown | | | | |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|------------------|------|-----------|--------------|----------|------------|---------|
| | 2 | 303/49/00 | -34/53/00 | 8 | 1 arcmin | 62 |
| Garcia, A. | 1 | 286/00/00 | +05/00/00 | | 5 deg | 33 |
| Garradd, G. | 1 | 151/15/15 | -31/26/57 | 1300 | 1 arcsec | 26 |
| | 2 | 150/54/43 | -30/55/50 | 447 | 1 arcsec | 26 |
| | 3 | 151/07/54 | -31/21/45 | 545 | 1 arcsec | 26 |
| | 4 | 150/29/19 | -30/52/21 | 330 | 1 arcsec | 26 |
| | 5 | 150/45/49 | -30/44/39 | 385 | 1 arcsec | 26 |
| | 6 | 150/56/24 | -31/05/01 | 450 | 1 arcsec | 26 |
| | 7 | 151/08/38 | -30/56/55 | 1320 | 1 arcsec | 26 |
| | 8 | 150/50/55 | -31/03/02 | 375 | 1 arcsec | 26 |
| | 9 | 150/49/31 | -31/09/14 | 478 | 1 arcsec | 26 |
| | 10 | 150/13/00 | -30/52/34 | 270 | 1 arcsec | 26 |
| | 11 | 149/54/06 | -31/42/34 | 865 | 1 arcsec | 26 |
| | 12 | 149/04/10 | -31/16/28 | 1126 | 1 arcsec | 26 |
| | 13 | 150/09/21 | -30/16/40 | 1400 | 1 arcsec | 26 |
| | 14 | 150/40/29 | -30/52/34 | 535 | 1 arcsec | 26 |
| | 15 | 150/55/21 | -31/01/58 | 470 | 1 arcsec | 26 |
| | 16 | 150/34/17 | -30/59/46 | 405 | 1 arcsec | 26 |
| | 17 | 150/58/54 | -31/09/13 | 425 | 1 arcsec | 26 |
| Gaucher, C. | 1 | 291/42/00 | -32/18/00 | | 5 deg | 62 |
| Geenen, J. J. | 1 | 005/42/00 | +51/14/00 | 35 | 1 arcmin | 46 |
| | 2 | 005/41/30 | +51/15/00 | 35 | 1 arcmin | 46 |
| | 3 | 005/42/00 | +51/13/30 | 35 | 1 arcmin | 46 |
| Gelinas, M. A. | 1 | 286/33/00 | +45/30/00 | 26 | 1 arcmin | 21 |
| | 2 | 287/17/00 | +45/36/00 | 75 | 1 arcmin | 21 |
| Genebriera, J. | 1 | 354/11/00 | +41/23/00 | 50 | 1 arcmin | 14 |
| | 2 | 354/30/00 | +41/41/00 | 1060 | 1 arcmin | 14 |
| | 3 | 004/00/00 | +40/00/00 | | 1 deg | 14 |
| Gerasimov, A. | 1 | observing | site unknown | | | |
| Germann, R. | 1 | 008/55/57 | +47/16/29 | 770 | 0.1 arcsec | 18 |
| Ghione, G. | 1 | 012/35/00 | +42/36/00 | 676 | 1 arcmin | 7 |
| Giampaolo, G. | 1 | observing | site unknown | | | |
| Gianforte, J. S. | 1 | 289/08/05 | +43/16/54 | 82 | 1 arcsec | 16 |
| | 2 | 289/08/00 | +43/19/00 | 91 | 1 arcmin | 16 |
| | 3 | 289/08/30 | +43/19/00 | 61 | 1 arcmin | 16 |
| Gigli, P. | 1 | 010/50/00 | +44/03/35 | 780 | 1 arcmin | 7 |
| Gilchrist, D. K. | 1 | 279/49/00 | +40/42/20 | 421 | 1 arcmin | 16 |
| | 2 | 279/38/45 | +40/29/45 | 73 | 1 arcsec | 16 |
| | 3 | 279/40/00 | +40/29/30 | 143 | 1 arcsec | 16 |
| | 4 | 279/34/00 | +40/29/15 | 149 | 1 arcsec | 16 |
| Girardo, M. M. | 1 | 296/06/00 | -34/30/00 | 154 | 1 arcmin | 27 |
| Giraudi, J. D. | 1 | 301/35/58 | -34/36/30 | 40 | 1 arcsec | 27 |
| | 2 | 301/35/02 | -34/36/27 | 35 | 0.1 arcsec | 27 |
| | 3 | 301/00/00 | -34/30/00 | 0 | 3 deg | 27 |
| Giuntoli, M. | 1 | 010/47/11 | +43/51/39 | 21 | 1 arcsec | 7 |
| Glassett, W. | 1 | 243/38/42 | +33/54/00 | 322 | 1 arcmin | 16 |
| | 2 | 241/00/00 | +34/45/00 | 1570 | 1 deg | 16 |
| | 3 | 241/56/24 | +34/13/00 | 1742 | 1 arcmin | 16 |
| | 4 | 237/24/00 | +48/42/00 | | 1 arcmin | 16 |
| | 5 | 241/41/00 | +34/11/00 | | 10 arcmin | 16 |
| Glowinski, C. | 1 | 008/16/00 | +50/00/00 | 100 | 1 deg | 25 |
| Gojdic, S. | 1 | 021/54/40 | +48/56/17 | 160 | 0.1 arcsec | 35 |
| Goldfarb, M. | 1 | observing | site unknown | | | |
| Golubev, V. | 1 | observing | site unknown | | | |
| Gomez, A. | 1 | 357/04/00 | +40/45/00 | 1005 | 1 arcmin | 14 |
| | 2 | 355/52/15 | +40/17/12 | 575 | 1 arcsec | 14 |
| | 3 | 356/00/00 | +40/30/00 | | 2 deg | 14 |
| | 4 | 356/00/00 | +40/30/00 | | 2 deg | 14 |
| | 5 | 357/11/00 | +41/19/00 | | 0.5 deg | 14 |
| | 6 | 356/33/00 | +40/25/00 | | 0.5 deg | 14 |
| | 7 | 356/54/39 | +40/31/24 | 929 | 1 arcsec | 14 |
| | 8 | 355/45/00 | +40/26/00 | | 5 arcmin | 14 |
| Gomez, T. L. | 1 | 357/04/00 | +40/45/00 | 1005 | 1 arcmin | 14 |
| | 2 | 359/30/00 | +39/26/00 | | 1 deg | 14 |
| | 3 | 356/19/35 | +40/24/28 | 614 | 1 arcsec | 14 |
| | 4 | 356/07/00 | +40/22/00 | | 1 deg | 14 |
| | 5 | 355/45/00 | +40/26/00 | | 5 arcmin | 14 |
| Gonzalez, A. | 1 | 356/31/00 | +40/29/00 | | 1 deg | 14 |
| Gora, D. | 1 | 021/04/00 | +51/03/00 | 250 | 1 arcmin | 11 |
| Gorski, L. | 1 | 270/10/58 | +39/07/17 | 198 | 1 arcsec | 16 |
| | 2 | 270/20/48 | +39/49/26 | 174 | 1 arcsec | 16 |
| | 3 | 270/12/14 | +39/01/23 | 177 | 1 arcsec | 16 |
| | 4 | 270/17/47 | +39/05/41 | 207 | 1 arcsec | 16 |
| | 5 | 279/23/00 | +24/55/48 | 0 | 1 arcsec | 16 |
| | 6 | 270/13/53 | +39/03/27 | 192 | 1 arcsec | 16 |
| Gostev, A. | 1 | observing | site unknown | | | |
| Gozzoli, E. | 1 | 011/00/00 | +44/30/00 | 120 | 1 deg | 7 |
| Granslo, B. H. | 1 | 010/42/00 | +59/54/00 | 150 | 0.1 deg | 47 |
| | 2 | 010/48/00 | +60/12/00 | 580 | 0.1 deg | 47 |
| | 3 | 011/12/00 | +64/06/00 | 75 | 0.1 deg | 47 |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|----------------|------|-----------|--------------|----------|------------|---------|
| | 4 | 011/06/00 | +64/06/00 | | 0.1 deg | 47 |
| | 5 | 343/30/12 | +28/17/30 | 238 | 0.1 arcmin | 74 |
| | 6 | 342/07/12 | +28/45/30 | 2327 | 0.1 arcmin | 74 |
| Graves, D. | 1 | 285/09/00 | +39/59/00 | 18 | 1 arcmin | 16 |
| | 2 | 285/22/00 | +39/39/00 | 18 | 1 arcmin | 16 |
| Green, D.W.E. | 1 | observing | site unknown | | | |
| Grieser, D. | 1 | 276/57/01 | +40/02/49 | 258 | 1 arcsec | 16 |
| | 2 | 276/55/57 | +40/06/25 | 274 | 1 arcsec | 16 |
| Grogel, O. | 1 | 012/36/00 | +48/54/00 | 330 | 0.1 deg | 25 |
| Gronck, J.D. | 1 | 248/06/04 | +33/28/41 | 351 | 1 arcsec | 16 |
| | 2 | 248/37/15 | +33/17/44 | 561 | 1 arcsec | 16 |
| Gruengard, E. | 1 | 034/26/36 | +30/23/24 | 837 | 1 arcsec | 40 |
| Guarro, J. | 1 | 001/45/18 | +41/31/24 | 324 | 1 arcsec | 14 |
| Gubo, H. | 1 | 010/44/00 | +48/02/00 | 620 | 1 arcmin | 25 |
| | 2 | 010/44/00 | +47/44/00 | 1020 | 1 arcmin | 25 |
| Guerrini, F. | 1 | 012/12/00 | +44/25/07 | | 15 arcsec | 7 |
| Guhl, K. | 1 | 013/28/40 | +52/29/12 | 40 | 1 arcsec | 23 |
| Guryanov, S. | 1 | observing | site unknown | | | |
| Guthier, O. | 1 | 008/03/24 | +49/57/48 | 250 | 0.1 arcmin | 25 |
| | 2 | observing | site unknown | | | |
| | 3 | observing | site unknown | | | |
| | 4 | 016/00/00 | -22/00/00 | | 13 deg | 65 |
| Haagh, N. | 1 | 149/12/42 | -31/16/48 | 450 | 0.5 arcmin | 26 |
| Hajek, P. | 1 | 017/01/34 | +49/17/06 | 254 | 1 arcsec | 35 |
| Hale, A. | 1 | 242/11/48 | +34/22/18 | 2408 | 0.1 arcmin | 16 |
| | 2 | 242/00/30 | +34/16/54 | 1525 | 0.1 arcmin | 16 |
| | 3 | 241/16/48 | +34/34/36 | 915 | 0.1 arcmin | 16 |
| | 4 | 241/37/06 | +34/35/06 | 760 | 0.1 arcmin | 16 |
| | 5 | 240/58/49 | +34/48/03 | 1615 | 1 arcsec | 16 |
| | 6 | 240/57/02 | +34/45/20 | 1550 | 1 arcsec | 16 |
| | 7 | 240/52/49 | +34/42/29 | 1660 | 1 arcsec | 16 |
| | 8 | 240/52/42 | +34/42/12 | 1750 | 1 arcsec | 16 |
| | 9 | 242/18/30 | +34/22/48 | 2290 | 0.1 arcmin | 16 |
| | 10 | 243/19/54 | +32/49/54 | 760 | 0.1 arcmin | 16 |
| | 11 | 243/30/24 | +32/49/18 | 1370 | 0.1 arcmin | 16 |
| | 12 | 243/33/18 | +32/50/48 | 1675 | 0.1 arcmin | 16 |
| | 13 | 243/35/00 | +32/52/12 | 1830 | 0.1 arcmin | 16 |
| | 14 | 243/27/54 | +33/43/12 | 1620 | 0.1 arcmin | 16 |
| | 15 | 243/08/48 | +33/18/30 | 1580 | 0.1 arcmin | 16 |
| | 16 | 243/15/42 | +34/13/06 | 2225 | 0.1 arcmin | 16 |
| | 17 | 240/54/00 | +34/44/30 | 1585 | 0.1 arcmin | 16 |
| | 18 | 240/54/18 | +34/44/54 | 1585 | 0.1 arcmin | 16 |
| | 19 | 241/11/12 | +34/42/06 | 915 | 0.1 arcmin | 16 |
| | 20 | 241/24/12 | +34/30/54 | 550 | 0.1 arcmin | 16 |
| | 21 | 241/43/24 | +34/15/06 | 460 | 0.1 arcmin | 16 |
| | 22 | 241/58/12 | +34/30/18 | 915 | 0.1 arcmin | 16 |
| | 23 | 241/53/48 | +34/15/18 | 1280 | 0.1 arcmin | 16 |
| | 24 | 241/56/48 | +34/16/00 | 1370 | 0.1 arcmin | 16 |
| | 25 | 242/00/12 | +34/19/48 | 1825 | 0.1 arcmin | 16 |
| | 26 | 242/04/12 | +34/20/36 | 2135 | 0.1 arcmin | 16 |
| | 27 | 240/23/24 | +37/44/48 | 1209 | 0.1 arcmin | 16 |
| | 28 | 247/52/54 | +36/04/12 | 2093 | 0.1 arcmin | 16 |
| | 29 | 249/21/36 | +32/15/18 | 800 | 0.1 arcmin | 16 |
| | 30 | 254/03/18 | +32/52/18 | 1312 | 0.1 arcmin | 16 |
| | 31 | 283/15/42 | +32/22/00 | 1220 | 0.1 arcmin | 16 |
| | 32 | 253/17/30 | +32/17/06 | 1220 | 0.1 arcmin | 16 |
| | 33 | 251/48/42 | +33/02/12 | 1860 | 0.1 arcmin | 16 |
| | 34 | 151/13/18 | -33/59/12 | 45 | 0.1 arcmin | 26 |
| | 35 | 148/42/36 | -32/15/24 | 500 | 0.1 arcmin | 26 |
| | 36 | 141/26/42 | -31/57/48 | 300 | 0.1 arcmin | 26 |
| | 37 | 139/20/48 | -35/04/48 | 300 | 0.1 arcmin | 26 |
| | 38 | 146/54/30 | -36/42/00 | 800 | 0.1 arcmin | 26 |
| | 39 | 176/14/24 | -38/09/36 | 300 | 0.1 arcmin | 48 |
| | 40 | 253/10/18 | +32/21/00 | 1190 | 0.1 arcmin | 16 |
| | 41 | 252/50/06 | +32/29/30 | 2019 | 0.1 arcmin | 16 |
| Hall, B. | 1 | 243/16/46 | +33/29/02 | 1329 | 1 arcsec | 16 |
| Hannon, J. | 1 | 286/55/00 | +41/40/00 | 107 | 1 arcmin | 16 |
| Harrington, P. | 1 | 286/46/10 | +40/51/54 | 43 | 5 arcsec | 16 |
| | 2 | 279/04/00 | +25/08/10 | 0 | 5 arcsec | 16 |
| | 3 | 287/25/00 | +43/20/00 | | 1 deg | 16 |
| Harris, L.A. | 1 | 280/31/27 | +09/01/30 | 176 | 1 arcsec | 80 |
| | 2 | 280/30/00 | +08/59/00 | 10 | 1 arcmin | 80 |
| Hasegawa, T. | 1 | 140/06/00 | +35/30/36 | 25 | 0.01 deg | 8 |
| | 2 | 140/06/36 | +35/31/12 | 20 | 0.01 deg | 8 |
| | 3 | 140/12/00 | +35/09/36 | 75 | 0.01 deg | 8 |
| | 4 | 139/50/24 | +34/54/00 | 0 | 0.01 deg | 8 |
| Hasubick, W. | 1 | 010/44/00 | +48/02/00 | 620 | 1 arcmin | 25 |
| | 2 | 010/44/00 | +47/44/00 | 1020 | 1 arcmin | 25 |
| | 3 | 343/25/00 | +28/15/00 | 2300 | 1 arcmin | 74 |
| Hathaway, W. | 1 | 283/12/00 | +38/59/00 | 43 | 1 arcmin | 16 |
| | 2 | 283/11/00 | +39/01/00 | 50 | 1 arcmin | 16 |
| | 3 | 277/40/00 | +34/40/00 | 2037 | 10 arcmin | 16 |
| Haver, R. | 1 | 012/26/44 | +41/55/48 | 125 | 0.01 deg | 7 |
| | 2 | 012/03/36 | +42/16/48 | 340 | 0.01 deg | 7 |
| | 3 | 012/04/12 | +42/04/12 | 300 | 0.01 deg | 7 |
| | 4 | 013/12/36 | +41/57/36 | 1845 | 0.01 deg | 7 |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|----------------|------|-----------|--------------|----------|------------|---------|
| | 5 | 012/01/12 | +42/06/00 | 425 | 0.01 deg | 7 |
| | 6 | 011/10/12 | +42/23/24 | 600 | 0.01 deg | 7 |
| | 7 | 073/28/48 | +03/39/00 | 1 | 0.01 deg | 78 |
| Havrilak, M. | 1 | 021/54/40 | +48/56/17 | 160 | 0.1 arcsec | 35 |
| Hayashi, A. | 1 | observing | site unknown | | | |
| Hayashi, H. | 1 | 139/37/00 | +35/18/00 | 20 | 1 arcmin | 8 |
| | 2 | 138/20/00 | +35/53/00 | 1110 | 1 arcmin | 8 |
| | 3 | 139/59/00 | +35/02/00 | 5 | 1 arcmin | 8 |
| | 4 | 138/54/00 | +34/35/00 | 3 | deg | 8 |
| | 5 | 138/38/00 | +35/48/00 | 1650 | 1 arcmin | 8 |
| Hays Jr., R.H. | 1 | 272/32/00 | +41/09/00 | 213 | 1 arcmin | 16 |
| | 2 | 272/12/00 | +41/41/00 | 186 | 1 arcmin | 16 |
| | 3 | 256/38/00 | +29/28/00 | 914 | 1 arcmin | 16 |
| | 4 | 256/28/00 | +29/19/00 | 914 | 1 arcmin | 16 |
| | 5 | 256/13/00 | +30/56/00 | 1067 | 1 arcmin | 16 |
| | 6 | 257/11/00 | +31/38/00 | 823 | 1 arcmin | 16 |
| | 7 | 260/48/00 | +33/34/00 | 427 | 1 arcmin | 16 |
| Healy, D. | 1 | 250/03/11 | +31/21/11 | 1407 | 4 arcsec | 16 |
| Henshaw, C. | 1 | 029/56/00 | -18/20/00 | 1100 | 1 deg | 59 |
| | 2 | 031/31/00 | -18/11/00 | | 1 deg | 59 |
| | 3 | 043/12/00 | -18/05/00 | 10058 | 10 deg | 98 |
| | 4 | 057/36/00 | -20/18/00 | | 2 deg | 45 |
| Hernschier, W. | 1 | 008/27/11 | +49/01/31 | 119 | 0.1 arcsec | 25 |
| | 2 | 343/30/00 | +28/30/00 | | 1 deg | 74 |
| Higuera, A. | 1 | 286/00/00 | +04/35/00 | | 15 deg | 33 |
| Hilburn, A.P. | 1 | 282/00/00 | +34/00/00 | 12 | 2 deg | 16 |
| Hiraga, M. | 1 | 131/10/00 | +34/08/00 | 60 | 1 arcmin | 8 |
| | 2 | 131/05/00 | +34/02/00 | 0 | 1 arcmin | 8 |
| | 3 | 131/00/00 | +34/00/00 | 20 | 1 arcmin | 8 |
| Hirth, G. | 1 | 023/00/00 | +40/37/00 | 15 | 5 arcmin | 25 |
| | 2 | 023/36/00 | +41/06/00 | 100 | 5 arcmin | 25 |
| | 3 | 021/48/00 | +40/18/00 | 1100 | 5 arcmin | 25 |
| Hodonsky, K. | 1 | 272/04/00 | +41/48/00 | | 1 deg | 16 |
| | 2 | 270/53/00 | +41/20/00 | | 1 deg | 16 |
| | 3 | 269/39/00 | +40/56/00 | | 1 deg | 16 |
| | 4 | 266/43/00 | +36/36/00 | | 1 deg | 16 |
| | 5 | 267/17/00 | +37/40/00 | | 1 deg | 16 |
| | 6 | 266/31/00 | +36/37/00 | | 1 deg | 16 |
| Honko, M. | 1 | 020/59/08 | +52/12/56 | 115 | 1 arcsec | 11 |
| | 2 | 023/09/36 | +53/08/48 | 150 | 1 arcsec | 11 |
| | 3 | 019/42/30 | +54/22/07 | 41 | 1 arcsec | 11 |
| House, R.R. | 1 | 280/47/39 | +42/53/27 | 177 | 1 arcsec | 21 |
| | 2 | 279/30/12 | +43/16/59 | 320 | 1 arcsec | 21 |
| | 3 | 279/33/36 | +43/27/52 | 329 | 1 arcsec | 21 |
| | 4 | 279/28/52 | +43/28/28 | 335 | 1 arcsec | 21 |
| Hroch, F. | 1 | 016/39/00 | +49/21/00 | 365 | 1 arcmin | 35 |
| Hudak, D.M. | 1 | 279/16/52 | +41/03/48 | 325 | 1 arcsec | 16 |
| | 2 | 279/21/52 | +41/06/41 | 301 | 1 arcsec | 16 |
| | 3 | 279/06/26 | +41/00/28 | 341 | 1 arcsec | 16 |
| | 4 | 278/39/31 | +41/08/28 | 346 | 1 arcsec | 16 |
| Humenansky, J. | 1 | 021/14/46 | +48/59/47 | 268 | 1 arcsec | 35 |
| Hurst, G.M. | 1 | 358/00/00 | +51/30/00 | 80 | 1 deg | 15 |
| | 2 | 359/04/00 | +52/14/00 | | 2 deg | 15 |
| Ichikawa, K. | 1 | 139/22/48 | +36/16/48 | 38 | 0.01 deg | 8 |
| | 2 | 139/19/12 | +36/15/00 | 35 | 0.01 deg | 8 |
| | 3 | 139/12/00 | +36/30/00 | 1750 | 0.01 deg | 8 |
| | 4 | 139/16/48 | +36/24/00 | 42 | 0.01 deg | 8 |
| | 5 | 138/12/00 | +36/42/00 | | 5 deg | 8 |
| | 6 | observing | site unknown | | | |
| | 7 | observing | site unknown | | | |
| | 8 | observing | site unknown | | | |
| | 9 | 139/00/00 | +36/00/00 | | 5 deg | 8 |
| | 10 | observing | site unknown | | | |
| Ino, Y. | 1 | 134/43/48 | +34/55/48 | 78 | 0.01 deg | 8 |
| | 2 | 134/43/48 | +34/45/36 | 69 | 0.01 deg | 8 |
| Isenhardt, C. | 1 | 130/54/00 | -25/30/00 | 549 | 10 arcmin | 26 |
| Ivanov, V. | 1 | observing | site unknown | | | |
| Iwaki, Y. | 1 | 135/34/36 | +34/18/36 | 100 | 1 arcsec | 8 |
| Izquierdo, J. | 1 | 357/04/00 | +40/45/00 | 1005 | 1 arcmin | 14 |
| Jacobs, T. | 1 | 270/32/36 | +43/02/24 | 305 | 0.1 arcmin | 16 |
| | 2 | 270/34/24 | +43/00/30 | 296 | 0.1 arcmin | 16 |
| | 3 | 270/33/48 | +42/47/30 | 308 | 0.1 arcmin | 16 |
| Jacobson, E. | 1 | 264/18/00 | +46/00/00 | 305 | 1 deg | 16 |
| | 2 | 261/45/00 | +35/13/00 | 305 | 1 deg | 16 |
| Jager, M. | 1 | 016/36/12 | +48/03/00 | 160 | 0.1 arcmin | 28 |
| | 2 | 013/54/00 | +48/07/36 | 360 | 0.1 arcmin | 28 |
| | 3 | 015/43/30 | +47/40/24 | 1070 | 0.1 arcmin | 28 |
| | 4 | 342/58/00 | +28/41/00 | | 1 deg | 74 |
| Jahn, J. | 1 | 010/41/46 | +53/37/06 | 60 | 2 arcsec | 25 |
| | 2 | 010/00/20 | +53/40/44 | 40 | 2 arcsec | 25 |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|------------------|------|-----------|--------------|----------|------------|---------|
| Janecek, V. | 1 | 015/55/00 | +49/33/00 | 590 | 1 arcmin | 35 |
| Jannink, D. W. | 1 | 005/10/16 | +52/06/32 | 22 | 3.6 arcsec | 46 |
| | 2 | 006/55/08 | +52/14/28 | 70 | 3.6 arcsec | 46 |
| | 3 | 010/24/00 | +36/24/00 | | 0.1 deg | 84 |
| | 4 | 010/48/00 | +33/36/00 | 10 | 0.1 deg | 84 |
| Jeffrey, J. | 1 | 000/00/00 | +00/00/00 | | 99 deg | 99 |
| | 2 | 238/45/00 | +44/20/00 | | 1 deg | 16 |
| | 3 | 248/00/00 | +34/00/00 | | 5 deg | 16 |
| Johnstone, G. F. | 1 | 358/29/00 | +52/19/00 | 83 | 1 arcmin | 15 |
| Jones, A. | 1 | 173/14/04 | -41/19/07 | 15 | 1 arcsec | 48 |
| Jones, B. W. | 1 | 023/25/00 | -20/00/00 | 945 | 5 arcmin | 64 |
| | 2 | 024/43/00 | -25/50/00 | 1100 | 5 arcmin | 64 |
| Jordan, J. | 1 | 271/41/35 | +36/09/45 | 84 | 1 arcsec | 16 |
| Kabalin, V. | 1 | observing | site unknown | | | |
| Kaila, K. | 1 | 025/25/00 | +65/04/12 | 10 | 0.1 arcmin | 19 |
| | 2 | 026/34/18 | +64/38/36 | 100 | 0.1 arcmin | 19 |
| | 3 | 343/00/00 | +28/00/00 | 2200 | 1 deg | 74 |
| Kalauch, K.-D. | 1 | 013/53/48 | +51/33/41 | 130 | 0.1 arcsec | 23 |
| | 2 | 013/54/00 | +51/32/00 | 150 | 1 arcmin | 23 |
| Kamenickj', M. | 1 | 021/07/18 | +48/46/00 | 470 | 0.1 arcsec | 35 |
| Kammerer, A. | 1 | 008/21/12 | +49/00/06 | 115 | 0.1 arcmin | 25 |
| | 2 | 008/29/00 | +48/51/24 | 400 | 0.1 arcmin | 25 |
| | 3 | 008/29/24 | +48/47/54 | 690 | 0.1 arcmin | 25 |
| | 4 | 008/20/00 | +48/08/00 | 900 | 1 arcmin | 25 |
| | 5 | 359/54/00 | +38/30/00 | | 0.5 deg | 14 |
| Kamnev, Y. | 1 | observing | site unknown | | | |
| Kanai, K. | 1 | 139/16/00 | +36/15/00 | 40 | 1 arcmin | 8 |
| | 2 | 139/15/00 | +36/15/00 | 40 | 1 arcmin | 8 |
| Kasirin, I. | 1 | observing | site unknown | | | |
| Kato, T. | 1 | 135/47/00 | +35/02/00 | 60 | 1 arcmin | 8 |
| | 2 | 135/35/00 | +34/43/00 | 6 | 1 arcmin | 8 |
| Kaufmann, R. | 1 | 285/00/00 | +40/00/00 | | 2 deg | 16 |
| | 2 | 284/15/00 | +35/40/00 | | 5 deg | 16 |
| Kauschke, A. | 1 | 013/40/00 | +53/15/00 | 50 | 1 arcmin | 23 |
| Keen, R. | 1 | 254/37/00 | +39/53/00 | 2730 | 1 arcmin | 16 |
| | 2 | 257/00/00 | +37/00/00 | 1517 | 5 deg | 16 |
| | 3 | 256/02/00 | +36/15/00 | | 5 deg | 16 |
| | 4 | 210/00/00 | +23/00/00 | | 30 deg | 98 |
| | 5 | 177/00/00 | -17/00/00 | | 5 deg | 81 |
| | 6 | 177/15/00 | -17/50/00 | | 5 deg | 81 |
| | 7 | 172/32/00 | -43/30/00 | | 5 deg | 48 |
| | 8 | 170/30/00 | -44/02/00 | | 5 deg | 48 |
| | 9 | 169/58/00 | -44/23/00 | | 5 deg | 48 |
| | 10 | 167/45/00 | -45/25/00 | | 5 deg | 48 |
| | 11 | 170/12/00 | -43/25/00 | | 5 deg | 48 |
| | 12 | 174/40/00 | -36/55/00 | | 5 deg | 48 |
| | 13 | 210/15/00 | -17/30/00 | | 5 deg | 61 |
| | 14 | 202/30/00 | -15/00/00 | | 10 deg | 61 |
| | 15 | 210/25/00 | -17/30/00 | | 5 deg | 61 |
| Keijmel, P. C. | 1 | 003/34/00 | +51/28/00 | 1 | 1 arcmin | 46 |
| | 2 | 003/38/00 | +51/32/00 | 1 | 1 arcmin | 46 |
| Kellner, A. | 1 | observing | site unknown | | | |
| Kemble, L. J. | 1 | 245/32/31 | +51/12/14 | 1228 | 0.1 arcsec | 21 |
| | 2 | 245/33/00 | +51/03/00 | | 1 arcmin | 21 |
| | 3 | 246/09/05 | +49/12/00 | | 1 arcmin | 21 |
| Kerber, F. | 1 | 011/36/00 | +48/06/00 | 530 | 0.1 deg | 25 |
| | 2 | 316/30/00 | -20/30/00 | 700 | 1 deg | 2 |
| | 3 | 313/00/00 | -23/30/00 | 1100 | 1 deg | 2 |
| Keszthelyi, S. | 1 | 018/18/38 | +46/06/49 | 202 | 1 arcsec | 38 |
| | 2 | 018/18/37 | +46/06/47 | 209 | 1 arcsec | 38 |
| | 3 | 018/13/47 | +46/05/02 | 290 | 1 arcsec | 38 |
| | 4 | 032/50/00 | +25/45/00 | 100 | 1 arcmin | 66 |
| | 5 | 022/28/00 | +40/05/00 | | 1 arcmin | 36 |
| | 6 | 022/25/00 | +38/45/00 | | 1 arcmin | 36 |
| | 7 | 024/00/00 | +38/08/00 | | 1 arcmin | 36 |
| | 8 | 021/40/00 | +39/40/00 | | 1 arcmin | 36 |
| Kieltyka, G. | 1 | 022/32/35 | +51/14/50 | 240 | 1 arcsec | 11 |
| | 2 | 021/44/58 | +49/41/18 | 280 | 1 arcsec | 11 |
| | 3 | 022/56/12 | +51/22/16 | 171 | 1 arcsec | 11 |
| Kiselev, N. | 1 | observing | site unknown | | | |
| Kishi, A. | 1 | 139/48/00 | +35/44/00 | 40 | 0.1 deg | 8 |
| | 2 | observing | site unknown | | | |
| Kitamura, K. | 1 | 136/45/00 | +35/17/00 | 50 | 1 arcmin | 8 |
| | 2 | 137/00/00 | +35/15/00 | | 1 deg | 8 |
| Kliche, J. | 1 | 014/02/00 | +51/48/09 | 65 | 1 arcsec | 23 |
| Knain, E. | 1 | 010/48/00 | +63/24/50 | 100 | 1 arcmin | 47 |
| | 2 | 010/00/00 | +63/00/00 | | 5 deg | 47 |
| Knight, S. | 1 | 289/18/27 | +44/12/10 | 191 | 1 arcsec | 16 |
| | 2 | 289/18/41 | +44/12/10 | 179 | 1 arcsec | 16 |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|------------------|------|------------------------|-----------|----------|------------|---------|
| | 3 | 289/18/50 | +44/12/18 | 177 | 1 arcsec | 16 |
| | 4 | 289/19/07 | +44/12/08 | 164 | 1 arcsec | 16 |
| Knisely, D. | 1 | 263/15/00 | +40/17/00 | 402 | 0.01 deg | 16 |
| | 2 | 263/17/00 | +40/04/00 | 396 | 0.01 deg | 16 |
| | 3 | 263/25/00 | +40/14/00 | 427 | 0.01 deg | 16 |
| | 4 | 263/31/00 | +40/14/00 | 463 | 0.01 deg | 16 |
| Knyazyuk, N. | 1 | observing site unknown | | | | |
| Kobayashi, J. | 1 | 130/45/00 | +32/40/42 | 65 | 0.01 deg | 8 |
| | 2 | 145/45/00 | +16/30/00 | | 10 deg | 82 |
| Koch, B. | 1 | 356/39/00 | +36/57/00 | 1800 | 1 arcmin | 14 |
| | 2 | 006/20/00 | +50/40/00 | 450 | 1 arcmin | 25 |
| | 3 | 012/00/00 | -23/30/00 | 1700 | 0.1 deg | 65 |
| | 4 | 006/57/40 | +51/09/48 | 60 | 1 arcsec | 25 |
| Koch, B. O. | 1 | 010/44/00 | +48/02/00 | 620 | 1 arcmin | 25 |
| | 2 | 010/44/00 | +47/44/00 | 1020 | 1 arcmin | 25 |
| Koch, V. | 1 | 010/44/00 | +48/02/00 | 620 | 1 arcmin | 25 |
| | 2 | 010/44/00 | +47/44/00 | 1020 | 1 arcmin | 25 |
| Kohler, N. | 1 | 011/36/00 | +50/54/00 | 145 | 0.1 deg | 23 |
| | 2 | 011/36/00 | +50/54/00 | 349 | 0.1 deg | 23 |
| | 3 | 011/36/00 | +50/48/00 | 200 | 0.1 deg | 23 |
| Kojima, T. | 1 | 139/29/00 | +36/11/00 | 20 | 1 arcmin | 8 |
| | 2 | 145/46/00 | +15/10/00 | 50 | 1 arcmin | 82 |
| Kolchanov, V. | 1 | observing site unknown | | | | |
| Kolomeyets, S. | 1 | observing site unknown | | | | |
| Konstantinov, S. | 1 | observing site unknown | | | | |
| Kopp, M. | 1 | 007/02/15 | +51/20/50 | 228 | 1 arcsec | 25 |
| | 2 | 008/01/00 | +51/01/00 | 450 | 1 arcsec | 25 |
| | 3 | 006/58/20 | +51/19/40 | 145 | 1 arcsec | 25 |
| | 4 | 006/57/10 | +51/18/55 | 120 | 1 arcsec | 25 |
| | 5 | 007/08/05 | +50/44/52 | 46 | 1 arcsec | 25 |
| Kopplin, J. | 1 | 012/28/00 | +50/57/00 | 220 | 1 arcmin | 23 |
| Korneev, V. | 1 | observing site unknown | | | | |
| Korth, S. | 1 | 006/50/54 | +51/11/36 | 45 | 0.1 arcmin | 25 |
| | 2 | 006/20/00 | +50/40/00 | 490 | 1 arcmin | 25 |
| Kosa-Kiss, A. | 1 | 021/39/00 | +46/48/00 | 90 | 1 arcmin | 60 |
| | 2 | 021/57/00 | +47/04/00 | 150 | 1 arcmin | 60 |
| Koschny, D. | 1 | 011/22/44 | +48/12/24 | 350 | 1 arcsec | 25 |
| | 2 | 011/14/34 | +48/14/10 | 554 | 1 arcsec | 25 |
| | 3 | 011/22/49 | +48/12/20 | 500 | 1 arcsec | 25 |
| | 4 | 011/22/19 | +48/08/05 | 510 | 1 arcsec | 25 |
| Kosinski, J. | 1 | 021/27/31 | +52/36/20 | 97 | 1 arcsec | 11 |
| | 2 | 020/59/08 | +52/12/56 | 115 | 1 arcsec | 11 |
| | 3 | 019/42/30 | +54/22/04 | 41 | 1 arcsec | 11 |
| Kourimsky, M. | 1 | 014/25/00 | +50/02/00 | 250 | 1 arcmin | 35 |
| | 2 | 015/36/00 | +50/42/00 | 725 | 1 arcmin | 35 |
| | 3 | 014/33/00 | +49/55/00 | 470 | 1 arcmin | 35 |
| Kral, M. | 1 | 015/55/00 | +49/33/00 | 590 | 1 arcmin | 35 |
| Kraling, W. | 1 | 008/49/53 | +50/47/18 | 220 | 1 arcsec | 25 |
| Krisciunas, K. | 1 | 204/32/36 | +19/45/18 | 2804 | 0.1 arcmin | 76 |
| | 2 | 204/31/42 | +19/46/36 | 4200 | 0.1 arcmin | 76 |
| | 3 | 205/01/42 | +19/34/00 | 91 | 0.1 arcmin | 76 |
| | 4 | 204/33/00 | +19/45/00 | 2134 | 10 arcmin | 76 |
| | 5 | 204/22/00 | +19/50/00 | 1524 | 1 arcmin | 76 |
| Kronk, G. | 1 | 270/04/35 | +38/41/42 | 171 | 1 arcsec | 16 |
| Kroon, B. | 1 | 005/57/06 | +52/15/06 | 16 | 0.1 arcmin | 46 |
| | 2 | 033/11/00 | +15/39/00 | | 1 arcmin | 63 |
| | 3 | 033/14/00 | +15/36/00 | | 1 arcmin | 63 |
| | 4 | 033/08/00 | +15/43/00 | | 1 arcmin | 63 |
| Krylov, A. | 1 | observing site unknown | | | | |
| Kucera, P. | 1 | 017/03/00 | +49/04/00 | 300 | 1 arcmin | 35 |
| | 2 | 015/53/00 | +49/13/00 | 430 | 1 arcmin | 35 |
| Kuipers, G. | 1 | 006/23/42 | +53/13/42 | 2 | 0.1 arcmin | 46 |
| | 2 | 006/23/00 | +53/12/42 | 2 | 1 arcmin | 46 |
| Kukkonen, I. T. | 1 | 024/48/24 | +60/22/36 | 30 | 0.1 arcmin | 19 |
| | 2 | 343/00/00 | +28/00/00 | 2200 | 1 deg | 74 |
| Kurtsov, S. | 1 | observing site unknown | | | | |
| Kusumi, E. | 1 | 138/46/35 | +37/33/52 | 36 | 1 arcsec | 8 |
| Lairet, R. | 1 | 293/04/12 | +10/30/23 | 1046 | 1 arcsec | 17 |
| | 2 | 289/08/00 | +08/47/26 | 3600 | 1 arcmin | 17 |
| | 3 | observing site unknown | | | | |
| | 4 | observing site unknown | | | | |
| | 5 | observing site unknown | | | | |
| Lamb, J. F. | 1 | 264/05/00 | +33/15/00 | 171 | 1 arcmin | 16 |
| Laroche, Y. | 1 | 285/42/38 | +45/33/12 | 60 | 1 arcsec | 21 |
| Laszlo, A. | 1 | 020/30/00 | +46/13/00 | 85 | 1 arcmin | 38 |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|-------------------|------|-----------|--------------|----------|-------------|---------|
| Lavarack, N. | 1 | 031/02/40 | -29/45/40 | 183 | 5 arcsec | 13 |
| | 2 | 031/06/20 | -29/37/30 | 119 | 5 arcsec | 13 |
| | 3 | 030/25/00 | -29/45/00 | 850 | 5 arcmin | 13 |
| | 4 | 030/40/50 | -28/44/30 | 823 | 5 arcsec | 13 |
| Lazerson, H. | 1 | 241/28/00 | +34/03/00 | 183 | 1 arcmin | 16 |
| | 2 | 240/50/00 | +34/50/00 | 1524 | 1 arcmin | 16 |
| Lehmann, T. | 1 | 011/00/00 | +51/00/00 | 220 | 0.1 deg | 23 |
| | 2 | 011/36/00 | +50/54/00 | 300 | 0.1 deg | 23 |
| Leitao Jr., C. | 1 | 313/14/23 | -23/18/45 | 780 | 1 arcsec | 2 |
| Levai, R. | 1 | 313/17/00 | -23/32/00 | 780 | 1 deg | 2 |
| | 2 | 313/28/00 | -23/10/00 | 800 | 1 deg | 2 |
| Levy, A. | 1 | 260/28/37 | +19/47/24 | 3070 | 1 arcsec | 9 |
| Levy, D. H. | 1 | 249/14/00 | +31/57/00 | 1036 | 1 arcmin | 16 |
| | 2 | 249/12/36 | +32/26/33 | 2783 | 2 arcmin | 16 |
| | 3 | 256/00/00 | +30/40/00 | | 10 arcmin | 16 |
| | 4 | 248/24/00 | +31/57/48 | 2120 | 0.1 arcmin | 16 |
| | 5 | 249/16/06 | +32/25/00 | 2510 | 0.1 arcmin | 16 |
| | 6 | 249/14/00 | +32/13/00 | | 5 arcmin | 16 |
| | 7 | 288/08/00 | -13/25/00 | | 10 arcmin | 67 |
| | 8 | 281/28/00 | -00/17/00 | | 1 deg | 85 |
| | 9 | 272/15/00 | -00/10/00 | | 3 deg | 73 |
| Lewis, D. E. | 1 | 273/24/46 | +38/53/22 | 206 | 1 arcsec | 16 |
| | 2 | 278/21/18 | +28/03/58 | 38 | 1 arcsec | 16 |
| Li Causi, G. | 1 | 012/27/00 | +41/55/00 | | 1 arcmin | 7 |
| | 2 | 012/07/12 | +42/25/12 | 750 | 0.01 deg | 7 |
| | 3 | 011/42/00 | +42/39/00 | 300 | 0.1 deg | 7 |
| | 4 | 012/52/51 | +41/27/52 | | 0.01 arcmin | 7 |
| Lieder, F. | 1 | 011/49/00 | +50/47/00 | 325 | 1 arcmin | 23 |
| Lifgren Jr., M. | 1 | 286/10/00 | +40/55/00 | 49 | 5 arcmin | 16 |
| | 2 | 286/24/00 | +41/00/00 | 229 | 5 arcmin | 16 |
| | 3 | 285/59/00 | +41/18/30 | 390 | 1 arcmin | 16 |
| Lilge, A. | 1 | 243/08/00 | +33/21/00 | | 1 deg | 16 |
| Linder, J. | 1 | 008/15/56 | +48/56/00 | 110 | 1 arcsec | 25 |
| | 2 | 008/18/16 | +48/56/01 | 119 | 1 arcsec | 25 |
| | 3 | 008/31/58 | +48/51/20 | 406 | 1 arcsec | 25 |
| | 4 | 008/30/59 | +48/47/37 | 720 | 1 arcsec | 25 |
| | 5 | 008/27/04 | +48/49/21 | 622 | 1 arcsec | 25 |
| | 6 | 008/24/55 | +48/58/40 | 116 | 1 arcsec | 25 |
| | 7 | 008/33/30 | +48/47/00 | 610 | 1 arcmin | 25 |
| | 8 | 343/20/00 | +28/20/00 | 2200 | 1 deg | 74 |
| | 9 | 343/20/00 | +28/20/00 | 10 | 1 deg | 74 |
| | 10 | 343/20/00 | +28/20/00 | 1400 | 1 deg | 74 |
| | 11 | observing | site unknown | 10 | | |
| Linger, S. | 1 | 359/05/00 | +51/45/00 | 30 | 10 arcmin | 15 |
| Linke, H. | 1 | 011/12/00 | +51/48/00 | 220 | 0.1 deg | 23 |
| Lipski, P. | 1 | 013/48/25 | +51/02/45 | 120 | 0.1 arcsec | 23 |
| Llabres, J. | 1 | 356/00/00 | +40/00/00 | | 5 deg | 14 |
| Lohvinenko, T. W. | 1 | 262/36/18 | +49/53/48 | 232 | 1 arcsec | 21 |
| | 2 | 262/52/45 | +49/38/43 | 234 | 1 arcsec | 21 |
| Lopez, E. V. A. | 1 | 299/26/00 | -33/52/00 | | 1 arcmin | 27 |
| Losada, R. | 1 | 344/21/00 | +27/39/00 | 500 | 1 deg | 74 |
| | 2 | 344/21/00 | +27/39/00 | 1900 | 1 deg | 74 |
| | 3 | observing | site unknown | | | |
| | 4 | 356/18/00 | +40/26/00 | | 0.5 deg | 14 |
| | 5 | 355/52/15 | +40/17/12 | 575 | 1 arcsec | 14 |
| Lovejoy, T. | 1 | 153/10/00 | -27/39/00 | 20 | 1 arcmin | 26 |
| | 2 | 150/10/00 | -30/15/00 | 1524 | 1 arcmin | 26 |
| | 3 | 152/59/00 | -27/44/00 | 46 | 1 arcmin | 26 |
| | 4 | 156/00/00 | -27/00/00 | 10668 | 10 deg | 98 |
| | 5 | 153/10/00 | -27/30/00 | | 1 deg | 26 |
| Lovera, A. | 1 | observing | site unknown | | | |
| Lozano, L. | 1 | 356/18/00 | +40/26/00 | | 5 deg | 14 |
| | 2 | 356/15/00 | +40/25/00 | 1000 | 5 deg | 14 |
| Lucius, D. | 1 | 010/50/00 | +52/25/00 | 70 | 1 arcmin | 25 |
| | 2 | 010/51/00 | +52/17/30 | 150 | 1 arcmin | 25 |
| | 3 | 009/50/00 | +51/37/00 | 160 | 1 arcmin | 25 |
| Ludewig O., F. L. | 1 | 291/29/00 | +10/10/00 | | 10 deg | 17 |
| | 2 | 290/41/00 | +10/04/00 | 566 | 2 deg | 17 |
| | 3 | observing | site unknown | | | |
| Luga, M. | 1 | 015/19/55 | +51/37/05 | 120 | 0.5 arcmin | 11 |
| Lund, L. | 1 | 275/52/02 | +35/59/07 | 338 | 0.5 arcsec | 16 |
| | 2 | 275/52/06 | +35/39/09 | 335 | 1 arcsec | 16 |
| Lunde, R. | 1 | 005/50/15 | +62/20/53 | 27 | 0.1 arcsec | 47 |
| | 2 | 005/55/10 | +62/19/45 | 500 | 0.1 arcsec | 47 |
| Lupianez, B. | 1 | 301/34/00 | -34/36/18 | 20 | 1 arcmin | 27 |
| | 2 | 301/31/12 | -34/40/00 | 25 | 1 arcmin | 27 |
| | 3 | 301/08/00 | -34/47/00 | 30 | 1 arcmin | 27 |
| Luthen, H. | 1 | 010/16/00 | +53/39/00 | 53 | 1 arcmin | 25 |
| | 2 | 343/30/00 | +28/18/00 | 1500 | 1 arcmin | 74 |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|-----------------|------|------------------------|-----------|----------|------------|---------|
| | 3 | 009/48/00 | +53/27/00 | 40 | 1 arcmin | 25 |
| Lyubavin, A. | 1 | observing site unknown | | | | |
| Maat, W. J. | 1 | 006/52/54 | +53/19/24 | 0 | 0.1 arcmin | 46 |
| | 2 | 006/50/48 | +53/21/36 | 0 | 0.1 arcmin | 46 |
| Mac Kenzie, G. | 1 | 299/50/00 | +46/07/59 | 8 | 3.6 arcsec | 21 |
| | 2 | 299/44/13 | +45/33/40 | 5 | 3.6 arcsec | 21 |
| Machholz, D. | 1 | 238/06/00 | +37/04/00 | 1024 | 0.1 deg | 16 |
| | 2 | 237/54/00 | +37/15/00 | 640 | 0.1 deg | 16 |
| | 3 | 238/06/00 | +37/18/00 | 21 | 0.1 deg | 16 |
| | 4 | 239/40/00 | +38/05/00 | | 0.5 deg | 16 |
| | 5 | 172/38/00 | -43/30/00 | | 2 deg | 48 |
| | 6 | 169/55/00 | -44/25/00 | | 1 deg | 48 |
| | 7 | 176/17/00 | -38/07/00 | | 1 deg | 48 |
| | 8 | 176/25/00 | -38/07/00 | | 1 deg | 48 |
| | 9 | 175/20/00 | -38/02/00 | | 1 deg | 48 |
| | 10 | 238/20/00 | +36/41/00 | | 1 deg | 16 |
| | 11 | 243/13/00 | +34/15/00 | 2286 | 2 arcmin | 16 |
| | 12 | 238/30/00 | +37/10/00 | | 0.5 deg | 16 |
| Maciejewski, W. | 1 | 017/02/00 | +51/05/35 | 130 | 1 arcmin | 11 |
| Madenberg, J. | 1 | 269/00/00 | -01/00/00 | | 3 deg | 73 |
| Maeda, S. | 1 | 133/51/24 | +33/30/12 | 10 | 0.1 arcmin | 8 |
| Makino, J. | 1 | 137/24/00 | +35/05/00 | 760 | 1 arcmin | 8 |
| | 2 | 137/11/00 | +35/13/00 | 350 | 1 arcmin | 8 |
| | 3 | 136/58/00 | +35/10/00 | 30 | 1 arcmin | 8 |
| | 4 | 136/58/00 | +34/43/00 | 20 | 1 arcmin | 8 |
| | 5 | 137/37/00 | +34/47/00 | | 1 arcmin | 8 |
| Maksimov, S. | 1 | observing site unknown | | | | |
| Mamedov, V. | 1 | observing site unknown | | | | |
| Manulis, I. | 1 | 034/59/45 | +31/55/40 | 225 | 1 arcsec | 40 |
| | 2 | 034/27/36 | +30/23/24 | 837 | 1 arcsec | 40 |
| Mao, A. | 1 | 012/18/00 | +45/25/00 | | 2 deg | 7 |
| Marafie, A. H. | 1 | 047/57/00 | +28/33/00 | 145 | 1 arcmin | 42 |
| | 2 | 048/05/00 | +29/18/00 | 58 | 1 arcmin | 42 |
| Maraziti, A. | 1 | 017/00/00 | +38/54/00 | 0 | 0.1 deg | 7 |
| | 2 | 016/36/00 | +38/54/00 | 350 | 0.1 deg | 7 |
| | 3 | observing site unknown | | | | |
| | 4 | observing site unknown | | | | |
| Marekfa, G. | 1 | 007/00/00 | +49/00/00 | | 1 deg | 25 |
| Martin, D. | 1 | 358/43/00 | +54/35/00 | 15 | 1 arcmin | 15 |
| | 2 | 358/44/00 | +54/22/00 | 250 | 1 arcmin | 15 |
| | 3 | 359/03/00 | +54/25/00 | 429 | 1 arcmin | 15 |
| | 4 | 358/38/00 | +54/37/00 | 21 | 1 arcmin | 15 |
| | 5 | 149/15/03 | -33/25/05 | | 1 arcsec | 26 |
| | 6 | 149/40/06 | -31/20/05 | 1126 | 1 arcsec | 26 |
| | 7 | 150/75/00 | -33/35/02 | | 1 arcsec | 26 |
| Martinez, C. | 1 | 301/34/00 | -34/36/18 | 20 | 1 arcmin | 27 |
| | 2 | 301/35/00 | -34/36/00 | 20 | 1 arcmin | 27 |
| | 3 | 301/08/00 | -34/47/00 | 30 | 1 arcmin | 27 |
| Martinez, P. | 1 | 055/36/00 | -21/06/00 | 100 | 1 arcmin | 70 |
| | 2 | 055/18/00 | -21/02/00 | 500 | 1 arcmin | 70 |
| Martis, A. | 1 | observing site unknown | | | | |
| Marx, H. | 1 | 009/11/51 | +48/47/01 | 354 | 1 arcsec | 25 |
| | 2 | 009/05/00 | +48/48/00 | 300 | 1 arcmin | 25 |
| Matchett, V. | 1 | 152/59/06 | -27/30/47 | 10 | 3.6 arcsec | 26 |
| Maturkanic, M. | 1 | 021/54/40 | +48/56/17 | 160 | 0.1 arcsec | 35 |
| Maydik, A. | 1 | observing site unknown | | | | |
| Maylisov, P. | 1 | observing site unknown | | | | |
| McBain, J. | 1 | 028/39/34 | -20/05/09 | 1330 | 0.1 arcsec | 59 |
| McBride, P. | 1 | 266/36/46 | +36/19/43 | 378 | 0.1 arcsec | 16 |
| McNaught, R. H. | 1 | 149/06/00 | -31/28/00 | 1126 | 0.1 deg | 26 |
| Medway, K. | 1 | 358/36/00 | +50/56/21 | 50 | 2 arcmin | 15 |
| Melandri, F. | 1 | 011/56/00 | +44/33/00 | 6 | 1 arcmin | 7 |
| | 2 | 011/45/00 | +44/03/00 | 681 | 1 arcmin | 7 |
| | 3 | 011/15/00 | +44/28/00 | 246 | 1 arcmin | 7 |
| | 4 | 011/56/00 | +44/25/00 | 30 | 1 arcmin | 7 |
| | 5 | 012/02/00 | +44/32/00 | 5 | 1 arcmin | 7 |
| | 6 | 012/11/00 | +44/26/00 | 4 | 1 arcmin | 7 |
| | 7 | 011/09/00 | +44/16/00 | 250 | 1 arcmin | 7 |
| | 8 | 011/33/00 | +44/02/00 | 600 | 1 arcmin | 7 |
| | 9 | 011/47/00 | +44/03/00 | 767 | 1 arcmin | 7 |
| | 10 | 011/48/00 | +44/30/00 | 9 | 1 arcmin | 7 |
| | 11 | 011/51/00 | +44/25/00 | 13 | 1 arcmin | 7 |
| | 12 | 057/00/00 | -20/00/00 | | 1 deg | 45 |
| Mendez, J. | 1 | 359/19/00 | +37/37/00 | | 1 arcmin | 14 |
| | 2 | 356/46/00 | +40/05/00 | | 1 arcmin | 14 |
| | 3 | 359/16/00 | +37/42/00 | | 1 arcmin | 14 |
| | 4 | 356/21/00 | +40/18/00 | | 1 arcmin | 14 |
| Menichetti, R. | 1 | 012/34/37 | +43/20/00 | 580 | 1 arcmin | 7 |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|-----------------|------|------------------------|-----------|----------|-------------|---------|
| Meozzi, D. | 1 | 012/18/50 | +42/09/20 | 250 | 1 arcsec | 7 |
| | 2 | 013/35/30 | +42/07/34 | 1850 | 1 arcsec | 7 |
| | 3 | 013/34/00 | +42/09/30 | 1065 | 1 arcsec | 7 |
| | 4 | 013/12/25 | +41/57/20 | 1785 | 1 arcsec | 7 |
| | 5 | 012/27/10 | +41/55/20 | 20 | 1 arcsec | 7 |
| Merlin, J.-C. | 1 | 004/26/06 | +46/49/43 | 350 | 1 arcsec | 4 |
| | 2 | 004/23/40 | +46/49/20 | 455 | 1 arcsec | 4 |
| | 3 | 006/55/36 | +43/44/54 | 1270 | 0.1 arcmin | 4 |
| | 4 | 315/00/16 | -20/47/22 | 920 | 1 arcmin | 2 |
| Micek, I. | 1 | 017/21/00 | +48/40/00 | 200 | 1 arcmin | 35 |
| Mikuz, H. | 1 | 014/04/33 | +45/56/44 | 730 | 1 arcsec | 35 |
| Milani, G. | 1 | 011/50/00 | +45/25/00 | 30 | 5 arcmin | 7 |
| | 2 | 011/50/00 | +45/20/00 | 400 | 5 arcmin | 7 |
| | 3 | 011/48/00 | +45/50/00 | 600 | 5 arcmin | 7 |
| | 4 | 011/30/00 | +45/52/00 | 1300 | 5 arcmin | 7 |
| | 5 | 011/25/00 | +45/20/00 | 300 | 5 arcmin | 7 |
| Minton, R. B. | 1 | 255/03/36 | +39/35/24 | 1710 | 0.01 deg | 16 |
| | 2 | 255/04/00 | +39/27/00 | | 3 arcmin | 16 |
| | 3 | 210/30/00 | -17/30/00 | | 0.5 deg | 61 |
| Misuhin, A. | 1 | observing site unknown | | | | |
| Mitchell, R. C. | 1 | 239/16/36 | +46/57/06 | 1198 | 0.1 arcmin | 16 |
| Mitsuma, S. | 1 | 139/15/00 | +36/14/00 | 40 | 1 arcmin | 8 |
| | 2 | 139/06/36 | +36/08/00 | 380 | 0.1 arcmin | 8 |
| | 3 | 139/09/24 | +36/08/30 | 320 | 0.1 arcmin | 8 |
| Mobberley, M. | 1 | 000/47/06 | +52/10/20 | 85 | 1 arcsec | 15 |
| | 2 | 343/20/00 | +28/00/00 | | 1 arcmin | 74 |
| Moeller, M. | 1 | 010/43/46 | +53/51/38 | 22 | 1 arcsec | 25 |
| | 2 | 010/50/18 | +53/59/06 | 8 | 1 arcsec | 25 |
| | 3 | 010/45/42 | +54/01/45 | 3 | 1 arcsec | 25 |
| Molinari, L. | 1 | 008/45/00 | +46/00/00 | | 1 deg | 7 |
| Moller, D. | 1 | 013/20/00 | +52/31/00 | | 1 deg | 25 |
| Momose, M. | 1 | 139/33/00 | +35/36/00 | 50 | 1 arcmin | 8 |
| | 2 | 137/26/00 | +36/08/00 | 680 | 1 arcmin | 8 |
| | 3 | observing site unknown | | | | |
| Monopoli, M. O. | 1 | 301/34/00 | -34/36/18 | 20 | 1 arcmin | 27 |
| Moore, A. J. | 1 | 257/31/46 | +31/44/50 | 925 | 1 arcsec | 16 |
| | 2 | 257/14/30 | +32/02/40 | 995 | 1 arcsec | 16 |
| Moreno, G. | 1 | 301/57/00 | -34/50/00 | 20 | 1 arcmin | 27 |
| | 2 | 301/35/00 | -34/36/00 | 30 | 1 arcmin | 27 |
| Moriya, M. | 1 | 136/57/32 | +35/09/16 | 40 | 0.01 arcsec | 8 |
| | 2 | 139/22/00 | +35/41/31 | | 1 arcsec | 8 |
| Mormil, V. | 1 | observing site unknown | | | | |
| Morris, C. S. | 1 | 242/19/12 | +34/22/54 | 2287 | 1 arcsec | 16 |
| | 2 | 243/13/00 | +34/15/00 | 2286 | 2 arcmin | 16 |
| | 3 | 240/54/34 | +34/44/50 | 1631 | 1 arcsec | 16 |
| | 4 | 249/16/06 | +32/25/00 | 2545 | 1 arcsec | 16 |
| | 5 | 249/14/00 | +31/57/00 | 1036 | 1 arcmin | 16 |
| | 6 | 242/00/30 | +34/16/40 | 1524 | 1 arcsec | 16 |
| | 7 | 241/17/03 | +34/34/28 | 1006 | 1 arcsec | 16 |
| | 8 | 242/24/00 | +34/24/00 | 2408 | 1 arcmin | 16 |
| | 9 | 241/42/10 | +34/16/25 | 488 | 1 arcsec | 16 |
| | 10 | 241/45/00 | +34/17/24 | 524 | 1 arcmin | 16 |
| | 11 | 242/03/00 | +34/21/00 | 2134 | 1 arcmin | 16 |
| | 12 | 243/30/00 | +32/49/00 | 1372 | 1 arcmin | 16 |
| | 13 | 241/58/00 | +34/31/00 | 914 | 1 arcmin | 16 |
| | 14 | 241/48/00 | +34/18/00 | 1067 | 1 arcmin | 16 |
| | 15 | 241/54/00 | +34/27/00 | 1219 | 1 arcmin | 16 |
| | 16 | 241/11/30 | +34/43/30 | 899 | 2 arcmin | 16 |
| | 17 | 241/24/12 | +34/30/30 | 549 | 5 arcsec | 16 |
| | 18 | 241/27/00 | +34/22/00 | 396 | 1 arcmin | 16 |
| | 19 | 301/30/00 | -34/45/00 | 61 | 1 arcmin | 27 |
| | 20 | 305/02/50 | -34/57/45 | 9 | 1 arcsec | 89 |
| | 21 | 308/08/06 | -32/48/04 | 9 | 1 arcsec | 89 |
| | 22 | 312/36/13 | -27/56/30 | 9 | 1 arcsec | 89 |
| | 23 | 313/38/00 | -25/03/00 | 9 | 1 arcmin | 89 |
| | 24 | 316/45/00 | -23/00/00 | 30 | 1 arcmin | 2 |
| | 25 | 271/42/00 | +03/12/00 | 10668 | 1 arcmin | 98 |
| | 26 | 244/00/00 | +35/00/00 | 10363 | 1 deg | 98 |
| | 27 | 241/42/06 | +34/07/06 | 362 | 1 arcsec | 16 |
| | 28 | 198/00/00 | +15/00/00 | 10668 | 1 deg | 98 |
| | 29 | 151/30/00 | -33/21/00 | 30 | 1 arcmin | 26 |
| | 30 | 151/29/00 | -33/24/00 | 107 | 1 arcmin | 26 |
| | 31 | 149/04/12 | -31/16/48 | 1181 | 1 arcsec | 26 |
| | 32 | 150/45/00 | -34/00/00 | 152 | 1 arcmin | 26 |
| | 33 | 151/30/00 | -34/00/00 | 9 | 1 arcmin | 26 |
| | 34 | 134/00/00 | -23/42/00 | 457 | 1 deg | 26 |
| | 35 | 134/00/00 | -23/36/00 | 10058 | 1 deg | 98 |
| | 36 | 133/30/00 | -24/30/00 | 457 | 1 arcmin | 26 |
| | 37 | 130/54/00 | -25/30/00 | 549 | 1 arcmin | 26 |
| | 38 | 241/36/00 | +34/24/00 | 366 | 1 arcmin | 16 |
| | 39 | 240/56/24 | +34/48/00 | 2591 | 1 arcmin | 16 |
| Morrisby, A. | 1 | 028/37/00 | -20/09/00 | 1340 | 1 arcmin | 59 |
| Morrison, W. | 1 | 281/39/42 | +44/17/18 | 195 | 0.1 arcmin | 21 |
| | 2 | 281/33/48 | +44/13/54 | 240 | 0.1 arcmin | 21 |
| | 3 | 281/36/00 | +44/12/54 | 200 | 0.1 arcmin | 21 |
| | 4 | 281/38/34 | +44/17/53 | 240 | 1 arcsec | 21 |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|----------------|------|------------------------|-----------|----------|-------------|---------|
| Mosch, J. | 1 | 013/30/00 | +51/10/00 | 100 | 1 arcmin | 23 |
| | 2 | 013/45/00 | +50/45/00 | 750 | 1 arcmin | 23 |
| | 3 | 012/35/00 | +54/25/00 | 5 | 1 arcmin | 23 |
| | 4 | 013/02/00 | +50/55/00 | 280 | 1 arcmin | 23 |
| Moskal, W. | 1 | 021/46/09 | +49/41/41 | 260 | 1 arcsec | 11 |
| Muller, R. D. | 1 | 153/00/00 | -29/00/00 | | 2 deg | 26 |
| Muravyeva, Yu. | 1 | observing site unknown | | | | |
| Nagele, A. | 1 | 011/21/58 | +48/08/06 | 532 | 3.6 arcsec | 25 |
| | 2 | 011/21/58 | +47/39/22 | 615 | 3.6 arcsec | 25 |
| Nakamura, A. | 1 | 137/34/00 | +35/17/00 | 1130 | 1 arcmin | 8 |
| | 2 | 137/18/00 | +35/12/00 | 250 | 1 arcmin | 8 |
| | 3 | 137/35/00 | +34/48/00 | 40 | 1 arcmin | 8 |
| | 4 | 136/53/00 | +34/45/00 | 100 | 1 arcmin | 8 |
| | 5 | 137/36/00 | +35/11/00 | 1050 | 1 arcmin | 8 |
| | 6 | 137/23/00 | +35/05/00 | 620 | 1 arcmin | 8 |
| | 7 | 136/59/00 | +35/01/00 | 30 | 1 arcmin | 8 |
| | 8 | 137/51/00 | +36/40/00 | 720 | 1 arcmin | 8 |
| | 9 | 147/47/00 | +13/17/00 | 0 | 1 arcmin | 8 |
| | 10 | 140/08/00 | +36/12/00 | 360 | 1 arcmin | 8 |
| Nakamura, Y. | 1 | 136/33/00 | +34/46/00 | 3 | 1 arcmin | 8 |
| | 2 | 137/00/00 | +38/00/00 | | 15 deg | 8 |
| | 3 | 137/00/00 | +38/00/00 | | 15 deg | 8 |
| | 4 | 137/00/00 | +38/00/00 | | 15 deg | 8 |
| Nassr, J. L. | 1 | 120/34/00 | +16/24/39 | 1507 | 1 arcsec | 50 |
| | 2 | 120/36/34 | +16/24/36 | 1542 | 0.01 arcsec | 50 |
| Navalihin, M. | 1 | observing site unknown | | | | |
| Nesterov, Yu. | 1 | observing site unknown | | | | |
| Nieborek, T. | 1 | 021/28/00 | +52/36/00 | 90 | 1 arcmin | 11 |
| Niijima, T. | 1 | 139/20/12 | +36/14/43 | 34 | 0.1 arcsec | 8 |
| Nolle, M. | 1 | 010/09/00 | +48/26/00 | 560 | 1 arcmin | 25 |
| | 2 | 009/42/00 | +48/33/00 | 785 | 1 arcmin | 25 |
| Notley, M. | 1 | 202/30/00 | +21/10/00 | 70 | 0.01 deg | 76 |
| | 2 | 202/30/36 | +21/20/00 | 0 | 0.01 deg | 76 |
| Novak, G. T. | 1 | 286/50/00 | +44/20/00 | 194 | 5 arcmin | 16 |
| | 2 | 287/20/00 | +43/25/00 | 274 | 5 arcmin | 16 |
| | 3 | 287/10/00 | +43/30/00 | 366 | 5 arcmin | 16 |
| O'Meara, S. J. | 1 | 288/52/12 | +42/22/48 | 24 | 0.1 arcmin | 16 |
| | 2 | 204/32/00 | +19/49/36 | 4215 | 1 arcmin | 16 |
| | 3 | 288/26/30 | +42/30/18 | 185 | 0.1 arcmin | 16 |
| | 4 | 287/28/30 | +42/21/57 | 110 | 0.1 arcmin | 16 |
| | 5 | 288/39/00 | +42/28/00 | | 10 arcmin | 16 |
| | 6 | 172/38/00 | -43/30/00 | | 1 deg | 48 |
| | 7 | 130/54/00 | -25/30/00 | 549 | 0.5 deg | 26 |
| | 8 | 134/00/00 | -23/42/00 | 457 | 0.5 deg | 26 |
| Ocampo M., W. | 1 | 286/30/00 | +05/30/00 | 2000 | 0.5 deg | 33 |
| Oka, A. | 1 | 131/51/00 | +34/42/00 | 20 | 1 arcmin | 8 |
| | 2 | 131/51/00 | +34/32/00 | 250 | 1 arcmin | 8 |
| Okada, M. | 1 | 135/43/00 | +34/35/00 | 50 | 1 arcmin | 8 |
| | 2 | 135/57/00 | +34/37/00 | 458 | 1 arcmin | 8 |
| Okuda, M. | 1 | 136/00/09 | +34/34/02 | 400 | 0.36 arcsec | 8 |
| | 2 | 136/00/51 | +34/34/13 | 400 | 1 arcsec | 8 |
| | 3 | 135/38/18 | +34/52/23 | 50 | 1 deg | 8 |
| Okumura, S. | 1 | 137/52/50 | +35/30/38 | 428 | 1 arcsec | 8 |
| | 2 | 137/45/36 | +35/24/17 | 700 | 1 arcsec | 8 |
| Olesen, J. O. | 1 | 014/43/18 | +55/08/42 | 10 | 1 arcsec | 22 |
| Onofre D., D. | 1 | 308/49/53 | -29/55/42 | 3 | 0.01 arcsec | 2 |
| | 2 | 308/29/15 | -30/14/35 | 200 | 1 arcsec | 2 |
| Oskin, E. | 1 | observing site unknown | | | | |
| Pacholka, W. | 1 | 243/54/00 | +33/54/00 | 1067 | 0.1 deg | 16 |
| Padilla, S. | 1 | 241/56/42 | +34/13/00 | 1742 | 0.1 arcmin | 16 |
| Palko, Yu. | 1 | observing site unknown | | | | |
| Paolinetti, R. | 1 | 011/10/26 | +43/43/41 | 140 | 0.01 arcsec | 7 |
| Paradowski, M. | 1 | 022/32/35 | +51/14/50 | 240 | 1 arcsec | 11 |
| | 2 | 022/56/12 | +51/22/16 | 171 | 1 arcsec | 11 |
| Parisio, R. | 1 | 009/36/46 | +45/27/59 | 150 | 1 arcsec | 7 |
| | 2 | 009/29/16 | +45/44/15 | 1800 | 1 arcsec | 7 |
| | 3 | 009/00/00 | +45/00/00 | 1300 | 10 deg | 7 |
| | 4 | 009/00/00 | +45/00/00 | 500 | 10 deg | 7 |
| | 5 | observing site unknown | | | | |
| | 6 | 315/00/00 | +15/00/00 | | 30 deg | 98 |
| | 7 | 317/40/00 | -22/50/00 | | 5 deg | 2 |
| Parkinson, M. | 1 | 152/58/54 | -27/35/36 | 0 | 0.1 arcmin | 26 |
| | 2 | 152/54/42 | -27/35/12 | 0 | 0.1 arcmin | 26 |
| | 3 | 151/34/12 | -26/57/36 | 914 | 0.1 arcmin | 26 |
| | 4 | 152/25/18 | -28/04/30 | 750 | 0.1 arcmin | 26 |
| Paschenko, A. | 1 | observing site unknown | | | | |
| Pashko, D. | 1 | observing site unknown | | | | |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|-------------------|------|-----------|--------------|----------|------------|---------|
| Passalacqua, P. | 1 | 284/39/00 | +43/14/00 | 152 | 1 arcmin | 16 |
| Paul, E. | 1 | 013/36/00 | +53/04/00 | 20 | 0.1 deg | 23 |
| Pawlutschenko, B. | 1 | observing | site unknown | | | |
| Pearce, A. | 1 | 115/47/17 | -31/55/00 | 20 | 1 arcmin | 26 |
| | 2 | 115/45/42 | -31/55/08 | 35 | 1 arcsec | 26 |
| | 3 | 116/09/47 | -31/57/30 | 120 | 1 arcsec | 26 |
| | 4 | 116/11/19 | -31/48/17 | 290 | 1 arcsec | 26 |
| Pedersen, V. T. | 1 | 344/00/00 | +29/00/00 | | 3 deg | 74 |
| Pedraz, S. | 1 | 355/52/00 | +40/38/00 | | 0.5 deg | 14 |
| | 2 | 355/52/15 | +40/17/12 | 575 | 1 arcsec | 14 |
| | 3 | 357/04/00 | +40/45/00 | 1005 | 1 arcmin | 14 |
| Pena, E. D. | 1 | 286/10/00 | +05/07/00 | 3200 | 1 arcmin | 33 |
| Pennelli, G. | 1 | 010/30/00 | +43/09/00 | 20 | 30 arcmin | 7 |
| | 2 | 010/30/00 | +43/09/00 | 200 | 30 arcmin | 7 |
| Pereira, A. | 1 | 350/45/51 | +38/43/37 | 105 | 1 arcsec | 51 |
| | 2 | 350/46/08 | +38/42/00 | 29 | 1 arcsec | 51 |
| | 3 | 350/31/26 | +38/46/32 | 235 | 0.1 arcsec | 51 |
| Persell, D. | 1 | 241/23/37 | +34/15/33 | 293 | 1 arcsec | 16 |
| Pesci, S. | 1 | 009/40/00 | +45/30/00 | | 0.5 deg | 7 |
| | 2 | 006/50/00 | +45/02/00 | 1800 | 1 arcmin | 7 |
| Petrov, P. | 1 | observing | site unknown | | | |
| Pfitzner, E. | 1 | 012/21/00 | +50/44/00 | 330 | 1 arcmin | 23 |
| Phillips, J. | 1 | 281/00/00 | +33/00/00 | 2 | 1 deg | 16 |
| Piccinini, M. | 1 | 012/28/07 | +41/49/24 | 50 | 1 arcsec | 7 |
| | 2 | 011/52/30 | +42/02/26 | 15 | 1 arcsec | 7 |
| | 3 | 014/15/56 | +41/50/07 | 1540 | 1 arcsec | 7 |
| | 4 | 012/44/03 | +41/44/28 | 850 | 1 arcsec | 7 |
| | 5 | 012/27/06 | +41/43/00 | 20 | 1 arcsec | 7 |
| Pilch, R. | 1 | 017/10/00 | +51/05/00 | 120 | 1 arcmin | 11 |
| Pilski, A. | 1 | 019/41/00 | +54/20/30 | 46 | 0.1 arcmin | 11 |
| | 2 | 020/00/42 | +48/22/36 | 210 | 1 arcsec | 11 |
| Pishnenko, V. | 1 | observing | site unknown | | | |
| Pizzi, R. | 1 | 299/18/00 | -32/57/00 | | 1 deg | 27 |
| Pleshkunov, D. | 1 | observing | site unknown | | | |
| Polak, J. | 1 | 013/22/00 | +49/44/00 | 340 | 1 arcmin | 35 |
| | 2 | 013/10/00 | +49/52/00 | 500 | 1 arcmin | 35 |
| Ponomaryov, E. | 1 | observing | site unknown | | | |
| Poroshin, A. | 1 | observing | site unknown | | | |
| Portela, A. | 1 | 357/04/00 | +40/45/00 | 1005 | 1 arcmin | 14 |
| | 2 | 356/15/00 | +40/20/00 | | 1 deg | 14 |
| | 3 | 356/00/00 | +40/00/00 | | 10 deg | 14 |
| | 4 | 355/42/40 | +40/26/40 | 910 | 1 arcsec | 14 |
| | 5 | 356/53/35 | +40/31/15 | 916 | 1 arcsec | 14 |
| Posa, O. | 1 | 020/00/48 | +48/22/36 | 210 | 0.1 arcsec | 35 |
| Poulos, D. | 1 | 238/52/00 | +37/14/00 | 610 | 1 arcmin | 16 |
| | 2 | 238/10/00 | +37/06/00 | 1012 | 1 arcmin | 16 |
| | 3 | 238/18/00 | +37/20/00 | 518 | 1 arcmin | 16 |
| | 4 | 238/10/00 | +37/20/00 | 107 | 1 arcmin | 16 |
| Pravec, P. | 1 | 016/35/00 | +49/33/00 | 350 | 1 arcmin | 35 |
| | 2 | 018/21/00 | +49/41/00 | 340 | 1 arcmin | 35 |
| | 3 | 018/22/00 | +49/41/00 | 350 | 1 arcmin | 35 |
| | 4 | 016/07/00 | +49/11/00 | 430 | 1 arcmin | 35 |
| Priester, D. C. | 1 | 276/18/26 | +32/55/36 | 145 | 1 arcsec | 16 |
| | 2 | 276/19/25 | +32/57/28 | 187 | 1 arcsec | 16 |
| | 3 | 276/32/22 | +32/27/33 | 101 | 0.5 arcsec | 16 |
| | 4 | 276/30/57 | +33/01/10 | 194 | 1 arcsec | 16 |
| | 5 | 276/13/07 | +33/01/37 | 145 | 1 arcsec | 16 |
| Pryal, J. | 1 | 238/00/00 | +48/00/00 | 305 | 1 deg | 16 |
| | 2 | 236/00/00 | +49/00/00 | 305 | 1 deg | 21 |
| | 3 | 237/48/00 | +47/46/00 | | 1 deg | 16 |
| | 4 | 238/00/00 | +48/00/00 | | 5 deg | 16 |
| | 5 | 238/00/00 | +48/00/00 | | 5 deg | 16 |
| | 6 | 237/49/00 | +47/59/00 | | 5 deg | 16 |
| | 7 | 237/48/00 | +47/37/00 | | 1 deg | 16 |
| | 8 | 203/58/00 | +20/52/00 | | 1 deg | 76 |
| | 9 | 238/00/00 | +48/00/00 | | 5 deg | 16 |
| | 10 | 238/00/00 | +48/00/00 | | 5 deg | 16 |
| Purvinskis, R. | 1 | 116/06/00 | -31/55/00 | 225 | 1 arcsec | 26 |
| | 2 | 115/49/00 | -32/04/00 | 25 | 1 arcsec | 26 |
| Raffaello, D. | 1 | 011/11/00 | +43/49/00 | 921 | 1 arcmin | 7 |
| | 2 | 011/15/00 | +43/46/00 | 55 | 1 arcmin | 7 |
| Rapavy, P. | 1 | 020/00/48 | +48/22/36 | 210 | 0.1 arcsec | 35 |
| | 2 | 018/17/00 | +47/52/00 | 110 | 1 arcmin | 35 |
| | 3 | 019/09/15 | +48/43/00 | 570 | 1 arcmin | 35 |
| Ratz, K. | 1 | 010/14/00 | +50/48/00 | 240 | 1 arcmin | 23 |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|---------------------|------|------------------------|-----------|----------|------------|---------|
| Ratz, M. | 1 | 010/14/00 | +50/48/00 | 240 | 1 arcmin | 23 |
| Riccabone, G. | 1 | 007/38/04 | +45/02/48 | 255 | 1 arcsec | 7 |
| | 2 | 007/45/56 | +45/02/46 | 532 | 1 arcsec | 7 |
| | 3 | 007/46/45 | +44/15/15 | 1474 | 1 arcsec | 7 |
| | 4 | 007/28/52 | +45/17/25 | | 1 arcsec | 7 |
| Richardson, C. | 1 | 115/35/00 | -31/10/00 | | 1 arcmin | 26 |
| Richert, M. | 1 | 011/37/30 | +52/10/00 | 70 | 1 arcsec | 23 |
| | 2 | 011/39/00 | +52/07/00 | | 0.5 deg | 23 |
| Ridley, H. B. | 1 | 357/15/42 | +50/55/21 | 59 | 1 arcsec | 15 |
| Ripero, J. | 1 | 357/04/00 | +40/45/00 | 1005 | 1 arcmin | 14 |
| | 2 | 356/28/00 | +40/21/00 | 635 | 2 arcmin | 14 |
| Robertson, G. | 1 | 172/20/59 | -43/30/04 | 152 | 0.1 arcsec | 48 |
| | 2 | 133/56/00 | -23/42/00 | | 1 arcmin | 26 |
| Robertson, T. | 1 | 241/13/00 | +34/16/00 | 364 | 1 arcmin | 16 |
| | 2 | 242/11/00 | +34/42/00 | | 10 arcmin | 16 |
| | 3 | 245/20/00 | +32/40/00 | | 1 deg | 16 |
| Robinson, P. C. | 1 | 280/03/12 | +39/39/06 | 335 | 0.1 arcmin | 16 |
| | 2 | 280/08/42 | +39/29/36 | 527 | 0.1 arcmin | 16 |
| | 3 | 280/02/54 | +39/34/54 | 411 | 0.1 arcmin | 16 |
| | 4 | 279/57/48 | +39/41/54 | 427 | 0.1 arcmin | 16 |
| Robinson, R. L. | 1 | 280/03/12 | +39/39/06 | 335 | 0.1 arcmin | 16 |
| | 2 | 279/39/44 | +40/41/54 | 335 | 1 arcsec | 16 |
| Robotham, R. | 1 | 279/12/00 | +42/48/00 | 275 | 0.1 deg | 21 |
| Rodriguez C., J. A. | 1 | 356/23/18 | +41/00/24 | 1010 | 10 arcmin | 14 |
| | 2 | 356/18/00 | +40/26/00 | | 0.5 deg | 14 |
| | 3 | 357/04/00 | +40/45/00 | 1005 | 1 arcmin | 14 |
| Rodriguez, J. | 1 | 286/13/00 | +05/06/00 | | 0.5 deg | 33 |
| Rodriguez, V. | 1 | 293/02/00 | +10/30/00 | 885 | 5 deg | 17 |
| | 2 | 293/02/00 | +10/30/00 | | 5 deg | 17 |
| | 3 | 293/02/00 | +10/30/00 | | 5 deg | 17 |
| Rogers, J. H. | 1 | 000/05/42 | +52/12/48 | 30 | 0.1 arcmin | 15 |
| | 2 | 000/16/00 | +52/06/00 | 50 | 1 arcmin | 15 |
| | 3 | 358/12/00 | +54/24/00 | | 0.1 deg | 15 |
| | 4 | 343/18/00 | +28/00/00 | 100 | 0.1 deg | 74 |
| | 5 | 343/18/00 | +28/00/00 | 1600 | 0.1 deg | 74 |
| | 6 | 343/18/00 | +28/00/00 | 1800 | 0.1 deg | 74 |
| | 7 | 343/18/00 | +28/00/00 | 2070 | 0.1 deg | 74 |
| Rogozin, V. | 1 | observing site unknown | | | | |
| Roos, M. C. | 1 | 004/36/00 | +52/19/00 | 0 | 1 arcmin | 46 |
| | 2 | 004/42/00 | +52/18/00 | 0 | 1 arcmin | 46 |
| Rosenthal, D. | 1 | 210/05/30 | -17/30/42 | 0 | 1 arcsec | 61 |
| Rossi, L. | 1 | 013/07/00 | +43/26/42 | 505 | 0.1 arcmin | 7 |
| | 2 | 013/04/06 | +43/19/42 | 1200 | 0.1 arcmin | 7 |
| Rousom, J. | 1 | 278/54/36 | +43/01/12 | 278 | 0.01 deg | 21 |
| Royer, R. | 1 | 242/21/00 | +34/22/00 | 2134 | 2 arcmin | 16 |
| | 2 | 149/04/00 | -31/17/00 | 1100 | 0.5 deg | 26 |
| | 3 | 241/51/00 | +33/50/00 | | 10 arcmin | 16 |
| | 4 | 134/00/00 | -24/00/00 | 610 | 40 deg | 26 |
| | 5 | 243/00/00 | +36/34/00 | 610 | 2 deg | 16 |
| | 6 | 244/07/00 | +34/02/00 | 1372 | 1 deg | 16 |
| | 7 | 133/56/00 | -23/38/00 | 610 | 2 deg | 16 |
| | 8 | 134/00/00 | -24/00/00 | 9 | 40 deg | 26 |
| | 9 | 145/49/00 | -17/02/00 | 30 | 2 deg | 16 |
| Ru-Hu, C. | 1 | 121/27/00 | +31/10/00 | 4 | 1 arcmin | 10 |
| | 2 | 109/00/00 | +19/00/00 | | 1.5 deg | 10 |
| Rudakov, G. | 1 | observing site unknown | | | | |
| Rudenko, S. | 1 | observing site unknown | | | | |
| Rudolph, M. | 1 | 011/38/31 | +50/34/25 | 501 | 1 arcsec | 23 |
| | 2 | 011/38/10 | +50/34/12 | 533 | 1 arcsec | 23 |
| Rueda, N. | 1 | 285/56/00 | +04/35/00 | 2600 | 1 arcmin | 33 |
| | 2 | 286/13/00 | +05/06/00 | 2900 | 1 arcmin | 33 |
| | 3 | 286/00/00 | +05/00/00 | | 5 deg | 33 |
| Ruiz, J. | 1 | 356/12/00 | +43/28/00 | 10 | 5 arcmin | 14 |
| Rumyantsev, I. | 1 | observing site unknown | | | | |
| Sabers, D. | 1 | 149/04/00 | -31/17/00 | 610 | 0.5 deg | 26 |
| Sabia, J. D. | 1 | 284/19/56 | +41/35/47 | 399 | 1 arcsec | 16 |
| | 2 | 287/28/50 | +43/16/41 | 393 | 1 arcsec | 16 |
| | 3 | 284/19/50 | +41/30/44 | 439 | 1 arcsec | 16 |
| Sajtz, A. | 1 | 021/43/00 | +46/39/00 | 100 | 1 arcmin | 60 |
| Sakai, Y. | 1 | 138/51/36 | +35/00/57 | | 1 arcsec | 8 |
| Sanchez, A. | 1 | 249/39/55 | +31/03/13 | 2460 | 1 arcsec | 9 |
| Sanford, J. | 1 | 243/16/46 | +33/29/02 | 1329 | 1 arcsec | 16 |
| | 2 | 242/35/00 | +33/38/00 | | 10 arcmin | 16 |
| | 3 | 242/25/00 | +33/45/00 | | 10 arcmin | 16 |
| | 4 | 175/15/00 | -37/45/00 | | 10 arcmin | 48 |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|------------------|------|-----------|--------------|----------|-------------|---------|
| | 5 | 242/20/00 | +33/47/00 | | 0.5 deg | 16 |
| | 6 | 171/30/00 | -45/50/00 | | 10 arcmin | 48 |
| Saraceno, J. | 1 | observing | site unknown | | | |
| Sardini, D. | 1 | 010/05/00 | +45/36/00 | 203 | 1 arcmin | 7 |
| Sarocchi, D. | 1 | 011/21/30 | +43/41/30 | 420 | 1 arcsec | 7 |
| | 2 | 010/55/00 | +43/43/00 | | 10 arcmin | 7 |
| | 3 | 011/15/18 | +43/45/12 | 184 | 0.1 arcmin | 7 |
| Savelyev, A. | 1 | observing | site unknown | | | |
| Saxon, V. P. | 1 | 242/04/40 | +34/49/00 | 701 | 1 arcsec | 16 |
| | 2 | 241/54/00 | +34/42/00 | 732 | 1 arcmin | 16 |
| | 3 | 241/50/00 | +34/57/00 | 762 | 1 arcmin | 16 |
| Scardella, M. | 1 | 012/45/00 | +41/49/00 | | 1 deg | 7 |
| Schambeck, C. M. | 1 | 011/07/08 | +48/12/03 | 540 | 0.05 arcmin | 25 |
| | 2 | 344/25/56 | +27/44/48 | | 2 1 arcsec | 74 |
| | 3 | 344/22/18 | +27/45/23 | | 75 1 arcsec | 74 |
| | 4 | 344/25/37 | +27/44/40 | | 20 1 arcsec | 74 |
| Schmeer, P. | 1 | 007/03/42 | +49/12/52 | 293 | 1 arcsec | 25 |
| Schneidereit, J. | 1 | 011/36/00 | +50/54/00 | 145 | 0.1 deg | 23 |
| Scholten, A. | 1 | 006/03/30 | +52/06/54 | 17 | 0.1 arcmin | 46 |
| | 2 | 006/07/18 | +52/11/54 | 7 | 0.1 arcmin | 46 |
| | 3 | 006/03/30 | +52/09/00 | | 1 arcmin | 46 |
| | 4 | 011/00/00 | +33/48/00 | | 10 0.1 deg | 84 |
| | 5 | 006/07/15 | +52/11/52 | | 7 1 arcsec | 46 |
| Schumacher, K. | 1 | 007/40/00 | +49/10/00 | 300 | 1 arcmin | 25 |
| Sciezor, T. | 1 | 019/55/00 | +50/05/00 | 220 | 2 arcmin | 11 |
| | 2 | 019/49/00 | +49/58/00 | 260 | 1 arcmin | 11 |
| Seargent, D. | 1 | 151/29/37 | -33/21/02 | 30 | 0.1 arcsec | 26 |
| Searles, M. | 1 | 264/50/00 | +29/28/00 | 2 | 1 arcmin | 16 |
| Sedelkin, D. | 1 | observing | site unknown | | | |
| Selevich, G. | 1 | observing | site unknown | | | |
| Shankar, A. | 1 | 077/12/06 | +28/30/12 | 240 | 0.1 arcmin | 5 |
| | 2 | 076/53/18 | +28/27/24 | 225 | 0.1 arcmin | 5 |
| | 3 | 077/04/42 | +28/28/36 | 236 | 0.1 arcmin | 5 |
| | 4 | 077/10/00 | +28/30/00 | 260 | 0.1 arcmin | 5 |
| Shanklin, J. D. | 1 | 000/05/46 | +52/12/47 | 10 | 3.6 arcsec | 15 |
| | 2 | 000/10/12 | +52/01/48 | 70 | 0.01 deg | 15 |
| | 3 | 357/03/00 | +53/08/24 | 20 | 0.01 deg | 15 |
| | 4 | 000/06/00 | +52/00/00 | | 0.1 deg | 15 |
| | 5 | 295/42/00 | -65/18/00 | | 0.1 deg | 1 |
| | 6 | 291/36/00 | -67/42/00 | | 0.1 deg | 1 |
| | 7 | 291/24/00 | -66/30/00 | | 0.1 deg | 1 |
| | 8 | 295/42/00 | -65/18/00 | | 0.1 deg | 1 |
| | 9 | 302/30/00 | -55/06/00 | | 0.1 deg | 89 |
| | 10 | 302/12/00 | -51/42/00 | | 0.1 deg | 89 |
| | 11 | 303/00/00 | -52/12/00 | | 0.1 deg | 89 |
| | 12 | 306/36/00 | -55/24/00 | | 0.1 deg | 89 |
| | 13 | 314/24/00 | -60/42/00 | | 0.1 deg | 89 |
| | 14 | 322/00/00 | -54/00/00 | | 0.1 deg | 89 |
| | 15 | 321/36/00 | -53/12/00 | | 0.1 deg | 89 |
| | 16 | 321/36/00 | -49/12/00 | | 0.1 deg | 89 |
| | 17 | 320/48/00 | -45/06/00 | | 0.1 deg | 89 |
| | 18 | 319/48/00 | -40/36/00 | | 0.1 deg | 89 |
| | 19 | 319/06/00 | -36/18/00 | | 0.1 deg | 89 |
| | 20 | 318/30/00 | -32/12/00 | | 0.1 deg | 89 |
| | 21 | 318/12/00 | -30/36/00 | | 0.1 deg | 89 |
| | 22 | 317/42/00 | -27/48/00 | | 0.1 deg | 89 |
| | 23 | 317/36/00 | -27/12/00 | | 0.1 deg | 89 |
| | 24 | 317/24/00 | -26/24/00 | | 0.1 deg | 89 |
| | 25 | 316/54/00 | -22/48/00 | | 0.1 deg | 89 |
| | 26 | 316/48/00 | -22/54/00 | | 0.1 deg | 89 |
| | 27 | 317/42/00 | -23/06/00 | | 0.1 deg | 89 |
| | 28 | 321/18/00 | -18/30/00 | | 0.1 deg | 89 |
| | 29 | 322/42/00 | -15/06/00 | | 0.1 deg | 89 |
| | 30 | 324/18/00 | -10/36/00 | | 0.1 deg | 89 |
| | 31 | 326/06/00 | -06/06/00 | | 0.1 deg | 89 |
| | 32 | 333/30/00 | +15/18/00 | | 0.1 deg | 89 |
| | 33 | 335/12/00 | +19/18/00 | | 0.1 deg | 89 |
| | 34 | 337/12/00 | +23/30/00 | | 0.1 deg | 89 |
| | 35 | 339/18/00 | +27/30/00 | | 0.1 deg | 89 |
| | 36 | 341/48/00 | +31/24/00 | | 0.1 deg | 89 |
| | 37 | 346/54/00 | +39/06/00 | | 0.1 deg | 89 |
| | 38 | 349/30/00 | +43/00/00 | | 0.1 deg | 89 |
| Shilov, S. | 1 | observing | site unknown | | | |
| Shirokov, A. | 1 | observing | site unknown | | | |
| Shitikov, A. | 1 | observing | site unknown | | | |
| Siccardi, L. | 1 | 296/06/00 | -34/30/00 | 154 | 5 arcmin | 27 |
| | 2 | observing | site unknown | | | |
| Sicoli, P. | 1 | 009/14/27 | +45/47/32 | 271 | 1 arcsec | 7 |
| | 2 | 009/13/37 | +45/52/55 | 1182 | 1 arcsec | 7 |
| Sikoruk, L. | 1 | observing | site unknown | | | |
| Silhan, J. | 1 | 017/02/30 | +49/04/00 | 300 | 2.5 arcmin | 35 |
| Simmons, K. | 1 | 278/11/00 | +30/30/00 | 11 | 1 arcmin | 16 |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|-----------------------|------|------------------------|-----------|----------|-------------|---------|
| Simmons, W. | 1 | 278/11/00 | +30/30/00 | 11 | 1 arcmin | 16 |
| Skjaeraasen, O. | 1 | 010/47/21 | +59/55/12 | 50 | 2 arcsec | 47 |
| | 2 | 010/40/06 | +59/59/13 | 530 | 2 arcsec | 47 |
| | 3 | 010/38/00 | +59/54/00 | 10 | 1 arcmin | 47 |
| | 4 | 010/00/00 | +60/00/00 | | 5 deg | 47 |
| Skorupa, W. | 1 | 007/21/00 | +51/20/00 | 281 | 1 arcmin | 25 |
| Skvarka, J. | 1 | 019/09/00 | +48/43/00 | 568 | 1 arcmin | 35 |
| Sladkov, Ya. | 1 | observing site unknown | | | | |
| Slusarczyk, J. | 1 | 020/13/23 | +50/02/03 | 189 | 1 arcsec | 11 |
| Smith, A. | 1 | 273/48/25 | +35/07/40 | 299 | 1 arcsec | 16 |
| | 2 | 273/54/15 | +35/12/29 | 296 | 1 arcsec | 16 |
| Smith, D. | 1 | 273/35/50 | +35/44/25 | 204 | 1 arcsec | 16 |
| Snyder, L.F. | 1 | 240/03/30 | +39/15/10 | 2134 | 10 arcsec | 16 |
| | 2 | 240/04/10 | +39/12/00 | 2134 | 10 arcsec | 16 |
| | 3 | 240/07/00 | +39/19/00 | 2743 | 10 arcsec | 16 |
| Soc. Astro. de France | 1 | 055/42/00 | -21/13/00 | 2300 | 1 arcmin | 70 |
| | 2 | 055/14/00 | -21/02/00 | 100 | 1 arcmin | 70 |
| | 3 | 002/13/54 | +48/48/16 | 170 | 0.1 arcmin | 4 |
| | 4 | 000/08/42 | +42/56/12 | 2861 | 0.1 arcmin | 4 |
| Soder, J. | 1 | 275/46/22 | +40/14/56 | 309 | 1 arcsec | 16 |
| Spalding, G.H. | 1 | 358/33/07 | +51/37/26 | 70 | 3.6 arcsec | 15 |
| Speil, J. | 1 | 015/33/36 | +77/00/04 | 10 | 1 arcsec | 11 |
| Spratt, C.E. | 1 | 236/49/12 | +48/15/00 | 9 | 0.01 deg | 21 |
| | 2 | 236/46/48 | +48/18/00 | 9 | 0.01 deg | 21 |
| | 3 | 236/49/48 | +48/15/36 | 6 | 0.01 deg | 21 |
| | 4 | 236/48/36 | +48/16/48 | 21 | 0.01 deg | 21 |
| Stapleton, J. | 1 | 242/14/00 | +33/53/00 | 168 | 1 arcmin | 16 |
| | 2 | 241/53/00 | +33/51/00 | 12 | 1 arcmin | 16 |
| | 3 | 243/51/00 | +34/05/00 | 951 | 1 arcmin | 16 |
| | 4 | 283/00/00 | -10/00/00 | 0 | 10 deg | 67 |
| Stephan, C. | 1 | 278/33/16 | +27/31/23 | 39 | 0.1 arcsec | 16 |
| Sternwarte Frankfurt | 1 | 016/24/00 | -23/17/00 | 1780 | 1 arcmin | 15 |
| Sternwarte Hof | 1 | 011/54/56 | +50/18/05 | 521 | 1 arcsec | 25 |
| | 2 | 011/52/36 | +50/14/56 | 624 | 1 arcsec | 25 |
| | 3 | 357/20/00 | +36/55/00 | 2311 | 1 arcmin | 14 |
| | 4 | 326/02/30 | +09/30/00 | 2000 | 1 arcmin | 69 |
| Stolzen, P. | 1 | 015/52/00 | -22/00/00 | 1165 | 2 deg | 65 |
| Stomeo, E. | 1 | 012/21/01 | +45/23/17 | 10 | 0.36 arcsec | 7 |
| | 2 | 012/24/00 | +45/24/00 | 3 | 0.1 deg | 7 |
| Storey, D. | 1 | 357/59/00 | +51/30/00 | 156 | 1 arcmin | 15 |
| | 2 | 358/06/20 | +51/33/00 | 130 | 1 arcmin | 15 |
| | 3 | 345/38/30 | -07/56/00 | | 1 arcmin | 83 |
| Stott, D. | 1 | 358/42/24 | +51/03/36 | 80 | 0.1 arcmin | 15 |
| Suzuki, K. | 1 | 137/21/24 | +35/10/12 | 420 | 0.1 arcmin | 8 |
| | 2 | 137/15/24 | +35/08/06 | 115 | 0.1 arcmin | 8 |
| | 3 | 143/20/00 | +14/00/00 | | 1 deg | 82 |
| Swart, E.T. | 1 | 005/29/54 | +51/28/06 | 17 | 0.1 arcmin | 46 |
| Swavelly, M.E. | 1 | 282/05/00 | +40/45/00 | 34 | 1 arcmin | 16 |
| | 2 | 282/12/00 | +40/42/00 | | 1 arcmin | 16 |
| Szulc, M. | 1 | 017/52/04 | +53/35/04 | 128 | 0.1 arcsec | 11 |
| Szymocha, M. | 1 | 019/20/00 | +50/30/00 | 350 | 1 arcmin | 11 |
| Takacs, R. | 1 | 019/09/11 | +48/45/00 | 568 | 1 arcmin | 35 |
| Tanikawa, M. | 1 | 146/00/00 | +16/00/00 | 50 | 1 deg | 8 |
| | 2 | 139/29/00 | +35/55/00 | | 1 deg | 8 |
| | 3 | 139/00/00 | +36/00/00 | | 10 deg | 8 |
| | 4 | 139/00/00 | +36/00/00 | | 10 deg | 8 |
| | 5 | observing site unknown | | | | |
| | 6 | observing site unknown | | | | |
| | 7 | 139/31/00 | +35/51/00 | | 5 deg | 82 |
| Tanti, T. | 1 | 014/26/54 | +35/55/02 | 120 | 1 arcsec | 44 |
| | 2 | observing site unknown | | | | |
| Tarnutzer, A. | 1 | 008/19/21 | +47/02/15 | 470 | 1 arcsec | 18 |
| | 2 | 008/18/23 | +47/02/23 | 487 | 1 arcsec | 18 |
| | 3 | 313/10/17 | -22/54/00 | 1100 | 1 arcsec | 2 |
| Tatarnikov, A. | 1 | observing site unknown | | | | |
| Tatum, R. | 1 | 282/25/12 | +37/30/30 | 106 | 0.1 arcsec | 16 |
| Taylor, D.L. | 1 | 288/34/00 | -41/05/00 | | 1 arcmin | 27 |
| Taylor, M.D. | 1 | 358/28/56 | +53/40/34 | 30 | 0.1 arcsec | 15 |
| | 2 | 358/11/36 | +53/54/12 | 350 | 0.1 arcmin | 15 |
| | 3 | 343/21/30 | +28/00/18 | 10 | 0.1 arcmin | 74 |
| Temprano, J. | 1 | 359/44/49 | +43/27/48 | | 1 arcsec | 14 |
| Thomas, A. | 1 | 006/47/00 | +50/40/00 | 180 | 1 arcmin | 25 |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|--------------------|------|------------------------|-----------|----------|-------------|---------|
| | 2 | 008/17/00 | +49/56/00 | 175 | 1 arcmin | 25 |
| | 3 | 343/20/00 | +28/11/00 | 2020 | 1 arcmin | 74 |
| | 4 | 008/40/00 | +49/47/00 | 150 | 1 arcmin | 25 |
| Thompson, G. | 1 | 153/19/02 | -27/39/40 | 130 | 1 arcsec | 26 |
| | 2 | 153/08/04 | -27/37/07 | 85 | 0.1 arcsec | 26 |
| | 3 | 153/25/00 | -27/43/00 | 30 | 1 arcmin | 26 |
| | 4 | 153/23/00 | -27/41/00 | 200 | 1 arcmin | 26 |
| | 5 | 153/10/00 | -27/50/00 | 5 | 1 arcmin | 26 |
| | 6 | 153/16/00 | -27/46/00 | 0 | 1 arcmin | 26 |
| | 7 | 153/17/48 | -27/43/24 | 0 | 0.1 arcmin | 26 |
| | 8 | 153/10/00 | -27/45/00 | 20 | 1 arcmin | 26 |
| | 9 | 153/20/12 | -27/43/16 | 0 | 0.1 arcmin | 26 |
| | 10 | 153/25/00 | -27/41/00 | 200 | 1 arcmin | 26 |
| | 11 | 130/54/00 | -25/30/00 | 549 | 1 deg | 26 |
| Torres, E. | 1 | 358/06/24 | +43/17/01 | 120 | 1 arcsec | 14 |
| | 2 | 358/01/00 | +43/19/00 | | 1 deg | 14 |
| | 3 | 293/20/00 | +18/00/00 | | 3 deg | 77 |
| | 4 | 293/50/00 | +18/30/00 | | 1 deg | 77 |
| | 5 | 293/20/00 | +18/00/00 | | 3 deg | 77 |
| | 6 | observing site unknown | | | | |
| Townsend, R. | 1 | 359/50/00 | +51/53/00 | 95 | 1 arcmin | 15 |
| | 2 | 359/52/00 | +51/53/00 | 110 | 1 arcmin | 15 |
| | 3 | 359/38/00 | +51/59/00 | 61 | 1 arcmin | 15 |
| Travnik, N.A.S. | 1 | 313/10/19 | -22/53/59 | 1100 | 1 arcsec | 2 |
| Trebacz, A. | 1 | 020/13/23 | +50/02/03 | 198 | 1 arcsec | 11 |
| Tregaskis, T.B. | 1 | 145/06/26 | -38/11/06 | 110 | 1 arcsec | 26 |
| | 2 | 145/11/00 | -38/16/00 | | 1 arcmin | 26 |
| | 3 | 145/10/00 | -37/49/00 | | 20 arcmin | 26 |
| | 4 | 145/17/00 | -38/24/00 | | 1 arcmin | 26 |
| | 5 | 147/19/00 | -42/54/00 | | 1 arcmin | 26 |
| | 6 | 145/03/00 | -36/51/00 | | 1 arcmin | 26 |
| | 7 | 144/57/00 | -37/18/00 | | 1 arcmin | 26 |
| | 8 | 145/06/00 | -38/11/00 | | 20 arcmin | 26 |
| Trixler, F. | 1 | 011/31/00 | +47/51/00 | 730 | 1 arcmin | 25 |
| | 2 | 011/29/00 | +47/51/00 | 600 | 1 arcmin | 25 |
| Troiani, D.M. | 1 | 271/00/00 | +42/30/00 | 299 | 1 deg | 16 |
| | 2 | 271/00/00 | +41/30/00 | 239 | 1 deg | 16 |
| | 3 | 272/00/00 | +42/30/00 | 216 | 1 deg | 16 |
| | 4 | 269/00/00 | +29/00/00 | 3072 | 1 deg | 16 |
| | 5 | 271/30/00 | +42/00/00 | | 1 deg | 16 |
| | 6 | 272/23/00 | +41/49/00 | | 1 deg | 16 |
| | 7 | 272/00/00 | +41/15/00 | | 10 deg | 16 |
| | 8 | 272/00/00 | +41/49/00 | | 10 deg | 16 |
| | 9 | 272/07/00 | +41/07/00 | | 2 arcmin | 16 |
| | 10 | 272/10/00 | +41/56/00 | | 2 arcmin | 16 |
| Trost, D. | 1 | observing site unknown | | | | |
| Tsvetkov, L. | 1 | observing site unknown | | | | |
| Tsygankov, D. | 1 | observing site unknown | | | | |
| Turner, N. | 1 | 151/46/00 | -32/56/00 | 55 | 1 arcmin | 26 |
| | 2 | 151/05/00 | -32/05/00 | 305 | 1 arcmin | 26 |
| Tuten, J. | 1 | 264/55/00 | +29/31/00 | 6 | 1 arcmin | 16 |
| | 2 | 262/49/30 | +29/37/00 | 8 | 1 arcmin | 16 |
| | 3 | 264/50/00 | +29/28/00 | 2 | 1 arcmin | 16 |
| Uberti, M. | 1 | 009/13/35 | +45/26/40 | 137 | 0.1 arcsec | 7 |
| | 2 | 009/30/20 | +45/50/00 | 1400 | 1 arcsec | 7 |
| | 3 | 009/07/15 | +45/59/20 | 1322 | 1 arcsec | 7 |
| | 4 | 009/06/23 | +46/01/00 | 1100 | 1 arcsec | 7 |
| Uda, K. | 1 | 136/04/42 | +34/53/42 | 280 | 0.1 arcmin | 8 |
| | 2 | 136/03/06 | +34/52/48 | 350 | 0.1 arcmin | 8 |
| Ulbricht, S. | 1 | 013/20/00 | +52/31/00 | | 1 deg | 25 |
| Underhay, E. | 1 | observing site unknown | | | | |
| Urbanski, P. | 1 | 019/37/00 | +52/14/00 | 100 | 1 arcmin | 11 |
| Vaclik, F. | 1 | 014/39/00 | +48/54/00 | 500 | 1 arcmin | 35 |
| Valasek, V. | 1 | 016/35/00 | +49/02/00 | 200 | 1 arcmin | 35 |
| Valeriani, G. | 1 | 289/35/34 | +44/11/33 | 176 | 0.36 arcsec | 16 |
| | 2 | 289/37/07 | +44/11/29 | 253 | 0.36 arcsec | 16 |
| Valisa, P. | 1 | observing site unknown | | | | |
| van Asperen, H. | 1 | 005/58/18 | +51/59/30 | | 0.1 arcmin | 46 |
| van de Weg, R.L.W. | 1 | 006/45/36 | +52/17/42 | 15 | 0.1 arcmin | 46 |
| | 2 | 006/47/18 | +52/17/48 | 16 | 0.1 arcmin | 46 |
| | 3 | 006/44/12 | +52/17/06 | 17 | 0.1 arcmin | 46 |
| | 4 | 003/54/45 | +51/43/30 | 1 | 0.1 arcmin | 46 |
| | 5 | 013/58/18 | +46/40/36 | 511 | 0.1 arcmin | 28 |
| van der Laan, T.A. | 1 | 007/12/06 | +53/04/48 | 2 | 0.1 arcmin | 46 |
| van der Mey, L. | 1 | 026/43/00 | -27/58/00 | 1350 | 1 arcmin | 13 |
| | 2 | 027/07/30 | -28/18/30 | 1450 | 0.1 arcmin | 13 |
| van Loo, F.R. | 1 | 004/42/48 | +51/06/24 | 10 | 0.1 arcmin | 29 |
| | 2 | 004/44/18 | +51/02/24 | 15 | 0.1 arcmin | 29 |
| | 3 | 006/01/24 | +43/58/30 | 735 | 0.1 arcmin | 4 |
| | 4 | 005/50/00 | +44/06/00 | 1700 | 0.1 deg | 4 |
| | 5 | 342/58/00 | +28/41/00 | | 0.5 deg | 74 |
| | 6 | observing site unknown | | | | |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|-----------------|------|------------------------|-----------|----------|-------------|---------|
| | 7 | 004/45/30 | +51/06/29 | | 1 arcmin | 29 |
| | 8 | 343/20/38 | +28/26/53 | | 3.6 arcsec | 74 |
| van Munster, T. | 1 | 005/04/48 | +50/46/18 | 80 | 0.1 arcmin | 29 |
| Vanin, G. | 1 | 011/54/42 | +46/03/22 | 462 | 0.1 arcsec | 7 |
| | 2 | 011/48/44 | +45/58/18 | 1050 | 0.1 arcsec | 7 |
| | 3 | 012/18/35 | +46/04/51 | 1500 | 1 arcsec | 7 |
| | 4 | 010/12/00 | +46/33/00 | 2250 | 1 arcmin | 7 |
| | 5 | 010/10/00 | +46/33/00 | 1816 | 1 arcmin | 7 |
| | 6 | 012/01/36 | +46/00/48 | 1010 | 1 arcsec | 7 |
| | 7 | 012/04/30 | +46/37/42 | 3191 | 0.1 arcmin | 7 |
| | 8 | 012/36/00 | +34/36/00 | 0 | 1 arcmin | 84 |
| | 9 | 009/01/00 | +33/28/00 | 0 | 1 arcmin | 84 |
| | 10 | 007/56/00 | +34/26/00 | 900 | 1 arcmin | 84 |
| | 11 | 009/37/00 | +33/02/00 | 0 | 1 arcmin | 84 |
| Vargas B., A.G. | 1 | 293/56/00 | -17/23/00 | 2500 | 1 arcmin | 31 |
| | 2 | 294/25/00 | -17/41/00 | 4200 | 1 arcmin | 31 |
| Velasco, E. | 1 | 356/15/00 | +40/20/00 | | 1 deg | 14 |
| | 2 | 356/27/10 | +40/21/20 | 601 | 1 arcsec | 14 |
| | 3 | 356/35/00 | +40/14/00 | 640 | 1 deg | 14 |
| Velasco, P. | 1 | 356/15/00 | +40/20/00 | | 1 deg | 14 |
| | 2 | 356/27/10 | +40/21/20 | 601 | 1 arcsec | 14 |
| Ventura, F. | 1 | 014/25/44 | +35/54/21 | 85 | 1 arcsec | 44 |
| Verdenet, M. | 1 | 003/45/15 | +46/37/20 | 250 | 1 arcsec | 4 |
| Verhoeven, P.G. | 1 | 005/43/42 | +50/47/42 | 56 | 0.1 arcmin | 46 |
| | 2 | 005/42/18 | +50/49/54 | 50 | 0.1 arcmin | 46 |
| Villa, M. | 1 | 011/56/00 | +44/33/00 | 6 | 1 arcmin | 7 |
| | 2 | 011/45/00 | +44/03/00 | 681 | 1 arcmin | 7 |
| | 3 | 011/35/00 | +44/28/00 | 246 | 1 arcmin | 7 |
| | 4 | 011/56/00 | +44/25/00 | 30 | 1 arcmin | 7 |
| | 5 | 012/06/00 | +44/27/00 | 5 | 1 arcmin | 7 |
| | 6 | 012/01/00 | +46/31/00 | 2117 | 1 arcmin | 7 |
| | 7 | 011/47/00 | +44/03/00 | 767 | 1 arcmin | 7 |
| | 8 | 011/48/00 | +44/28/00 | 9 | 1 arcmin | 7 |
| | 9 | 011/51/00 | +44/25/00 | 13 | 1 arcmin | 7 |
| | 10 | 011/01/00 | +37/07/00 | 695 | 1 arcmin | 7 |
| | 11 | 011/07/00 | +37/04/00 | 17 | 1 arcmin | 7 |
| | 12 | 012/28/00 | +42/30/00 | 200 | 1 arcmin | 7 |
| | 13 | 011/54/00 | +44/29/00 | 6 | 1 arcmin | 7 |
| | 14 | 012/17/00 | +41/44/00 | 3 | 1 arcmin | 7 |
| Villate, F. | 1 | 285/00/00 | +10/57/00 | | 0.5 deg | 33 |
| Villegas, S. | 1 | 301/35/00 | -34/36/00 | 25 | 1 arcmin | 27 |
| | 2 | 301/34/00 | -34/36/18 | 20 | 1 arcmin | 27 |
| Vincent, F. | 1 | 356/59/21 | +56/27/54 | 152 | 1 arcsec | 12 |
| | 2 | 357/11/24 | +56/19/44 | 38 | 1 arcsec | 12 |
| | 3 | 027/34/00 | -29/36/00 | 1676 | 1 arcmin | 68 |
| | 4 | 028/02/00 | -29/51/00 | 2286 | 1 arcmin | 68 |
| Vincent, J. | 1 | 031/30/00 | -17/42/00 | 1500 | 0.1 deg | 59 |
| | 2 | 031/06/26 | -17/46/07 | 1510 | 0.1 arcsec | 59 |
| | 3 | 025/00/00 | -29/00/00 | | 10 deg | 13 |
| | 4 | 025/00/00 | -29/00/00 | | 10 deg | 13 |
| | 5 | 030/00/00 | -23/00/00 | | 5 deg | 13 |
| Vohla, F. | 1 | 012/28/00 | +50/57/00 | 220 | 1 arcmin | 23 |
| Wagner, G. | 1 | 008/15/54 | +48/55/32 | 120 | 1 arcsec | 25 |
| | 2 | 008/18/16 | +48/56/01 | 119 | 1 arcsec | 25 |
| | 3 | 008/31/58 | +48/51/20 | 406 | 1 arcsec | 25 |
| | 4 | 008/30/39 | +48/47/37 | 720 | 1 arcsec | 25 |
| | 5 | 008/27/04 | +48/49/21 | 622 | 1 arcsec | 25 |
| | 6 | 008/21/54 | +48/58/40 | 116 | 1 arcsec | 25 |
| Wakatsuki, M. | 1 | 139/27/20 | +35/20/29 | 13 | 1 arcsec | 8 |
| | 2 | 139/02/06 | +35/13/00 | | 1 arcsec | 8 |
| | 3 | 139/02/53 | +35/10/48 | | 1 arcsec | 8 |
| Wallace, B.G. | 1 | 277/15/41 | +27/46/59 | 6 | 1 arcsec | 16 |
| | 2 | 277/15/51 | +27/37/45 | 2 | 0.1 arcsec | 16 |
| | 3 | 277/19/33 | +27/38/57 | 2 | 0.1 arcsec | 16 |
| | 4 | 277/19/28 | +27/39/21 | 2 | 0.1 arcsec | 16 |
| | 5 | 277/42/11 | +28/28/43 | 82 | 0.1 arcsec | 16 |
| Ward, A. | 1 | 357/50/38 | +51/38/19 | 116 | 1 arcsec | 15 |
| | 2 | 149/04/00 | -31/17/00 | 20 | arcmin | 26 |
| | 3 | 149/00/00 | -31/00/00 | 5 | deg | 26 |
| Washi, I. | 1 | 136/00/09 | +34/34/02 | 400 | 0.36 arcsec | 8 |
| | 2 | 145/45/00 | +15/11/00 | | 1 deg | 82 |
| Washi, S. | 1 | 136/00/09 | +34/34/02 | 400 | 0.36 arcsec | 8 |
| | 2 | observing site unknown | | | | |
| | 3 | 145/45/00 | +15/11/00 | | 1 deg | 82 |
| Watanabe, A. | 1 | 140/49/10 | +38/13/47 | 100 | 1 arcsec | 8 |
| Watanabe, H. | 1 | 140/49/10 | +38/13/47 | 100 | 1 arcsec | 8 |
| Watanabe, N. | 1 | 139/10/00 | +37/55/00 | 10 | 1 arcmin | 8 |
| | 2 | 139/30/00 | +38/02/00 | 230 | 1 arcmin | 8 |
| | 3 | 139/23/00 | +37/56/00 | 20 | 1 arcmin | 8 |
| | 4 | 140/30/00 | +37/41/00 | 1500 | 1 arcmin | 8 |
| | 5 | 139/04/00 | +36/26/00 | | 1 deg | 8 |
| | 6 | 139/26/30 | +38/12/15 | | 0.1 arcmin | 8 |
| Webb, R. | 1 | 238/19/51 | +36/25/39 | 581 | 0.01 arcsec | 16 |
| Weissferdt, F. | 1 | 008/23/43 | +50/32/17 | 200 | 1 arcsec | 25 |

Table VIII. Observers (Cont'd)

| Observer | Site | Longitude | Latitude | Altitude | Precision | Country |
|-----------------|------|----------------|-----------|----------|------------|---------|
| | 2 | 008/15/59 | +50/22/09 | 220 | 1 arcsec | 25 |
| | 3 | 015/30/00 | -20/15/00 | 1150 | 1 arcmin | 65 |
| Westlund, M. | 1 | 017/45/00 | +59/53/42 | 25 | 0.1 arcmin | 54 |
| | 2 | 017/06/00 | +60/05/00 | 60 | 0.1 arcmin | 54 |
| | 3 | 012/52/36 | +60/48/54 | 570 | 0.1 arcmin | 54 |
| | 4 | 012/51/12 | +60/45/54 | 300 | 0.1 arcmin | 54 |
| | 5 | 012/57/54 | +60/17/48 | 520 | 0.1 arcmin | 54 |
| | 6 | 342/18/00 | +28/37/00 | 46 | 1 arcmin | 74 |
| | 7 | 343/26/00 | +28/17/00 | 2021 | 1 arcmin | 74 |
| | 8 | 344/22/00 | +27/45/00 | 18 | 1 arcmin | 74 |
| | 9 | 017/24/36 | +59/56/24 | 30 | 0.1 arcmin | 54 |
| | 10 | 346/15/06 | +28/59/36 | 186 | 0.1 arcmin | 74 |
| | 11 | 343/30/00 | +28/18/00 | 2387 | 1 arcmin | 74 |
| Wikholm, L. | 1 | 025/03/54 | +60/14/00 | 30 | 1 arcmin | 19 |
| Will, M. | 1 | 270/57/07 | +37/48/26 | 125 | 1 arcsec | 16 |
| | 2 | 271/02/04 | +37/47/38 | 139 | 1 arcsec | 16 |
| | 3 | 281/34/00 | +38/32/00 | 1006 | 1 arcmin | 16 |
| | 4 | 281/37/00 | +38/35/00 | 1006 | 1 arcmin | 16 |
| | 5 | 284/32/00 | +38/07/00 | 0 | 1 arcmin | 16 |
| | 6 | 282/59/00 | +39/00/00 | 0 | 1 arcmin | 16 |
| Williams, D. J. | 1 | 271/00/00 | +35/42/00 | 145 | 0.1 deg | 16 |
| Williams, J. | 1 | 265/47/25 | +39/06/23 | 244 | 1 arcsec | 16 |
| Williams, P. F. | 1 | 150/59/44 | -34/05/45 | 189 | 1 arcsec | 26 |
| | 2 | 149/15/42 | -31/20/00 | 1160 | 1 arcsec | 26 |
| | 3 | 130/58/00 | -25/11/00 | 860 | 1 arcmin | 26 |
| Wils, P. | 1 | 004/19/54 | +51/06/54 | 6 | 0.1 arcmin | 29 |
| | 2 | 006/01/24 | +43/58/30 | 735 | 0.1 arcmin | 4 |
| | 3 | 343/20/38 | +28/28/53 | 2400 | 3.6 arcsec | 74 |
| | 4 | 342/58/00 | +28/41/00 | 0 | 1 deg | 74 |
| Wilson, A. M. | 1 | 249/59/30 | +34/09/12 | 1981 | 3 arcsec | 16 |
| Winkler, R. | 1 | 012/40/00 | +51/30/00 | 114 | 1 arcmin | 23 |
| Wisniewski, P. | 1 | 284/57/45 | +42/03/30 | 45 | 1 arcsec | 16 |
| Witte, F. | 1 | 014/34/30 | +52/14/42 | 27 | 0.1 arcmin | 23 |
| | 2 | 014/39/48 | +52/09/54 | 35 | 0.1 arcmin | 23 |
| | 3 | 014/25/18 | +52/15/18 | 43 | 0.1 arcmin | 23 |
| Woidyla, B. | 1 | 265/50/16 | +45/33/38 | 317 | 1 arcsec | 16 |
| | 2 | 265/36/29 | +45/34/50 | 378 | 1 arcsec | 16 |
| | 3 | 255/58/41 | +30/40/19 | 1829 | 4 arcsec | 16 |
| Yasuki, M. | 1 | 134/15/00 | +35/28/00 | 10 | 1 arcmin | 8 |
| | 2 | 134/20/00 | +35/28/00 | 415 | 1 arcmin | 8 |
| | 3 | 134/15/00 | +35/28/00 | 20 | 1 arcmin | 8 |
| | 4 | 134/17/00 | +35/23/00 | 72 | 1 arcmin | 8 |
| Yeu, B. | 1 | 240/56/00 | +34/48/00 | 2591 | 5 arcmin | 16 |
| | 2 | 240/55/00 | +34/42/00 | 1585 | 0.5 deg | 16 |
| | 3 | 244/00/00 | +33/40/00 | 0 | 1 deg | 16 |
| Young, J. W. | 1 | 242/19/12 | +34/22/54 | 2286 | 0.1 arcmin | 16 |
| Yurchenko, Yu. | 1 | observing site | unknown | | | |
| Zagaynov, V. A. | 1 | observing site | unknown | | | |
| Zalles, R. | 1 | 295/00/00 | -18/00/00 | 0 | 5 deg | 31 |
| Zanette, D. | 1 | 289/00/00 | -41/00/00 | 0 | 1 deg | 27 |
| Zanotta, M. V. | 1 | 009/00/00 | +46/00/00 | 0 | 2 deg | 7 |
| | 2 | 006/45/00 | +45/59/00 | 700 | 1 arcmin | 7 |
| | 3 | 006/48/00 | +45/59/00 | 1322 | 1 arcmin | 7 |
| | 4 | 009/28/00 | +45/52/00 | 0 | 2 deg | 7 |
| | 5 | 009/03/00 | +45/48/00 | 0 | 2 deg | 7 |
| Zanstra, W. T. | 1 | 006/51/00 | +53/19/00 | 0 | 2 arcmin | 46 |
| | 2 | 006/50/48 | +53/21/36 | 0 | 0.1 arcmin | 46 |
| | 3 | 007/23/00 | +47/14/00 | 1306 | 0.1 arcmin | 18 |
| | 4 | 252/03/00 | +42/05/00 | 1400 | 1 arcmin | 16 |
| Zanut, S. | 1 | 012/47/24 | +45/57/00 | 0 | 0.01 deg | 7 |
| | 2 | 012/34/12 | +46/06/00 | 400 | 0.1 deg | 7 |
| Zhigalev, A. | 1 | observing site | unknown | | | |
| Zimnikoval, P. | 1 | 019/09/11 | +48/43/00 | 568 | 1 arcmin | 35 |
| Zinvyev, V. A. | 1 | observing site | unknown | | | |
| Zische, E. | 1 | 014/25/20 | +51/06/56 | 330 | 1 arcsec | 23 |
| | 2 | 014/25/57 | +51/02/34 | 335 | 1 arcsec | 23 |
| | 3 | 014/27/00 | +51/11/00 | 0 | 3 deg | 23 |
| Znasik, M. | 1 | 018/45/15 | +49/12/21 | 404 | 0.1 arcsec | 35 |

Table IX. Assigned Country Codes

| Assigned Country Codes | | Assigned Country Codes | |
|------------------------|---------------------------------|------------------------|---------------------------------|
| (sorted by name) | | (sorted by code) | |
| 98 | Air borne | 01 | Antarctica |
| 01 | Antarctica | 02 | Brazil |
| 27 | Argentina | 03 | Bulgaria |
| 83 | Ascension Island | 04 | France |
| 26 | Australia | 05 | India |
| 28 | Austria | 06 | Indonesia |
| 71 | Barbados | 07 | Italy |
| 29 | Belgium | 08 | Japan |
| 30 | Bermuda | 09 | Mexico |
| 31 | Bolivia | 10 | People's Republic of China |
| 64 | Botswana | 11 | Poland |
| 02 | Brazil | 12 | United Kingdom (also: 15, 72) |
| 03 | Bulgaria | 13 | South Africa |
| 21 | Canada | 14 | Spain |
| 74 | Canary Islands | 16 | United States (also: 76) |
| 32 | Chile | 17 | Venezuela |
| 33 | Colombia | 18 | Switzerland |
| 34 | Costa Rica | 19 | Finland |
| 79 | Cuba | 20 | U.S.S.R. (also: 24) |
| 35 | Czechoslovakia | 21 | Canada |
| 22 | Denmark | 22 | Denmark |
| 85 | Ecuador | 23 | German Democratic Republic |
| 66 | Egypt | 25 | Federal Republic of Germany |
| 25 | Federal Republic of Germany | 26 | Australia |
| 81 | Fiji | 27 | Argentina |
| 19 | Finland | 28 | Austria |
| 04 | France | 29 | Belgium |
| 73 | Galapagos Islands | 30 | Bermuda |
| 23 | German Democratic Republic | 31 | Bolivia |
| 36 | Greece | 32 | Chile |
| 37 | Hong Kong | 33 | Colombia |
| 38 | Hungary | 34 | Costa Rica |
| 05 | India | 35 | Czechoslovakia |
| 06 | Indonesia | 36 | Greece |
| 39 | Ireland | 37 | Hong Kong |
| 40 | Israel | 38 | Hungary |
| 07 | Italy | 39 | Ireland |
| 08 | Japan | 40 | Israel |
| 41 | Korea | 41 | Korea |
| 42 | Kuwait | 42 | Kuwait |
| 68 | Lesotho | 43 | Malaysia |
| 43 | Malaysia | 44 | Malta |
| 78 | Maldiv Islands | 45 | Mauritius |
| 44 | Malta | 46 | Netherlands |
| 82 | Mariana Islands (Guam & Saipan) | 47 | Norway |
| 45 | Mauritius | 48 | New Zealand |
| 09 | Mexico | 49 | Papua New Guinea |
| 65 | Namibia | 50 | Philippines |
| 46 | Netherlands | 51 | Portugal |
| 75 | Netherlands Antilles | 52 | Rwanda |
| 48 | New Zealand | 53 | Singapore |
| 47 | Norway | 54 | Sweden |
| 80 | Panama | 55 | Taiwan |
| 49 | Papua New Guinea | 56 | Trinidad & Tobago |
| 10 | People's Republic of China | 57 | Turkey |
| 67 | Peru | 58 | Yugoslavia |
| 50 | Philippines | 59 | Zimbabwe |
| 11 | Poland | 60 | Romania |
| 51 | Portugal | 61 | Society Islands (Tahiti) |
| 77 | Puerto Rico | 62 | Uruguay |
| 70 | Reunion Island | 63 | Sudan |
| 60 | Romania | 64 | Botswana |
| 52 | Rwanda | 65 | Namibia |
| 89 | Sea borne (Atlantic Ocean) | 66 | Egypt |
| 87 | Sea borne (Caribbean) | 67 | Peru |
| 88 | Sea borne (Gulf of Mexico) | 68 | Lesotho |
| 53 | Singapore | 69 | Tanzania |
| 61 | Society Islands (Tahiti) | 70 | Reunion Island |
| 13 | South Africa | 71 | Barbados |
| 99 | Space borne | 73 | Galapagos Islands |
| 14 | Spain | 74 | Canary Islands |
| 63 | Sudan | 75 | Netherlands Antilles |
| 54 | Sweden | 77 | Puerto Rico |
| 18 | Switzerland | 78 | Maldiv Islands |
| 55 | Taiwan | 79 | Cuba |
| 69 | Tanzania | 80 | Panama |
| 56 | Trinidad & Tobago | 81 | Fiji |
| 84 | Tunisia | 82 | Mariana Islands (Guam & Saipan) |
| 57 | Turkey | 83 | Ascension Island |
| 20 | U.S.S.R. (also: 24) | 84 | Tunisia |
| 12 | United Kingdom (also: 15, 72) | 85 | Ecuador |
| 16 | United States (also: 76) | 87 | Sea borne (Caribbean) |
| 62 | Uruguay | 88 | Sea borne (Gulf of Mexico) |
| 17 | Venezuela | 89 | Sea borne (Atlantic Ocean) |
| 58 | Yugoslavia | 98 | Air borne |
| 59 | Zimbabwe | 99 | Space borne |

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Amateur Observation Network Data on Comet Giacobini-Zinner



DATE: 13 APR 1985

DATE: 13 APR 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|------|-----|-----|----|------|-------------|-------|
| 13.47 | 801001 | 15.5 | S | SA 57 | 0.3 | 1 | | | 0.610 | C | 16.0 | 375 | 7.0 | Y | 1 | Morris,C.S | |
| 13.47 | 801002 | 15.5 | V | SA 57 | 0.3 | 1 | | | 0.61 | C | 16 | 375 | | Y | 4 | Edberg,S | A |

NOTE A Comet sufficiently stellar for in-focus comparison. Observation made by C. Morris and S. Edberg.

DATE: 18 MAY 1985

DATE: 18 MAY 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-------|----|--------|-----------|----|------|----|-------|-----|------|-----|-----|----|------|-------------|-------|
| 18.35 | 801003 | 13.4 | S | SX CYG | 0.5 | 3 | | | 0.610 | C | 16.0 | 375 | 6.5 | Y | 1 | Morris,C.S | A |
| 18.36 | 801004 | 14.2 | S | SX CYG | 0.5 | 2 | | | 0.610 | C | 16.0 | 244 | 6.5 | Y | 1 | Morris,C.S | B |
| 18.39 | 801005 | >13.0 | S | SX CYG | | | | | 0.256 | N | 4.5 | 156 | 6.5 | Y | 1 | Morris,C.S | C |

NOTE A Hint of stellar condensation, m2 = 16:.
NOTE B DC uncertain.
NOTE C Comet not seen.

DATE: 20 MAY 1985

DATE: 20 MAY 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-------|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 20.31 | 801006 | >12.5 | ? | | | | | | 0.317 | N | 5.6 | 110 | 6.5 | Y | 1 | Bortle,J.E | A |

NOTE A Comet not seen.

DATE: 26 MAY 1985

DATE: 26 MAY 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|--------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|
| 26.46 | 801007 | 13.2 | S | PW VUL | | 4 | | | 0.200 | N | 6 | 122 | 6.5 | Y | 16 | Hale,A |
| 26.47 | 801008 | 13.2 | S | N VULL | 0.7 | 4 | | | 0.200 | N | 6.0 | 117 | 7.0 | Y | 2 | Morris,C.S |

DATE: 30 MAY 1985

DATE: 30 MAY 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 30.31 | 801009 | 12.0 | S | AAVSO | 1.5 | 3 | | | 0.317 | N | 5.6 | 88 | 6.0 | Y | 1 | Bortle,J.E | A |

NOTE A DC not certain. At 110x there is a very dense, tiny condensation of magnitude 13.5 or so. The surrounding coma is of much lower surface brightness.

DATE: 8 JUN 1985

DATE: 8 JUN 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|--------|-----------|----|------|----|-------|-----|----|-----|-----|----|------|-------------|
| 8.30 | 801010 | 12.9 | S | PW VUL | | 3 | | | 0.200 | N | 6 | 122 | 6.5 | Y | 5 | Hale,A |

DATE: 11 JUN 1985

DATE: 11 JUN 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|--------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 11.15 | 801011 | 11.2 | S | AAVSO | 2.6 | 3 | | | 0.317 | N | 5.6 | 88 | 6.5 | Y | 1 | Bortle,J.E | A |
| 11.99 | 801012 | 11.9 | S | SS CYG | | 5 | | | 0.203 | SC | 10 | 80 | 6 T | Y | 3 | Comello,C | |

NOTE A At 68x the coma is seen to contain a very dense and small central condensation about 0.7 arc min. in diameter. At 170x this condensation is much smaller but does not contain any stellar or sharp nucleus.

DATE: 12 JUN 1985

DATE: 12 JUN 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 12.29 | 801013 | 11.9 | M | NPS | 1.2 | 4 | | | 0.256 | N | 4.5 | 67 | 7.0 | Y | 3 | Morris,C.S | |
| 12.29 | 801014 | 11.9 | M | NPS | 1.2 | 4 | | | 0.256 | N | 4.5 | 111 | 7.0 | Y | 3 | Morris,C.S | A |

NOTE A Hint of stellar condensation.

DATE: 14 JUN 1985

DATE: 14 JUN 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | |
|----------|--------|------|----|--------|-----------|----|------|----|-------|-----|----|-----|-----|----|------|-------------|-----------|
| 14.97 | 801015 | 11.7 | S | SS CYG | | 4 | | | 0.203 | SC | 10 | 80 | 6 | T | Y | 3 | Comello,G |
| 14.98 | 801016 | 12.0 | S | SS CYG | 1 | 2 | | | 0.254 | JB | 6 | 73 | 6 | T | N | 2 | Bouma,R.J |

DATE: 15 JUN 1985

DATE: 15 JUN 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-------|----|--------|-----------|----|------|----|-------|-----|-----|-----|------|----|------|-------------|-------|
| 15.16 | 801017 | 11.2 | S | AAVSO | 1.3 | 3 | | | 0.317 | N | 5.6 | 88 | 6.0 | Y | 1 | Bortle,J.E | A |
| 15.279 | 801018 | 12.3 | S | SS CYG | 1.2 | 2 | | | 0.15 | R | 5 | 62 | 6.5 | Y | 2 | Morrison,W | B |
| 15.96 | 801019 | 12.0 | S | SS CYG | | 4 | | | 0.203 | SC | 10 | 80 | 5.5T | N | 3 | Comello,G | |
| 15.98 | 801020 | 11.5: | S | V CAS | 1.5 | | | | 0.254 | JB | 6 | 59 | 5.5T | Y | 2 | Bus,E.P | C |

NOTE A At 170x the central region of the coma is quite dense but is no longer clearly offset from the surrounding coma. It lacks any stellar nucleus.

NOTE B (Observer indicated uncertainty in limiting magnitude. Ed.)

NOTE C Involved with 2 stars.

DATE: 16 JUN 1985

DATE: 16 JUN 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|----|----|-------|-----------|----|----------|-------|-----|------|-----|-----|----|------|-------------|-------|
| 16.28 | 801021 | | | | 0.4 | 7 | 0.07 230 | 1.549 | C | 13.5 | | 7.0 | Y | 4 | Morris,C.S | A |

NOTE A Magnification used uncertain, 600x? Tail rather broad.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|-----|--------|------|-----|------|-------------|-------|
| 16.474 | 803001 | 0.10 | 0.33 | N | 4.5 | 155 | 15 | 7.0 | 1 | Fabre,R | A |

NOTE A Tail PA 100 deg. Southern section of tail longer than northern section.

DATE: 17 JUN 1985

DATE: 17 JUN 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AO# | ml | MM | Chart | Coma size | DC | Tail | PA | AP | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 17.31 | 801022 | 11.9 | M | NPS | 1.2 | 5 | 0.03 | 230 | 0.406 | N | 5.0 | 64 | 7.0 | Y | 5 | Morris,C.S | A |
| 17.31 | 801023 | 11.9 | M | NPS | 1.2 | 5 | 0.03 | 230 | 0.406 | N | 5.0 | 156 | 7.0 | Y | 5 | Morris,C.S | A |
| 17.94 | 801024 | 11.6 | S | AAVSO | 1.6 | 4 | | | 0.305 | N | 5.0 | 60 | | | | Zanotta,M | B |

NOTE A Short stubby tail.

NOTE B The coma was circular at 60x, but at 94x, 150x and 250x it appeared fan-shaped with axis on PA 225 deg.

DATE: 18 JUN 1985

DATE: 18 JUN 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|--------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 18.31 | 801025 | 11.8 | M | NPS | 1.2 | 5 | 0.03 | 230 | 0.406 | N | 5.0 | 64 | 7.0 | Y | 5 | Morris,C.S | A |
| 18.31 | 801026 | 11.8 | M | NPS | 1.2 | 5 | 0.03 | 230 | 0.406 | N | 5.0 | 156 | 7.0 | Y | 5 | Morris,C.S | A |
| 18.37 | 801027 | 11.7 | S | SS CYG | | | | | 0.200 | N | 6 | 61 | 6 | Y | 29 | Hale,A | |
| 18.85 | 801028 | 12.4 | S | SS CYG | | 2 | | | 0.203 | N | 6 | 116 | 6.2 | Y | | Pearce,A | |

NOTE A Coma diameter uncertain.

DATE: 19 JUN 1985

DATE: 19 JUN 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 19.31 | 801029 | 10.8 | S | AAVSO | 2.6 | 4 | | | 0.317 | N | 5.6 | 68 | 6.5 | Y | 1 | Bortle, J.E | A |

NOTE A At 110x, the coma appears more highly condensed (DC 6) than at 68x, with a very dense, small core. At 170x there is a tiny, strikingly sharp but not stellar nucleus only a few arc sec. in diameter surrounded by a dense, condensed region.

DATE: 20 JUN 1985

DATE: 20 JUN 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 20.95 | 801030 | 11.5 | S | AAVSO | 2.2 | 4 | | | 0.305 | N | 5.0 | 60 | | | | Zanotta,M | A |

NOTE A At 94x (June 20.96 UT) I found DC 5, and with 150x I was able to see a star-like nuclear region. At 300x I found a central condensation whose diameter was 0.5 arc min.

DATE: 21 JUN 1985

DATE: 21 JUN 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | m1 | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|
| 21.00 | 801031 | 11.5 | S | AAVSO | 1.9 | | | | 0.254 | N | 4.5 | 71 | | | | Zanotta,M |

DATE: 22 JUN 1985

DATE: 22 JUN 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | m1 | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 22.28 | 801032 | 11.7 | S | NPS | 2 | 2 | | | 0.254 | N | 4 | 111 | | | | Green,D.W.E | A |
| 22.29 | 801033 | 11.4 | S | NPS | 1.9 | | | | 0.256 | N | 4.5 | 45 | 5.0 | Y | 6 | Morris,C.S | B |
| 22.98 | 801034 | 11.5 | S | AAVSO | 1.9 | 3 | | | 0.305 | N | 5.0 | 60 | | | | Zanotta,M | C |

NOTE A Coma diameter approximate.

NOTE B Poor night; comet involved with stars.

NOTE C The comet appeared diffuse with central condensation fainter than on 850620, but with more obvious star-like nuclear region of magnitude 13.5. The coma appeared elongated (60x) and there was a PROBABLE little tail or coma elongation (2 arc min.) at PA 225 deg. (250x).

DATE: 23 JUN 1985

DATE: 23 JUN 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|--------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 23.33 | 801035 | 10.7 | S | SS CYG | 5.0 | 2 | | | 0.256 | N | 4.5 | 45 | 7.0 | Y | 7 | Morris,C.S | A |
| 23.33 | 801036 | 11.4 | S | SS CYG | 0.6 | 6 | | | 0.256 | N | 4.5 | 156 | 7.0 | Y | 7 | Morris,C.S | |
| 23.36 | 801037 | 11.0 | S | SS CYG | 2.1 | 5 | | | 0.256 | N | 4.5 | 67 | 7.0 | Y | 7 | Morris,C.S | |
| 23.36 | 801038 | 11.2 | S | SS CYG | 1.1 | 5 | | | 0.256 | N | 4.5 | 111 | 7.0 | Y | 7 | Morris,C.S | |
| 23.96 | 801039 | 11.3 | S | AAVSO | 1.5 | 3 | | | 0.305 | N | 5.0 | 60 | | | | Zanotta,M | B |

NOTE A Small l min. condensation surrounded by very faint outer coma seen only at low power. There was a suggestion of a stellar condensation. Coma was elongated toward PA 255. Lumicon comet filter made the diffuse outer coma easier to see.

NOTE B The comet appeared diffuse and circular (60x) with central condensation (0.3 arc min. at 250x) and possible star-like nuclear region. At 94x I found DC 4.

DATE: 24 JUN 1985

DATE: 24 JUN 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | ACN# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 24.98 | 801040 | 11.3 | S | AAVSO | 1.4 | 4 | | | 0.305 | N | 5.0 | 60 | | | | Zanotta,M | A |

NOTE A The comet appeared circular (60x). At 94x I found a star-like nuclear region of magnitude 13.8. At the same power I found DC 5.

DATE: 26 JUN 1985

DATE: 26 JUN 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|--------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 26.01 | 801041 | 11.2 | S | AAVSO | 1.8 | 5 | | | 0.305 | N | 5.0 | 60 | | | | Zanotta,M | A |
| 26.04 | 801042 | 11.3 | S | AAVSO | 1.8 | 3 | | | 0.254 | N | 4.5 | 46 | | | | Zanotta,M | |
| 26.44 | 801043 | 10.9 | M | SS CYG | 3.4 | 5 | | | 0.256 | N | 4.5 | 45 | 7.0 | Y | 7 | Morris,C.S | B |
| 26.44 | 801044 | | | | 2.3 | 6 | | | 0.256 | N | 4.5 | 67 | 7.0 | Y | 7 | Morris,C.S | |

NOTE A Circular coma with a star-like nuclear region of magnitude 13.0 (94x). At 300x I found DC 5/.

NOTE B Outer coma not as obvious.

DATE: 28 JUN 1985

DATE: 28 JUN 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|--------|-----------|----|------|----|------|-----|----|-----|-----|----|------|-------------|
| 28.278 | 801045 | 11.6 | S | SS CYG | 1.0 | | | | 0.15 | R | 5 | 62 | | Y | 3 | Morrison,W |

DATE: 30 JUN 1985

DATE: 30 JUN 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|--------|-----------|----|------|----|------|-----|----|-----|-----|----|------|-------------|
| 30.314 | 801046 | 11.6 | S | SS CYG | 1.4 | 2 | | | 0.15 | R | 5 | 62 | | Y | 3 | Morrison,W |

DATE: 5 JUL 1985

DATE: 5 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|-------|-----------|----|------|-----|-------|-----|----|-----|-----|----|------|-------------|
| 5.97 | 801047 | 10.6 | S | AAVSO | 1.4 | 3 | 0.03 | 225 | 0.298 | N | 5 | 62 | | | 1 | Keitch,G.S |

DATE: 6 JUL 1985

DATE: 6 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | |
|----------|--------|------|----|-------|-----------|----|------|-----|-------|-----|----|-----|-----|----|------|-------------|-------------|
| 6.890 | 801048 | 9.7 | S | AAVSO | 5.0 | 4 | | | 0.080 | B | | 15 | 6.2 | Y | 3 | Haver,R | |
| 6.91 | 801049 | 10.4 | S | V CAS | | 3 | | | 0.254 | JB | 6 | 49 | 6 | Y | 2 | Feijth,H | |
| 6.91 | 801050 | 10.5 | S | V CAS | | 3 | | | 0.254 | JB | 6 | 38 | 6 | Y | 4 | Comello,G | |
| 6.92 | 801051 | 10.5 | S | | 1.5 | 3 | 0.04 | 243 | 0.400 | N | 5 | 81 | 6.0 | Y | 2 | Merlin,J.C | |
| 6.96 | 801052 | 10.6 | S | AAVSO | 1.6 | 4 | 0.03 | 256 | 0.298 | N | 5 | 62 | | | 1 | Keitch,G.S | |
| 6.97 | 801053 | 10.5 | S | V CAS | 1.3 | 7 | | | 0.250 | N | 10 | 100 | 6 | CT | Y | 1 | van Loo,F.R |

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|-----|--------|------|-----|------|-------------|-------|
| 6.938 | 803002 | 0.09 | 0.40 | N | 5.0 | 254 | 10 | 6.0 | 2 | Merlin,J.C | A |

NOTE A Tail at PA 243 deg.

DATE: 7 JUL 1985

DATE: 7 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|--------|-----------|----|------|----|-------|-----|----|-----|------|----|------|-------------|-------|
| 7.03 | 801054 | 10.3 | S | V CAS | | 3 | | | 0.203 | SC | 10 | 50 | 6 | Y | 4 | Comello,G | |
| 7.154 | 801055 | 11.0 | S | SS CYG | 1.9 | 4 | | | 0.15 | R | 5 | 62 | 6.1 | Y | 3 | Morrison,W | |
| 7.26 | 801056 | 10.7 | S | R CAS | | | | | 0.200 | N | 6 | 61 | 6 | Y | 11 | Hale,A | |
| 7.924 | 801057 | 10.8 | B | SA 19 | 4.2 | 1 | | | 0.125 | R | 6 | 35 | | Y | 1 | Guthier,O | A |
| 7.96 | 801058 | 10.4 | S | V CAS | 1.5 | 7 | | | 0.250 | N | 10 | 100 | 6.5T | Y | 1 | van Loo,F.R | |

NOTE A Condensation about 1.0 arc min.

DATE: 8 JUL 1985

DATE: 8 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|--------|-----------|----|------|-----|-------|-----|------|-----|-----|----|------|-------------|-------|
| 8.130 | 801059 | 11.0 | S | SS CYG | 1.4 | 5 | | | 0.15 | R | 5 | 62 | | Y | 3 | Morrison,W | |
| 8.24 | 801060 | 10.2 | M | NPS | 2.2 | 5 | 0.03 | 225 | 0.256 | N | 4.5 | 67 | 6.0 | Y | 6 | Morris,C.S | A |
| 8.889 | 801061 | | | | 2 | 1 | | | 0.200 | SC | 10.0 | 77 | 5.0 | Y | | Maraziti,A | |
| 8.92 | 801062 | 10.4 | S | | 2.5 | 3 | 0.08 | 243 | 0.400 | N | 5 | 81 | 6.0 | Y | 2 | Merlin,J.C | |
| 8.96 | 801063 | 10.3 | S | V CAS | | 4 | | | 0.203 | SC | 10 | 50 | 6 | Y | 4 | Comello,G | |

NOTE A SS Cyg chart also used as comparison star source.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|----|--------|------|-----|------|-------------|-------|
| 8.903 | 803003 | 0.07 | 0.40 | N | 5 | 254 | 10 | 6.0 | 2 | Merlin,J.C | A |

NOTE A Jet at PA 125 deg., tail at PA 243 deg.

DATE: 9 JUL 1985

DATE: 9 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes | |
|----------|--------|------|----|-------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------------|---|
| 9.11 | 801064 | 10.4 | S | AAVSO | 2.2 | 6 | | | 0.317 | N | 5.6 | 68 | 5.5 | Y | 1 | Bortle,J.E | A | |
| 9.89 | 801065 | 10.4 | S | | 2.0 | 3 | 0.02 | 268 | 0.400 | N | 5 | 81 | 6.0 | Y | 2 | Merlin,J.C | | |
| 9.93 | 801066 | 10.2 | S | V CAS | 1 | 6 | | | 0.250 | N | 10 | 100 | 6 | CT | Y | 1 | van Loo,F.R | B |
| 9.96 | 801067 | 10.3 | S | V CAS | | 3 | | | 0.203 | SC | 10 | 50 | 6.5 | Y | 4 | Comello,G | | |

NOTE A At 110x and 170x a nucleus, stellar or nearly so, is noted at the center of condensation. No internal structure is noted surrounding the nucleus.

NOTE B Asymmetric coma.

DATE: 10 JUL 1985

DATE: 10 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-------|----|-------|-----------|----|------|-----|-------|-----|----|-----|-------|----|------|-------------|-------|
| 10.93 | 801068 | 10.2: | S | V CAS | | | | | 0.156 | N | 5 | 45 | 4.5TC | N | 5 | Bouma,R.J | |
| 10.93 | 801069 | 10.1 | S | V CAS | 2 | 6 | | | 0.250 | N | 10 | 100 | 6.5T | Y | 1 | van Lee,F.R | |
| 10.95 | 801070 | 10.2 | S | V CAS | 2 | 6 | | | 0.100 | B | | 14 | 6.5T | Y | 1 | van Lee,F.R | |
| 10.96 | 801071 | 10.3 | S | AAVSO | 1.5 | 4 | 0.03 | 262 | 0.298 | N | 5 | 62 | | | 1 | Keitch,G.S | A |

NOTE A Also 1 arc min. jet PA 14 deg.; 4 arc min. jet PA 198 deg.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|-------|-----|-----|--------|------|-----|------|-------------|-------|
| 10.927 | 803004 | 0.75 | 0.114 | N | 8.7 | 50, 67 | 30 | | 2 | Gomez,T.L | A |

NOTE A Very diffuse, no traces of tail.

SUB-NETWORK: PHOTOGRAPHY

| Date(UT) | AON# | FL | f/ | Ap | FOV | ExpM | Emulsion | ISO | Hyp | Gdng | Id/Typ | Site | Observer(s) |
|----------|--------|-------|-----|-------|-----------|-------|------------|-----|-----|------|--------|------|-------------|
| 10.674 | 805101 | 0.300 | 1.5 | 0.203 | 6.9 x 4.6 | 20.00 | Kodak 2415 | | Y | S | 1/P | 1 | Nassr,J |

DATE: 11 JUL 1985

DATE: 11 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|------|-----|-----|----|------|-------------|-------|
| 11.24 | 801072 | 9.4 | S | V CAS | 2.5 | 2 | | | 0.20 | SC | 10 | 81 | 5.5 | Y | 1 | Spratt,C.E | A |
| 11.87 | 801073 | 8.2 | B | AA | 4 | 6 | | | 0.110 | B | | 20 | | | | Chernis,K | |
| 11.931 | 801074 | 9.8 | S | V CAS | 2.5 | 2 | | | 0.200 | SC | 10.0 | 44 | 5.2 | Y | | Maraziti,A | |
| 11.986 | 801075 | 11.0 | B | | 2.1 | 2 | | | 0.125 | R | 6 | 35 | | Y | 1 | Guthier,O | B |

NOTE A Distinct nucleus. (Observer indicated uncertainty in DC value. Ed.)

NOTE B Condensation about 1.0 arc min.

DATE: 12 JUL 1985

DATE: 12 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|---------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 12.125 | 801076 | 10.9 | S | SS CYG | 1.6 | 4 | | | 0.15 | R | 5 | 62 | 6.0 | Y | 3 | Morrison,W | |
| 12.22 | 801077 | | | | | | | | 0.317 | N | 5.6 | 170 | | | | Bortle,J.E | A |
| 12.25 | 801078 | 10.0 | M | NPS | 3.2 | 5 | | | 0.256 | N | 4.5 | 67 | 6.0 | Y | 6 | Morris,C.S | |
| 12.25 | 801079 | 9.7 | S | V CAS | 2.0 | 4 | | | 0.20 | SC | 10 | 81 | 6.0 | Y | 1 | Spratt,C.E | B |
| 12.87 | 801080 | 8.3 | B | AA | 4 | 6 | | | 0.110 | B | | 20 | | | | Chernis,K | |
| 12.924 | 801081 | 10.7 | S | | 1.0 | 6 | | | 0.205 | N | 4.5 | 52 | 6.0 | Y | 1 | Hasubick,W | C |
| 12.925 | 801082 | 9.7 | B | SAO | 2.7 | 4 | | | 0.203 | SC | 10 | 52 | 5.0 | Y | 2 | Bottger,B | |
| 12.928 | 801083 | 11.0 | B | SA 19 | 2.5 | 1 | | | 0.125 | R | 6 | 35 | | Y | 1 | Guthier,O | D |
| 12.934 | 801084 | 10.6 | S | V CAS D | 2.5 | 2 | | | 0.152 | N | 5 | 44 | | Y | 2 | Moeller,M | E |
| 12.938 | 801085 | 10.5 | S | | 2.1 | 7 | | | 0.205 | N | 4.5 | 52 | 6.0 | Y | 1 | Koch,V | |
| 12.94 | 801086 | 9.3 | S | | 2.2 | 5 | | | 0.203 | SC | 10 | 63 | 5.0 | Y | 2 | Kammerer,A | F |
| 12.950 | 801087 | 9.2: | S | SAO | 1.5 | 4 | | | 0.203 | SC | 10 | 62 | 5.5 | Y | 3 | Linder,J | |
| 12.95 | 801088 | 9.9 | S | | 3.0 | 3 | 0.03 | 267 | 0.100 | R | 15 | 60 | 6.0 | Y | 3 | Merlin,J.C | |
| 12.99 | 801089 | 9.7 | S | V CAS | | 3 | | | 0.254 | JB | 6 | 49 | 6 | Y | 2 | Feijth,H | |

NOTE A Using 170x there is a fairly hard stellar nucleus which may not be singular. This nucleus occasionally appears "clumpy" in nature. Material surrounding the nucleus is bright and dense with its major portion to the southwest of the nucleus.

NOTE B Very diffuse.

NOTE C Coma diameter uncertain.

NOTE D Condensation about 1.0 arc min.

NOTE E Hazy. (Observer gave limit as 11.9. Ed.)

NOTE F Nucleus: 12 mag.; light haze. Comparison star AG +54 1606.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|----|--------|------|-----|------|-------------|-------|
| 12.938 | 803005 | 0.17 | 0.10 | R | 15 | 120 | 10 | 6.0 | 3 | Merlin,J.C | A |

NOTE A Tail at PA 267 deg. Quite different aspect from other observations. Curved feature eastward.

DATE: 13 JUL 1985

DATE: 13 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|---------|-----------|----|------|----|-------|-----|-----|-----|-------|----|------|-------------|-------|
| 13.00 | 801090 | 9.9 | S | V CAS | | 3 | | | 0.203 | SC | 10 | 50 | 6.5 | Y | 4 | Comello,G | |
| 13.02 | 801091 | 9.7 | S | | | | | | 0.115 | N | 8 | 45 | 6.0 | Y | 3 | Merlin,J.C | |
| 13.27 | 801092 | 9.3 | S | V CAS | 3.0 | 5 | | | 0.20 | SC | 10 | 81 | 5.7 | Y | 1 | Spratt,C.E | A |
| 13.326 | 801093 | 9.9 | M | V CAS | 1.6 | 4 | | | 0.254 | N | 4.5 | 46 | 4.5 | Y | 1 | De Young,J | B |
| 13.917 | 801094 | 10.5 | S | | 1.8 | 6 | | | 0.205 | N | 4.5 | 52 | 6.0 | Y | 1 | Hasubick,W | |
| 13.917 | 801095 | 10.3 | S | | 2.8 | 6 | | | 0.205 | N | 4.5 | 52 | 6.0 | Y | 1 | Koch,V | |
| 13.92 | 801096 | 10.2 | S | V CAS | 1 | 6 | | | 0.100 | B | | 14 | 5.5CT | Y | 1 | van Loo,F.R | |
| 13.928 | 801097 | 10.9 | B | SA 19 | 2.5 | 2 | | | 0.125 | R | 6 | 35 | | Y | 1 | Guthier,O | |
| 13.95 | 801098 | 9.4 | S | V CAS | | 3 | | | 0.254 | JB | 6 | 49 | 6 | Y | 2 | Feijth,H | |
| 13.96 | 801099 | 9.4 | S | V CAS | | 3 | | | 0.20 | SC | 10 | 50 | 6.5 | Y | 4 | Comello,G | |
| 13.97 | 801100 | 9.6 | S | V CAS | 3 | 4 | | | 0.254 | JB | 6 | 48 | 5.5T | Y | 2 | Bouma,R.J | |
| 13.97 | 801101 | 9.8 | S | | | 2 | | | 0.150 | N | 5 | 23 | 6.5 | Y | 3 | Merlin,J.C | |
| 13.971 | 801102 | 10.6 | S | V CAS D | 3 | 2 | | | 0.152 | N | 5 | 44 | | Y | 2 | Moeller,M | C |
| 13.98 | 801103 | 10.3 | S | V CAS | 2 | 4 | | | 0.254 | JB | 6 | 48 | 5.5T | Y | 2 | Bus,E.P | |

NOTE A Distinct nucleus, diffuse.
 NOTE B Coma possibly parabolic shaped.
 NOTE C (Observer gave limit as 12.1. Ed.)

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|-------|-----|-----|--------|------|-----|------|-------------|-------|
| 13.115 | 803006 | | 0.256 | N | 6.0 | 40 | | | 3 | Gallego,J | A |
| 13.915 | 803007 | 0.17 | 0.257 | N | 4.6 | 47,148 | 15 | 6.5 | 3 | Merlin,J.C | B |

NOTE A Field of view 60 arc min. at 40x. Mag. 10.1, coma dia. about 1 arc min. Central condensation clearly visible. Observation made by S. Pedraz and J. Gallego. (Duration not indicated. Time of observation is assumed to be end time. Ed.)
 NOTE B Tail at PA 220 deg. Diffuse extensions toward north and south/southeast. (Additional note grammatically undecipherable. Ed.)

DATE: 14 JUL 1985

DATE: 14 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-------|----|-------|-----------|-----|------|-----|-------|-----|------|-----|-----|----|------|-------------|-------|
| 14.040 | 801104 | 10.0: | ? | L3? | 2.0 | 3 | | 225 | 0.203 | SC | 10 | 50 | 4.5 | Y | 1 | Dietrich,M | A |
| 14.063 | 801105 | 11.0: | B | | 5 | | | | 0.15 | N | 5 | 38 | | Y | 1 | Velasco,P | B |
| 14.28 | 801106 | 9.2 | S | V CAS | 2.5 | 3 | | | 0.20 | SC | 10 | 81 | 6.0 | Y | 1 | Spratt,C.E | C |
| 14.455 | 801107 | 10.4 | B | | 3.0 | 2.5 | | | 0.063 | R | 13 | 34 | 5.9 | Y | 1 | Zische,E | |
| 14.938 | 801108 | 9.7 | S | V CAS | 2 | 2 | | | 0.200 | SC | 10.0 | 44 | 5.3 | Y | | Maraziti,A | |
| 14.94 | 801109 | | | | 2.8 | 5 | | | 0.254 | N | 4.5 | 46 | | | | Zanotta,M | D |
| 14.945 | 801110 | 9.5 | S | | 4.5 | 4 | | | 0.080 | B | | 15 | 6.6 | Y | 4 | Haver,R | |
| 14.95 | 801111 | 9.8 | S | AAVSO | 1.3 | 5 | 0.03 | 180 | 0.298 | N | 5 | 62 | | | | Keitch,G.S | E |
| 14.95 | 801112 | 9.7 | S | AAVSO | 3.3 | | | | 0.080 | B | | 20 | | | | Keitch,G.S | |
| 14.97 | 801113 | 9.4 | S | T CAS | | 3 | | | 0.203 | SC | 10 | 80 | 6 | Y | 4 | Comello,G | |
| 14.99 | 801114 | 9.5 | S | V CAS | 1.3 | 3 | | | 0.254 | JB | 6 | 49 | 6 | Y | 2 | Feijth,H | |

NOTE A Distinctly elongated. (Translated by IHW staff. Observer indicated "A" method [Argelander?]. Ed.)
 NOTE B (Coma diameter uncertain. Observation made by E. Velasco and P. Velasco. Ed.)
 NOTE C Distinct nucleus; coma V-shaped. (Observer indicated uncertainty in limiting magnitude. Ed.)
 NOTE D The comet was circular and diffuse, with a star-like central condensation.
 NOTE E Broad dust tail 0.03 deg. long PA 180 deg.; gas tail 0.05 deg. long PA 242 deg. Central cond [sic] 27 arc sec. diameter offset to NE.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|----|--------|------|-----|------|-------------|-------|
| 14.057 | 803008 | | 0.15 | N | 5 | 38 | 15 | | 1 | Velasco,P | A |

NOTE A Field 2 deg. at 38x. "False" nucleus visible. Observation made by E. Velasco and P. Velasco.

SUB-NETWORK: PHOTOGRAPHY

| Date(UT) | AON# | FL | f/ | Ap | FOV | ExpM | Emulsion | ISO | Hyp | Gdng | Id/Typ | Site | Observer(s) | Notes |
|----------|--------|-------|-----|-------|-----------|-------|------------|-----|-----|------|--------|------|--------------|-------|
| 14.066 | 805102 | 0.300 | 1.5 | 0.200 | 6.9 x 4.6 | 10.00 | Kodak 2415 | | Y | S | 2/S | 2 | Genebriera,J | A |
| 14.078 | 805103 | 0.300 | 1.5 | 0.200 | 6.9 x 4.6 | 10.00 | Kodak 2415 | | Y | S | 3/S | 2 | Genebriera,J | A |

NOTE A (Observer's image identifier is followed by suffix A. Ed.)

DATE: 15 JUL 1985

DATE: 15 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-------|----|-------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 15.00 | 801115 | 9.5 | S | AAVSO | 3.3 | | | | 0.050 | B | | 10 | | | 1 | Keitch,G.S | |
| 15.45 | 801116 | 10.0 | M | R CAS | | 5 | | | 0.200 | N | 6 | 61 | 6.5 | Y | 5 | Hale,A | |
| 15.63 | 801117 | 9.5 | S | AAVSO | 3 | 3 | | | 0.13 | N | 6.3 | 44 | 5.5 | Y | | Hayashi,A | |
| 15.928 | 801118 | 10.9 | B | SA 19 | 2.8 | 2 | | | 0.125 | R | 6 | 50 | | Y | 1 | Guthier,O | A |
| 15.958 | 801119 | 10.0: | ? | 13? | 2.0 | 3 | | 240 | 0.203 | SC | 10 | 50 | 4.7 | Y | 1 | Dietrich,M | B |
| 15.969 | 801120 | 10.8 | B | SA 19 | 3.8 | 3 | | | 0.125 | R | 6 | 35 | | Y | 1 | Guthier,O | C |

NOTE A Inner coma elliptical, DC 3-4. (Observer gave limit as 13.5. Ed.)

NOTE B (Observer indicated "A" method [Argelander?]. Ed.)

NOTE C (Observer gave limit as 13.2. Ed.)

DATE: 16 JUL 1985

DATE: 16 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 16.136 | 801121 | 10.6 | S | V CAS | 1.9 | 4 | | | 0.15 | R | 5 | 62 | 6.1 | Y | 3 | Morrison,W | |
| 16.96 | 801122 | 9.6 | S | AAVSO | 3.2 | | | | 0.080 | B | | 20 | | | 1 | Keitch,G.S | |
| 16.96 | 801123 | 9.9 | S | AAVSO | 2.2 | 6 | 0.08 | 225 | 0.298 | N | 5.0 | 53 | | | 1 | Keitch,G.S | A |

NOTE A Gas tail 0.08 deg. long PA 225 deg., curved tail 0.06 deg. long PA 288 deg. for 2 arc min., then 1.5 arc min. in PA 268 deg.

DATE: 17 JUL 1985

DATE: 17 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|---------|-----------|----|------|-----|-------|-----|-----|-----|------|----|------|-------------|-------|
| 17.00 | 801124 | 9.4 | S | AAVSO | 3.6 | | | | 0.050 | B | | 10 | | | 1 | Keitch,G.S | |
| 17.17 | 801125 | 9.9 | S | AAVSO | 2.7 | 6 | | | 0.317 | N | 5.6 | 68 | 6.5 | Y | 1 | Bortle,J.E | A |
| 17.17 | 801126 | 9.3 | S | AAVSO | 5 | 3 | | | 0.080 | B | | 20 | 6.5 | Y | 1 | Bortle,J.E | |
| 17.170 | 801127 | 10.6 | S | V CAS | 1.9 | 5 | | | 0.15 | R | 5 | 62 | 6.3 | Y | 3 | Morrison,W | |
| 17.24 | 801128 | 9.1 | S | NPS | 8 | 2 | | | 0.080 | B | | 20 | 6.5 | Y | 6 | Morris,C.S | |
| 17.24 | 801129 | 9.4 | M | NPS | 3 | 5 | 0.03 | 240 | 0.256 | N | 4.5 | 45 | 6.5 | Y | 6 | Morris,C.S | B |
| 17.306 | 801130 | 9.8 | M | V CAS | 2.1 | 3 | | | 0.254 | N | 4.5 | 46 | 4.5 | Y | 1 | De Young,J | |
| 17.92 | 801131 | 9.3 | S | | 2.5 | 3 | 0.09 | 240 | 0.400 | N | 5 | 81 | 6.0 | Y | 2 | Merlin,J.C | |
| 17.931 | 801132 | 10.3 | B | SA 19 | 5.3 | 2 | | | 0.125 | R | 6 | 35 | | Y | 1 | Guthier,O | C |
| 17.94 | 801133 | 9.6 | S | AAVSO | 1.9 | 5 | | | 0.305 | N | 5.0 | 60 | | | | Zanotta,M | D |
| 17.95 | 801134 | 9.1 | S | V CAS | 5 | 6 | | | 0.100 | B | | 14 | 6.5T | Y | 1 | van Loo,F.R | |
| 17.979 | 801135 | 10.1 | S | V CAS D | 3 | 4 | | | 0.152 | N | 5 | 44 | | Y | 2 | Moeller,M | E |
| 17.989 | 801136 | | | 14 | 2 | 4 | | 235 | 0.203 | SC | 10 | 50 | 5.0 | Y | 1 | Dietrich,M | |

NOTE A Using 170x there is a fairly obvious stellar or near-stellar nucleus of about magnitude 13. The major portion of the surrounding bright coma material lays south of the nucleus. There seem to be vague west and eastward pointing jets coming off the nucleus.

NOTE B Broad tail at PA 235-250 deg.

NOTE C Inner coma 1.0 arc min. (Observer gave limit as 13.5. Ed.)

NOTE D The comet was diffuse with outer coma elongated in PA 250 deg. At 94x I saw a star-like central condensation.

NOTE E (Observer gave limit as 12.5. Ed.)

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|----|--------|------|-----|------|-------------|-------|
| 17.927 | 803009 | 0.07 | 0.40 | N | 5 | 254 | 10 | 6.0 | 2 | Merlin,J.C | A |

NOTE A Jet at PA 19 deg., very diffuse.; jet at PA 138 deg.; tail at PA 240 deg., straight and well defined.

SUB-NETWORK: PHOTOGRAPHY

| Date(UT) | AON# | FL | f/ | Ap | FOV | ExpM | Emulsion | ISO | Hyp | Gdng | Id/Typ | Site | Observer(s) | Notes |
|----------|--------|-------|-----|-------|-----------|------|------------|-----|-----|------|--------|------|--------------|-------|
| 17.898 | 805104 | 0.300 | 1.5 | 0.200 | 6.9 x 4.6 | 9.00 | Kodak 2415 | | Y | S | 10/S | 2 | Genebriera,J | A |

NOTE A (Observer's image identifier is followed by suffix A. Ed.)

DATE: 18 JUL 1985

DATE: 18 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|-----|-------|-----|------|-----|------|----|------|-------------|-------|
| 18.13 | 801137 | 9.9 | S | AA | 3 | 4 | | | 0.229 | R | 12 | 96 | | | | Green,D.W.E | A |
| 18.133 | 801138 | 10.2 | S | V CAS | 2.2 | 4 | | | 0.15 | R | 5 | 62 | 6.1 | Y | 3 | Morrison,W | |
| 18.15 | 801139 | 9.6 | S | AAVSO | 3.6 | 7 | | 225 | 0.317 | N | 5.6 | 68 | 6.5 | Y | 1 | Bortle,J.E | B |
| 18.15 | 801140 | 9.2 | S | AAVSO | 5.8 | 3 | | | 0.080 | B | | 20 | 6.5 | Y | 1 | Bortle,J.E | |
| 18.22 | 801141 | 9.2 | S | NPS | 8 | 2 | | | 0.080 | B | | 20 | 7.0 | Y | 7 | Morris,C.S | |
| 18.22 | 801142 | 9.4 | M | NPS | 3 | 5 | 0.10 | 250 | 0.256 | N | 4.5 | 45 | 7.0 | Y | 7 | Morris,C.S | |
| 18.322 | 801143 | 9.5 | M | V CAS | 2.9 | 4 | | | 0.254 | N | 4.5 | 46 | 4.5 | Y | 1 | De Young,J | |
| 18.538 | 801144 | 10.1 | B | | 2.5 | | | | 0.063 | R | 13 | 34 | 5.5 | Y | 1 | Zische,E | |
| 18.910 | 801145 | 9.5 | S | V CAS | 2.5 | 2 | | | 0.200 | SC | 10.0 | 44 | 5.3 | Y | | Maraziti,A | |
| 18.92 | 801146 | 9.2 | S | V CAS | 5 | 5 | | | 0.100 | B | | 14 | 6.5T | Y | 1 | van Loo,F.R | |

NOTE A Coma diameter approximate.

NOTE B At 68x coma is large and roughly circular. Inner 15% of coma really quite bright and strongly condensed. Area of greatest condensation slightly offset to the northeast of the coma's center.

DATE: 19 JUL 1985

DATE: 19 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|-----|-----|-------|----|------|-------------|
| 19.498 | 801147 | 10.0 | B | | 2.5 | | | | 0.063 | R | 13 | 34 | 5.9 | Y | 1 | Zische,E |
| 19.92 | 801148 | 9.2 | S | V CAS | 3 | 4 | | | 0.100 | B | | 14 | 5.5CT | N | 1 | van Loo,F.R |
| 19.937 | 801149 | 9.5 | B | | 2.0 | 3 | | | 0.165 | N | 8.7 | 57 | 6.5 | Y | 1 | Bohme,D |

DATE: 20 JUL 1985

DATE: 20 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AO# | ml | MM | Chart | Coma size | DC | Tail PA | Ap | Ins | f/ | Pr | Lim | DA | Site | Observer(s) | Notes | |
|----------|--------|------|----|-------|-----------|----|---------|-----|-------|----|-----|-----|-----|------|-------------|------------|--|
| 20.02 | 801150 | 9.1 | S | AVSO | 3.6 | 5 | 0.07 | 238 | 0.080 | B | 20 | | | 1 | Keitch,G.S | A | |
| 20.02 | 801151 | 9.1 | S | AVSO | 4 | 5 | 0.04 | 230 | 0.050 | B | 10 | | | 1 | Keitch,G.S | | |
| 20.047 | 801152 | | S | 14 | 2.0 | 3 | 0.04 | 230 | 0.203 | SC | 10 | 4.8 | Y | 1 | Dietrich,M | B | |
| 20.08 | 801153 | 9.0 | S | V CAS | 3.5 | 5 | 0.08 | 233 | 0.400 | N | 5 | 6.0 | Y | 2 | Merlin,J.C | C | |
| 20.27 | 801154 | 9.5 | S | NPS | | 6 | 0.05 | | 0.20 | SC | 10 | 7 | Y | 1 | Spratt,C.E | D | |
| 20.42 | 801155 | 10.6 | S | V CAS | | 6 | | | 0.050 | B | 10 | | | 1 | Hale,A | | |
| 20.894 | 801156 | 10.6 | B | SA 19 | 4.2 | 4 | | | 0.203 | SC | 10 | | | 1 | Conte,G | | |
| 20.900 | 801157 | 10.3 | S | V CAS | 2.5 | 4 | | | 0.125 | R | 6 | 35 | Y | 1 | Guthier,O | E | |
| 20.929 | 801158 | 10.1 | S | V CAS | 2.4 | 3 | | | 0.152 | N | 5 | 44 | Y | 2 | Moeller,M | | |
| 20.94 | 801159 | 9.1 | S | | 2.5 | 4 | | | 0.114 | B | 5 | 6.0 | Y | 2 | Merlin,J.C | F | |
| 20.944 | 801160 | 10.1 | S | | 2.4 | 3 | 0.06 | 233 | 0.400 | N | 5 | 21 | Y | 1 | Gomez,T.L | G | |
| 20.95 | 801161 | 8.9 | S | USNOC | 2.5 | 5 | 0.13 | 244 | 0.080 | B | 3.7 | | | 1 | Keitch,G.S | | |
| 20.96 | 801162 | 8.9 | S | V CAS | 2 | 4 | | | 0.08 | B | 20 | 6 T | Y | 1 | Bouma,R.J | H | |
| 20.97 | 801163 | 9.5 | S | V CAS | 2 | 8 | | | 0.100 | B | 14 | 6.5 | Y | 1 | van Ioo,F.R | | |
| 20.97 | 801164 | 9.2 | S | V CAS | 2.5 | 6 | | | 0.254 | JB | 6 | 48 | Y | 2 | Bouma,R.J | I | |
| 20.981 | 801165 | | S | 14 | 2 | 5 | 0.05 | 290 | 0.203 | SC | 10 | 50 | 4.8 | Y | 1 | Dietrich,M | |

NOTE A Gas tail 0.07 deg. long PA 238 deg.; jet 0.03 deg. long PA 15 deg.

NOTE B Coma remarkably lengthened. (Translated by IHW staff. Ed.)

NOTE C Stellar nucleus, diffuse. (Translated by IHW staff. Ed.)

NOTE D 3 arc min. tail observed, with 0.200 Newtonian, direction not measured.

NOTE E (Observer gave limit as 12.6. Ed.)

NOTE F Rich-field telescope.

NOTE G 29.8 cm f/5 reflector 62x shows several tails.

NOTE H (Observer indicated uncertainty in coma diameter. Ed.)

NOTE I Beginning of tail. (Translated by IHW staff. Ed.)

SUB-NETWORK: DRAWING

| Date(UT) | AO# | Scale | Ap | Ins | f/ | Pwr(s) | Durm | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|-------|-----|-----|--------|------|-----|------|-------------|-------|
| 20.083 | 803010 | 0.08 | 0.40 | N | 5 | 254 | 10 | 6.0 | 2 | Merlin,J.C | A |
| 20.925 | 803011 | 0.07 | 0.40 | N | 5 | 254 | 5 | 6.0 | 2 | Merlin,J.C | B |
| 20.950 | 803012 | 0.9 | 0.114 | | 3.7 | 21, 28 | 16 | | 1 | Gomez,T.L | C |

NOTE A Jet at PA 82 deg.; jet at PA 228 deg.; tail at PA 253 deg., diffuse. Inner coma "half-moon" shaped.

NOTE B Jet at PA 61 deg.; jet at PA 112 deg.; tail at PA 233 deg. Diffuse extension southward. Star embedded in coma at about 10 arc sec. from nucleus at PA about 230 deg.

NOTE C Rich-field telescope used.

DATE: 21 JUL 1985

DATE: 21 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes | |
|----------|--------|------|----|---------|-----------|-----|------|-----|-------|-----|------|-----|-----|----|------|------------------|-----------|---|
| 21.05 | 801166 | 9.5 | S | V CAS | 3 | 7 | | | 0.100 | B | | 14 | 6.5 | Y | 1 | van Loo,F.R | | |
| 21.198 | 801167 | 10.3 | S | V CAS | 2.0 | 5 | 0.07 | 245 | 0.15 | R | 5 | 62 | 6.5 | Y | 3 | Morrison,W | A | |
| 21.28 | 801168 | 8.9 | S | V CAS | 3.5 | 6 | | | 0.25 | N | 4.8 | 38 | 5.7 | Y | 2 | Spratt,C.E | B | |
| 21.44 | 801169 | 9.4 | S | NPS | 6 | 2 | | | 0.080 | B | | 20 | 7.0 | Y | 8 | Morris,C.S | | |
| 21.875 | 801170 | 9.4 | S | V CAS | 3 | 4 | | | 0.200 | SC | 10.0 | 44 | 5.1 | Y | | Marziti,A | | |
| 21.875 | 801171 | 9.2 | B | | 2.0 | 4 | | | 0.127 | SC | 10 | 60 | 6.0 | Y | 1 | Hasubick,W | | |
| 21.892 | 801172 | 10.0 | S | V CAS D | 3.5 | 3 | | | 0.152 | N | 5 | 44 | | T | N | 2 | Hoeller,M | C |
| 21.894 | 801173 | 10.7 | S | V CAS | | 7 | | | 0.203 | SC | 10 | 50 | 5 | Y | | Conte,G | | |
| 21.905 | 801174 | 9.2 | S | | 4.5 | 4 | | | 0.080 | B | | 15 | 6.1 | Y | 3 | Haverer,R | | |
| 21.91 | 801175 | 8.9 | S | S35889 | 2.2 | 6 | | | 0.203 | SC | 10 | 81 | 4.5 | Y | 1 | Kammerer,A | D | |
| 21.920 | 801176 | 9.3 | B | SAO | 2 | 1.6 | | | 0.203 | SC | 10 | 62 | 6 | Y | 1 | Linder,J | E | |
| 21.931 | 801177 | | | | | 1 | | | 0.114 | N | 8.7 | 50 | 5.0 | Y | 1 | Villa,M | | |
| 21.95 | 801178 | 8.8 | S | T CAS | 3 | 6 | | | 0.156 | N | 5 | 24 | 6 | T | Y | 2 | Bouma,R.J | |
| 21.95 | 801179 | 8.9 | S | V CAS | 7 | 5 | | | 0.06 | B | | 12 | 6.5 | Y | 5 | van de Weg,R.L.W | | |
| 21.96 | 801180 | 8.8 | S | T CAS | | | | | 0.05 | B | | 10 | 6 | T | Y | 2 | Bouma,R.J | |
| 21.96 | 801181 | 9.0 | B | V CAS | | | | | 0.06 | B | | 12 | 6.5 | Y | 5 | van de Weg,R.L.W | | |
| 21.98 | 801182 | 9.5 | S | AAVSO | 1.6 | 5 | 0.03 | 250 | 0.305 | N | 5.0 | 60 | | | | Zanotta,M | F | |
| 21.990 | 801183 | 9.5 | B | SAO | 3 | 0 | 0.13 | 255 | 0.11 | R | 11 | 30 | 6.5 | Y | 1 | Adamoli,G | G | |

NOTE A Clock face method used to estimate tail PA.

NOTE B Diffuse, nucleus star-like.

NOTE C (Observer gave limit as 11.5. Ed.)

NOTE D Coma elliptical, major axis SW-NE. Coma diameter uncertain.

NOTE E Coma elliptical, size uncertain. (Observer indicated uncertainty in limiting magnitude. Ed.)

NOTE F At 60x and 94x I saw a ghostly narrow and straight tail, and at 300x I found a circular central condensation whose diameter was 0.4 arc min.

NOTE G Magnification of 70x also used.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|-------|-----|-----|--------|------|-----|------|-------------|-------|
| 21.021 | 803013 | | 0.203 | N | 6.0 | 60 | | | 1 | Gallego,J | A |
| 21.958 | 803014 | | 0.203 | N | 6.0 | 120 | 10 | 5.9 | 1 | Gomez,A | B |

NOTE A Field of view 1 deg. 5 arc min. at 60x. Mag. 9.9, coma dia. about 4 arc min. Diffuse with sharp boundary. Dim star visible behind coma. (Duration not indicated. Time of observation is assumed to be end time. Ed.)

NOTE B Field 20 arc min. Mag. 10, DC = 3, coma dia. 3 arc min. Coma very asymmetric with respect to the central condensation. The coma has a distinct peak of light in the nuclear zone, perhaps of 11 mag. An hour later, I was able to see faint stars within the coma as the comet swept across the sky. With 50x and a Lumicon nebular filter, the size of the coma appeared a little big. [sic]

DATE: 22 JUL 1985

DATE: 22 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail .FA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-----|----|-------|-----------|----|----------|-------|-----|------|-----|------|----|------|------------------|-------|
| 22.00 | 801184 | 9.5 | S | AVSO | 1.9 | 5 | | 0.254 | N | 4.5 | 46 | | | | Zanotta,M | |
| 22.02 | 801185 | 9.6 | S | AVSO | 4.3 | 4 | | 0.080 | B | | 20 | | | | Zanotta,M | |
| 22.42 | 801186 | 9.1 | S | NPS | | | | 0.080 | B | | 20 | 7.0 | Y | 8 | Morris,C,S | A |
| 22.868 | 801187 | 9.3 | B | | 2.5 | 5 | | 0.100 | B | 4.5 | 14 | 6.0 | Y | 1 | Hasubick,W | |
| 22.872 | 801188 | 9.2 | B | | 2.3 | 5 | | 0.205 | N | 4.5 | 52 | 6.0 | Y | 1 | Hasubick,W | |
| 22.889 | 801189 | 9.5 | S | V CAS | 3 | 5 | | 0.200 | SC | 10.0 | 44 | 5.5 | Y | 1 | Koch,V | |
| 22.915 | 801190 | 9.1 | S | | 4.5 | 5 | | 0.080 | B | | 15 | 6.1 | Y | 3 | Maraziti,A | |
| 22.92 | 801191 | 9.0 | S | 14 | 2.8 | 3 | 0.06 | 0.400 | N | 5 | 81 | 6.0 | Y | 2 | Haver,R | |
| 22.93 | 801193 | 9.3 | S | 14 | 4 | 3 | | 0.080 | B | 5 | 20 | 5.5C | Y | 1 | Merlin,J,C | |
| 22.95 | 801194 | 8.9 | S | V CAS | 7 | 4 | 0.25 | 0.06 | B | 5 | 12 | 6 | Y | 1 | Milani,G,A | |
| 22.95 | 801195 | 9.1 | B | V CAS | | | | 0.06 | B | | 12 | 6 | Y | 5 | van de Weg,R.L.W | |
| 22.97 | 801196 | 9.2 | S | T CAS | | 3 | | 0.203 | SC | 10 | 80 | 6 | Y | 5 | van de Weg,R.L.W | |
| 22.98 | 801197 | 9.5 | S | AVSO | 2.5 | 5 | 255 | 0.305 | N | 5.0 | 60 | 6 | Y | 3 | Comello,G | |
| 22.98 | 801197 | 9.5 | S | AVSO | 2.5 | 5 | 255 | 0.305 | N | 5.0 | 60 | 6 | Y | 3 | Zanotta,M | B |

NOTE A The comet was well visible with averted vision in a 9x60 finder.

NOTE B At 60x the coma was round and diffuse with indefinite edges. At 94x I saw a probable ghostly narrow straight tail. At 250x I found a circular central condensation whose diameter was 0.4 arc min.

DATE: 23 JUL 1985

DATE: 23 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | RON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes | |
|----------|--------|------|----|---------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-----------|--|
| 23.00 | 801198 | 9.4 | S | AAVSO | 3.5 | 4 | | | 0.080 | B | | 20 | | | | Zanotta,M | A | |
| 23.02 | 801199 | 9.4 | S | AAVSO | 2.9 | 4 | 0.05 | 252 | 0.254 | N | 4.5 | 46 | | | | Zanotta,M | B | |
| 23.185 | 801200 | 10.1 | S | V CAS | 1.8 | 6 | | | 0.15 | R | 5 | 62 | 6.5 | Y | 3 | Morrison,W | | |
| 23.81 | 801201 | 10 | S | M | 1 | | | | 0.060 | R | | 30 | | | | Solodkin,V | | |
| 23.903 | 801202 | 9.8 | B | SAL9SRO | 4.2 | 2 | | | 0.125 | R | 6 | 35 | | Y | 1 | Guthier,O | C | |
| 23.905 | 801203 | 10.1 | B | SAL9SRO | | | | | 0.125 | R | 6 | 50 | | Y | 1 | Guthier,O | | |
| 23.906 | 801204 | 10.0 | S | V CAS D | 3 | 4 | | | 0.483 | N | 4.3 | 115 | | N | 1 | Moeller,M | D | |
| 23.91 | 801205 | 8.9 | S | | 2.6 | 4 | 0.05 | 240 | 0.400 | N | 5 | 81 | 6.0 | Y | 2 | Merlin,J.C | | |
| 23.913 | 801206 | 9.4 | B | | 5.5 | 4 | | | 0.165 | N | 8.7 | 57 | 6.0 | Y | 1 | Bohme,D | | |
| 23.917 | 801207 | 10.9 | B | V CAS | 1.0 | | | | 0.11 | R | 11 | 70 | 6 | Y | 1 | Adamoli,G | | |
| 23.94 | 801208 | 9.3 | S | 14 | 4 | 4 | | | 0.080 | B | 5 | 20 | 6.5 | Y | 4 | Milani,G.A | | |
| 23.95 | 801209 | 9.5 | S | AAVSO | 2.1 | 4 | | | 0.305 | N | 5.0 | 60 | | Y | | Zanotta,M | E | |
| 23.958 | 801210 | | | 14 | 2.5 | 5 | 0.07 | 250 | 0.203 | SC | 10 | 50 | 5.5 | Y | 1 | Dietrich,M | F | |
| 23.96 | 801211 | 8.9 | S | T CAS | | | | | 0.156 | N | 5 | 36 | 6 | T | Y | 2 | Bouma,R.J | |

NOTE A The was difficult due to proximity of the bright star Beta Cas. [sic]

NOTE B I found a ghostly narrow straight tail and a central condensation of magnitude 12.0.

NOTE C Elliptical coma, inner DC 3-4.

NOTE D Cloudy. (Observer gave limit as 14. Ed.)

NOTE E The observation was very difficult due to proximity of the bright star Beta Cas. The coma was little fan-shaped, and at 94x I saw a central condensation whose diameter was 0.5 arc min. At 150x a star-like nuclear region became visible.

NOTE F Coma somewhat blended with Beta Cas. (Translated by IHW staff. Ed.)

DATE: 24 JUL 1985

DATE: 24 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | NO# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | site | Observer(s) | Notes |
|----------|--------|------|----|----------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 24.000 | 801212 | 11.0 | ? | | 1.0 | 1 | | | 0.110 | R | 6.8 | 125 | 6 | C | 1 | Lipski,P | A |
| 24.02 | 801213 | | | S V CAS | 2.2 | 7 | | | 0.300 | N | | 80 | 6 | | 3 | Zanstra,W,T | |
| 24.172 | 801214 | 10.1 | | M V CAS | 2.5 | 6 | | | 0.15 | R | 5 | 62 | 6.5 | Y | 3 | Morrison,W | |
| 24.345 | 801215 | 3.8 | | B SAO | 5.8 | 4 | | | 0.254 | N | 4.5 | 36 | 4.5 | Y | 1 | De Young,J | |
| 24.896 | 801216 | 9.3 | | B SAO | | | | | 0.125 | R | 6 | 50 | | Y | 1 | Guthier,O | B |
| 24.907 | 801217 | 9.1 | | S S21225 | 2.3 | 3 | | | 0.125 | R | 6 | 35 | | Y | 1 | Guthier,O | |
| 24.917 | 801218 | 9.0 | | B | 2.0 | 5 | | | 0.205 | N | 4.5 | 52 | 6.0 | Y | 1 | Koch,V | C |
| 24.927 | 801219 | 8.9 | | B | 1.4 | 5 | | | 0.203 | SC | 10 | 81 | 4.0 | Y | 1 | Kammerer,A | |
| 24.927 | 801220 | 9.0 | | B | 2.0 | 5 | | | 0.205 | N | 4.5 | 52 | 6.0 | Y | 1 | Hasubick,W | |
| 24.934 | 801221 | 8.9 | | B V CAS | 2.0 | 5 | | | 0.10 | B | | 14 | 6.0 | Y | 1 | Hasubick,W | |
| 24.95 | 801222 | 9.3 | | S USNOC | 3.4 | 6 | | | 0.100 | B | | 14 | 5.5 | Y | 1 | van Loof,R | |
| 24.95 | 801223 | 8.8 | | S | 3 | 6 | | | 0.080 | B | | 20 | | Y | 1 | Keitch,G,S | |
| 24.96 | 801224 | | | | 3 | 6 | | | 0.300 | N | | 40 | 6 | Y | 3 | Zanstra,W,T | |

NOTE A Blending through Beta Cas. (Translated by IHW staff. Observer gave limit as 12.0. Ed.)

NOTE B Elliptical coma. DC on long axis 3-4, DC on short axis 4-5.

NOTE C Bright sky background. Comparison star 21257 also used. Coma diameter uncertain.

DATE: 25 JUL 1985

DATE: 25 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ML | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | PWT | LIM | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|---------|-----------|----|------|-----|-------|-----|-----|-----|------|----|------|------------------|-------|
| 25.05 | 801225 | 9.1 | S | T CAS | 3 | 6 | | | 0.125 | R | 6.3 | 30 | 6 | Y | 3 | Zanstra,W.T | |
| 25.74 | 801226 | 9.3 | S | AAVSO | 3.5 | 4 | | | 0.13 | N | 6.3 | 44 | 5.0 | Y | | Hayashi,A | |
| 25.75 | 801227 | 9.1 | S | AAVSO | 2.1 | 3 | | | 0.13 | N | 10 | 24 | 5.0 | Y | 1 | Hayashi,A | |
| 25.878 | 801228 | 8.9: | B | B | 2.1 | 4 | | | 0.127 | SC | 5 | 60 | 5.5M | Y | 1 | Hasudick,W | |
| 25.878 | 801229 | 8.9: | B | B | 2.1 | 4 | | | 0.10 | B | 5 | 14 | 5.5M | Y | 1 | Hasudick,W | |
| 25.884 | 801230 | 9.7 | S | V CAS D | 3 | 4 | | | 0.152 | N | | 44 | | N | 2 | Moeller,M | A |
| 25.96 | 801231 | 9.3 | S | V CAS | 2.5 | 8 | | | 0.100 | B | | 14 | 6 | Y | 1 | van Ioo,F.R | |
| 25.99 | 801232 | 8.8 | S | V CAS | 7.5 | 4 | 0.20 | 240 | 0.06 | B | | 12 | 6 | Y | 1 | van de Weg,R.L.W | B |
| 25.99 | 801233 | 9.0 | B | V CAS | | | | | 0.06 | B | | 12 | 6 | Y | 1 | van de Weg,R.L.W | |

NOTE A Cirrus. (Observer gave limit as 11.5. Ed.)

NOTE B Elongated in PA 240 deg.

DATE: 26 JUL 1985

DATE: 26 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-----|----|-------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 26.000 | 801234 | 9.1 | S | | 4.0 | 4 | 0.13 | 250 | 0.080 | B | | 15 | 6.2 | Y | 3 | Haver,R | |
| 26.00 | 801235 | 9.1 | S | T CAS | 4 | 3 | | | 0.125 | R | | 30 | 5.5 | Y | 3 | Zanstra,W.T | |
| 26.02 | 801236 | 9.1 | S | T CAS | 4 | 5 | | | 0.300 | N | | 40 | 5.5 | Y | 3 | Zanstra,W.T | |
| 26.23 | 801237 | 8.8 | S | AAVSO | 3.4 | 7 | 0.1 | 250 | 0.317 | N | 5.6 | 68 | 6.5 | Y | 1 | Bortle,J.E | A |
| 26.23 | 801238 | 8.0 | S | AAVSO | 12.5 | 3 | | | 0.050 | B | | 10 | 6.5 | Y | 1 | Bortle,J.E | |
| 26.85 | 801239 | 10 | S | M | 1 | | | | 0.060 | R | | 30 | | | | Solodkin,V | |
| 26.95 | 801240 | 7.7 | B | AA | 6 | 6 | | | 0.110 | B | | 20 | | | | Chernis,K | |
| 26.958 | 801241 | 9.5 | S | | | | | | 0.089 | R | 5.5 | 36 | 5.0 | N | 1 | Ventura,F | B |

NOTE A With 170x the nucleus is seen to be surrounded by a small parabolic envelope which opens toward PA 250 deg. (toward the tail). The nucleus is almost stellar in appearance. At lower magnification the area of greatest condensation is offset slightly sunward of the coma's center.

NOTE B Coma diameter 2-3 arc min. Elongated coma, tail?

DATE: 27 JUL 1985

DATE: 27 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail PA | AP | Ins | f/ | Pwr Lim | DA | Site | Observer(s) | Notes | |
|----------|--------|-----|----|-------|-----------|----|---------|-----|-------|----|---------|-----|------|-------------|-------|------------|
| 27.05 | 801242 | 8.5 | S | V CMS | 2.5 | 4 | 0.05 | 255 | 0.400 | N | 5 | 81 | 6.0 | Y | 2 | Merlin,J.C |
| 27.24 | 801243 | 8.8 | S | V CMS | 4.0 | 4 | | | 0.25 | SC | 10 | 64 | 5.9 | Y | 1 | Spratt,C.E |
| 27.30 | 801244 | 9.9 | S | V CMS | 7.3 | 6 | | | 0.15 | R | 5 | 62 | 5.5 | Y | 3 | Morrison,W |
| 27.41 | 801245 | 8.3 | M | | | 4 | 0.35 | 242 | 0.150 | B | 10.0 | 20 | 7.0 | Y | 1 | Morris/C.S |
| 27.42 | 801246 | | S | | 2.1 | 5 | | | 0.150 | R | 10.0 | 50 | 7.0 | Y | 1 | Morris/C.S |
| 27.43 | 801247 | 8.2 | S | | | 2 | | | 0.150 | B | 16.0 | 12 | 7.0 | Y | 1 | Morris/C.S |
| 27.43 | 801248 | | S | R CMS | 0.5 | 4 | 0.13 | | 0.150 | B | 16.0 | 390 | 7.0 | Y | 1 | Morris/C.S |
| 27.44 | 801249 | 9.0 | S | B RA | 6 | 7 | | | 0.110 | B | 10 | 7 | 7.0 | Y | 1 | Rade,A |
| 27.99 | 801250 | 7.6 | | | | | | | 0.110 | B | 20 | | | Y | 1 | Chernis,K |

NOTE A Diffuse.

NOTE B (Observer indicated uncertainty in limiting magnitude. Ed.)

NOTE C Bulge on south side of coma

NOTE D 8 arc min. tail observed with 0.200 Newtonian; direction not measured.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | AP | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|----|--------|------|-----|------|-------------|-------|
| 27.054 | 803015 | 0.08 | 0.40 | N | 5 | 254 | 5 | 6.0 | 2 | Merlin,J.C | A |

NOTE A Spike at PA 50 deg.; jet at PA 102 deg.; jet at PA 266 deg.; tail at PA 255 deg. Diffuse extension northward.

DATE: 28 JUL 1985

DATE: 28 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-----|----|-------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 28.00 | 801251 | 8.3 | S | T CAS | 3 | 6 | | | 0.156 | N | 5 | 24 | 6 T | Y | 2 | Bouma, R.J | |
| 28.05 | 801252 | 8.5 | S | | 2.5 | 3 | 0.10 | 239 | 0.400 | N | 5 | 81 | 6.0 | Y | 2 | Merlin, J.C | |
| 28.295 | 801253 | 9.9 | S | V CAS | 1.7 | 6 | 0.07 | 250 | 0.15 | R | 5 | 62 | 6.7 | Y | 3 | Morrison, W | |
| 28.326 | 801254 | 8.6 | M | V CAS | 2.4 | 4 | | | 0.254 | N | 4.5 | 36 | 4.5 | Y | 1 | De Young, J | A |
| 28.41 | 801255 | 8.6 | M | | 6.5 | 6 | 0.12 | 260 | 0.080 | E | | 20 | 6.5 | Y | 1 | Morris, C.S | |
| 28.89 | 801256 | 10 | S | M | 1 | | | | 0.060 | R | | 30 | | | | Solodkin, V | |

NOTE A Clock face method used to estimate tail PA.

DATE: 29 JUL 1985

DATE: 29 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-----|----|---------|-----------|----|------|-----|-------|-----|----|-----|------|----|------|-------------|-------|
| 29.01 | 801257 | 8.7 | S | V CAS | 4 | 6 | | | 0.100 | B | | 14 | 5.5M | N | 1 | van Loo,F.R | |
| 29.892 | 801258 | 9.5 | S | V CAS D | 3.5 | 5 | | | 0.152 | N | 5 | 44 | M | Y | 2 | Moeller,M | A |
| 29.985 | 801259 | | | 14 | 2.5 | 5 | 0.07 | 230 | 0.203 | SC | 10 | 50 | 4.5 | Y | 1 | Dietrich,M | |

NOTE A (Observer gave limit as 11.9. Ed.)

DATE: 30 JUL 1985

DATE: 30 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|------|-----|-----|----|------|---------------|
| 30.347 | 801260 | 10.1 | S | V CAS | 1.6 | 5 | | | 0.15 | R | 5 | 62 | 6.5 | Y | 3 | Morrison,W |
| 30.77 | 801261 | 10.6 | S | M | 1.5 | 5 | | | 0.290 | N | 13.5 | 96 | | | | Guryanov,S |
| 30.77 | 801262 | 10.6 | S | M | 1.5 | 5 | | | 0.290 | N | 13.5 | 96 | | | | Sventitskiy,V |

DATE: 31 JUL 1985

DATE: 31 JUL 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | m1 | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|------|-----|-----|----|------|-------------|-------|
| 31.77 | 801263 | 11.3 | S | M | 1.2 | 6 | | | 0.290 | N | 13.5 | 96 | | | | Guryanov,S | A |

NOTE A m2 = 11.6 mag.

DATE: 1 AUG 1985

DATE: 1 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|------|-----|-----|----|------|---------------|
| 1.77 | 801264 | 11.2 | S | M | 2 | 4 | | | 0.290 | N | 13.5 | 96 | | | | Guryanov,S |
| 1.77 | 801265 | 11.3 | S | M | | | | | 0.290 | N | 13.5 | 96 | | | | Sventitskiy,V |

DATE: 2 AUG 1985

DATE: 2 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|------|-----|------|----|------|-------------|-------|
| 2.163 | 801266 | 9.4 | S | S PER | 2.3 | 4 | | | 0.15 | R | 5 | 62 | 5.3M | N | 3 | Morrison,W | A |
| 2.77 | 801267 | 10.5 | S | M | 2.5 | 4 | | | 0.290 | N | 13.5 | 96 | | | | Guryanov,S | |
| 2.844 | 801268 | 9.7 | S | AAVSO | | 3 | | | 0.20 | SC | 10 | 50 | 4.8M | N | 1 | Sicoli,P | |
| 2.868 | 801269 | 8.8 | B | SAO | 2.6 | 2 | | | 0.125 | R | 6 | 35 | | Y | 1 | Guthier,O | B |
| 2.868 | 801270 | 8.9 | S | | 2.6 | 4 | | | 0.127 | SC | 10 | 60 | 5.5M | Y | 1 | Hasubick,W | |
| 2.906 | 801271 | 8.6 | S | 15 | 1.8 | 4 | | | 0.140 | SN | 3.6 | 45 | 5.2M | N | 1 | Linder,J | |

NOTE A Moon prevents dark adaptation.

NOTE B Inner coma DC 3-4.

DATE: 3 AUG 1985

DATE: 3 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AO# | ml | MM | Chart | Coma size | DC | Tail PA | Ap | Ins | f/ | PWZ | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|---------|-----------|----|---------|-------|-----|------|-----|------|----|------|-------------|-------|
| 3.000 | 801272 | 9.0 | ? | V CAS | 2.5 2.0 | 4 | | 0.110 | R | 6.8 | 47 | M | Y | 1 | Lipski,P | A |
| 3.014 | 801273 | 10.2 | S | V CAS | 1 | 3 | | 0.11 | R | 11 | 70 | 5 M | Y | 1 | Adamoli,G | |
| 3.07 | 801274 | 8.6 | S | AAVSO | 2.8 | 7 | 0.1 | 0.317 | N | 5.6 | 68 | 6.0 | Y | 1 | Bortle,J,E | B |
| 3.11 | 801275 | 8.4 | S | AA | 3.3 | 5 | | 0.229 | R | 12 | 86 | | | | Green,D,W,E | C |
| 3.347 | 801276 | 9.5 | S | S PER | 1.8 | 5 | | 0.15 | R | 5 | 62 | 5.3M | N | 3 | Morrison,W | D |
| 3.78 | 801277 | 10.3 | S | M | 1 | | | 0.060 | R | | 30 | | | | Solodkin,V | |
| 3.79 | 801278 | 10.6 | S | M | 2.5 | 4 | | 0.290 | N | 13.5 | 96 | | | | Guryanov,S | |
| 3.86 | 801279 | 9.3 | S | V CAS | 3 | 3 | | 0.200 | SC | 10.0 | 44 | 5.0M | Y | 1 | Maraziti,A | |
| 3.86 | 801280 | 8.8 | S | S PER B | 3 | 5 | 0.17 | 0.100 | B | 14 | 14 | 6.5T | N | 1 | van Lee,F,R | |
| 3.889 | 801281 | 9.4 | S | S PER B | 3.5 | 5 | | 0.152 | N | 5 | 44 | 6.0 | Y | 2 | Moeller,M | E |
| 3.93 | 801282 | 9.0 | S | S PER | 5 | 6 | | 0.15 | R | 8 | 36 | 5.5M | N | 1 | Aerts,L | |

NOTE A Oval with nucleus. (Translated by IHW staff. Observer gave limit as 11.5. Ed.)

NOTE B At 170x there is a stellar or almost stellar nucleus of magnitude 12.5-13 with a possible short tail spine extending from it to the southwest. The central region of the coma is very bright.

NOTE C Coma diameter approximate.

NOTE D Moon prevents dark adaptation.

NOTE E Cloudy.

DATE: 4 AUG 1985

DATE: 4 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|-----|-------|-----|-----|-----|------|----|------|-------------|-------|
| 4.111 | 801283 | 9.5 | S | S PER | 1.9 | 5 | | | 0.15 | R | 5 | 62 | 5.3M | N | 3 | Morrison,W | A |
| 4.882 | 801284 | 9.3 | S | S PER | 1 | 8 | 0.04 | 230 | 0.254 | N | 3.9 | 79 | | Y | 2 | Cavagna,M | |
| 4.90 | 801285 | 8.3 | S | | 2.7 | 3 | 0.17 | 246 | 0.400 | N | 5 | 81 | 6.5 | Y | 2 | Merlin,J.C | |
| 4.944 | 801286 | 10.3 | S | V CAS | 0.7 | | | | 0.11 | R | 11 | 70 | 5 M | Y | 1 | Adamoli,G | |

NOTE A Moon prevents dark adaptation.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|----|--------|------|-----|------|-------------|-------|
| 4.899 | 803016 | 0.06 | 0.40 | N | 5 | 254 | 10 | 6.5 | 2 | Merlin,J.C | A |

NOTE A Jet at PA 88 deg.; tail streamer at PA 221 deg.; tail at PA 246 deg.; tail streamer at PA 263 deg.; jet at PA 359 deg.

DATE: 5 AUG 1985

DATE: 5 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | ACN# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|---------|-----------|----|------|-----|-------|-----|----|-----|-----|----|------|-------------|-------|
| 5.115 | 801287 | 9.2 | S | S PER | 2.0 | 6 | | | 0.15 | R | 5 | 62 | 5.8 | Y | 3 | Morrison,W | |
| 5.22 | 801288 | 8.5 | S | S PER | 3.0 | 5 | 0.05 | 265 | 0.20 | SC | 10 | 64 | 6.0 | Y | 1 | Spratt,C.E | A |
| 5.80 | 801289 | 10.3 | S | M | 1 | | | | 0.060 | R | | 30 | | | | Solodkin,V | |
| 5.870 | 801290 | 9.0 | S | S PER B | 3.0 | 5 | | | 0.061 | R | 12 | 25 | 6.0 | N | 2 | Moeller,M | B |
| 5.875 | 801291 | 9.2 | S | AA XCAS | 3 | 5 | | | 0.19 | | 4 | 38 | M | Y | 1 | Mikuz,H | C |

NOTE A V-shaped coma. (Observer indicated uncertainty in limiting magnitude. Ed.)

NOTE B Cloudy.

NOTE C Instrument is flat-field Schmidt. Clouds passing occasionally.

DATE: 6 AUG 1985

DATE: 6 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes | |
|----------|--------|------|----|---------|-----------|----|---------|-----|-------|----|-----|-----|-------|------|-------------|-------------|---|
| 6.21 | 801292 | 8.5 | S | S PER | 3.0 | 5 | 0.04 | 278 | 0.20 | SC | 10 | 64 | 5.0 | Y | 1 | Spratt,C.E | A |
| 6.30 | 801293 | 8.9 | S | R CAS | 8.5 | 4 | 0.08 | | 0.050 | B | | 10 | 6 M | Y | 8 | Hale,A | B |
| 6.45 | 801294 | 8.1 | M | SAO | 8.5 | 4 | 0.28 | 200 | 0.080 | B | 4.5 | 20 | 5.5 | Y | 6 | Morris,C.S | C |
| 6.45 | 801295 | | | | 6.8 | 4 | | | 0.256 | N | 4.5 | 23 | 5.5 | Y | 6 | Morris,C.S | |
| 6.45 | 801296 | | | | 5.1 | 4 | | | 0.256 | N | 4.5 | 29 | 5.5 | Y | 6 | Morris,C.S | |
| 6.45 | 801297 | | | | 4.3 | 5 | | | 0.256 | N | 4.5 | 45 | 5.5 | Y | 6 | Morris,C.S | |
| 6.45 | 801298 | | | | 3.4 | 6 | | | 0.256 | N | 4.5 | 67 | 5.5 | Y | 6 | Morris,C.S | |
| 6.45 | 801299 | | | | 3.4 | 6 | | | 0.256 | N | 4.5 | 72 | 5.5 | Y | 6 | Morris,C.S | |
| 6.45 | 801300 | | | | 2.8 | 7 | | | 0.256 | N | 4.5 | 111 | 5.5 | Y | 6 | Morris,C.S | |
| 6.45 | 801301 | 9.4: | M | SAO | 2.8 | 7 | | | 0.256 | N | 4.5 | 156 | 5.5 | Y | 6 | Morris,C.S | |
| 6.45 | 801302 | 9.8 | S | M | 1.5 | 2 | | | 0.060 | R | | 30 | | Y | 6 | Solodkin,V | |
| 6.75 | 801303 | | | | 1.5 | 2 | | | 0.114 | N | 8.7 | 110 | 5.0 | Y | 1 | Vills,M | |
| 6.875 | 801304 | | | | 3 | 6 | | | 0.100 | B | | 14 | 5.5T | Y | 1 | van Ioo,F.R | |
| 6.88 | 801305 | 8.7 | S | S PER | 4.0 | 5 | 0.10 | | 0.152 | N | 5 | 44 | 6.0 | Y | 2 | Moeller,M | D |
| 6.896 | 801306 | 8.9 | S | S PER B | | 5 | | | 0.203 | SC | 10 | 80 | 6 M | Y | 3 | Comello,G | |
| 6.91 | 801307 | 8.9 | S | RR PER | | 5 | | | 0.156 | N | 5 | 29 | 5.5TM | Y | 2 | Bouma,R.J | |
| 6.92 | 801308 | 8.2 | S | S PER | 4 | 4 | | | | | | | | | | | |

NOTE A Very active.

NOTE B Some interference from moonlight. 5 arc min. tail observed with 0.200 Newtonian; direction not measured.

NOTE C Tail PA uncertain.

NOTE D Cirrus.

DATE: 7 AUG 1985

DATE: 7 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-----|----|---------|-----------|----|------|-----|-------|-----|------|-----|------|----|------|-------------|-------|
| 7.11 | 801309 | 9.0 | S | S PER | 3.5 | 6 | | | 0.15 | R | 8 | 36 | 5 M | N | 1 | Aerts,L | |
| 7.25 | 801310 | 8.3 | S | S PER | 7.5 | 4 | | | 0.080 | B | | 20 | 4.5 | Y | 9 | Morris,C.S | A |
| 7.83 | 801311 | 10 | B | M | 3 | 3 | | | 0.110 | B | | 20 | | | | Shirokov,A | B |
| 7.861 | 801312 | 8.5 | S | S PER | | 4 | | | 0.140 | SN | 3.6 | 19 | 6.1 | Y | 1 | Meozzi,D | |
| 7.868 | 801313 | 9.3 | S | S PER | | 5 | | | 0.20 | SC | 10 | 50 | 5.8 | Y | 1 | Sicoli,P | |
| 7.88 | 801314 | 9.2 | S | V CAS | 4 | 3 | 0.17 | 275 | 0.200 | SC | 10.0 | 44 | 5.8 | Y | 1 | Maraziti,A | |
| 7.90 | 801315 | 8.1 | S | | 3.6 | 3 | 0.13 | 251 | 0.400 | N | 5 | 81 | 6.5 | Y | 2 | Merlin,J.C | |
| 7.902 | 801316 | 8.8 | S | S PER B | 4.0 | 6 | 0.33 | 280 | 0.152 | N | 5 | 44 | 6.1 | Y | 2 | Moeller,M | |
| 7.92 | 801317 | 8.8 | S | S PER | 3.5 | 4 | | | 0.080 | B | 5 | 20 | 5.8C | Y | 1 | Milani,G.A | |
| 7.95 | 801318 | 8.3 | S | AAVSO | 5.3 | 6 | 0.18 | 250 | 0.080 | B | | 20 | | | 1 | Keitch,G.S | C |
| 7.993 | 801319 | 8.5 | M | | | 0 | | | 0.07 | R | 20.3 | 70 | 6.0 | Y | 1 | Luga,M | D |

NOTE A SAO also used. Coma diameter uncertain.

NOTE B m2 = 11.5 mag.

NOTE C 0.18 deg. tail at PA 250 deg. is gas tail; tail with PA 250-335 deg. is dust tail (no length given. Ed.).

NOTE D Tail invisible.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|----|--------|------|-----|------|-------------|-------|
| 7.880 | 803017 | 0.07 | 0.40 | N | 5 | 254 | 15 | 6.5 | 2 | Merlin,J.C | A |

NOTE A Jet at PA 39 deg.; jet at PA 75 deg.; tail streamer at PA 215 deg.; tail at PA 251 deg.; tail streamer at PA 293 deg.

DATE: 8 AUG 1985

DATE: 8 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-----|----|---------|-----------|-----|------|-----|-------|-----|------|-----|------|----|------|--------------|-------|
| 8.00 | 801320 | 8.3 | S | S PER | 7 | 5 | 0.33 | | 0.100 | B | | 14 | 6.5 | Y | 1 | van Loo,F.R | |
| 8.83 | 801321 | 9.5 | S | M | 2 | 2 | | | 0.060 | R | | 30 | | | | Solodkin,V | |
| 8.865 | 801322 | 9.4 | S | S PER | | | | | 0.30 | N | 6 | 73 | 5.5 | Y | 1 | Remo,S | |
| 8.87 | 801323 | 8.5 | S | S PER | 4 | 7 | | | 0.300 | N | | 80 | 5.5 | Y | 3 | Zanstra,W.T | |
| 8.87 | 801324 | 9.5 | B | M | 4 | | | | 0.088 | B | | 20 | | | | Mormil,V | |
| 8.872 | 801325 | 9.5 | S | S PER | | 5 | | | 0.20 | SC | 10 | 50 | 5.6 | Y | 1 | Sicoli,P | |
| 8.878 | 801326 | 9.0 | B | 15 | 2.0 | 6 | | | 0.356 | SC | 11 | 156 | 5.5 | Y | 1 | Korth,S | |
| 8.889 | 801327 | 8.5 | S | S PER | | 5 | | | 0.140 | SN | 3.6 | 19 | 6.2 | Y | 1 | Meozzi,D | |
| 8.89 | 801328 | 8.1 | S | | 3.8 | 3 | 0.15 | 261 | 0.400 | N | 5 | 81 | 6.5 | Y | 2 | Merlin,J.C | |
| 8.893 | 801329 | 8.7 | B | S PER B | 4.0 | 6 | 0.33 | 285 | 0.152 | N | 5 | 44 | 6.0 | Y | 2 | Moeller,M | |
| 8.896 | 801330 | 9.7 | S | | | 3 | | | 0.064 | R | 6.3 | 25 | 6 M | Y | 2 | Paradowski,M | |
| 8.90 | 801331 | 9.0 | S | S PER | 4.5 | 5 | | | 0.150 | R | 8 | 64 | 5 C | N | 1 | Aerts,L | |
| 8.90 | 801332 | 9.0 | S | S PER | 4.5 | 5 | | | 0.15 | R | 8 | 64 | 5 C | N | 1 | Aerts,L | |
| 8.90 | 801333 | 8.7 | S | 15 | 2.2 | 6 | 0.05 | 260 | 0.203 | SC | 10 | 81 | 5.0 | Y | 1 | Kammerer,A | |
| 8.902 | 801334 | 8.5 | B | SAO | 3.9 | 1.9 | | | 0.125 | R | 6 | 35 | | Y | 1 | Guthier,O | A |
| 8.91 | 801335 | 9.2 | S | V CAS | 4 | 3 | 0.17 | 270 | 0.200 | SC | 10.0 | 44 | 6.0 | Y | 1 | Maraziti,A | B |
| 8.91 | 801336 | 8.7 | S | S PER | | 5 | | | 0.080 | B | 5 | 20 | 5.8C | Y | 1 | Milani,G.A | |
| 8.931 | 801337 | 8.7 | B | SAO | 3.8 | 1.0 | 0.17 | 268 | 0.250 | N | 6.0 | 75 | | Y | 1 | Guthier,O | C |
| 8.939 | 801338 | 8.6 | ? | 15 | 2 | 5 | 0.05 | 280 | 0.203 | SC | 10 | 50 | 5.0 | Y | 1 | Dietrich,M | D |
| 8.944 | 801339 | 8.8 | B | S PER B | 4.0 | 6 | 0.25 | 285 | 0.152 | N | 5 | 44 | 6.0M | Y | 2 | Moeller,M | |
| 8.950 | 801340 | 9.1 | B | SAO | 1.0 | 3 | | | 0.15 | N | 8 | 60 | 4.5C | Y | 1 | Bottger,B | |
| 8.962 | 801341 | 9.3 | B | S PER | 2 | 6 | 0.1 | 245 | 0.11 | R | 11 | 70 | 5 | Y | 1 | Adamoli,G | |
| 8.979 | 801342 | 8.4 | B | S PER | 5.6 | 6 | | | 0.140 | SN | 3.6 | 28 | 5.5 | Y | 5 | Linder,J | |
| 8.979 | 801343 | | | | | | 0.22 | 225 | 0.406 | N | 4.5 | 138 | 5.5 | Y | 5 | Linder,J | |

NOTE A Extension broad. (Tail length marked "extension 3'" on original report form. Ed.)

NOTE B Inner coma DC 6.

NOTE C DC on long axis 5, DC on short axis 7.

NOTE D (Observer indicated "A" method [Argelander?]. Ed.)

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|----|--------|------|-----|------|-------------|-------|
| 8.887 | 803018 | 0.06 | 0.40 | N | 5 | 254 | 5 | 6.5 | 2 | Merlin,J.C | A |

NOTE A Spike at PA 82 deg., very diffuse; tail at PA 261 deg.; jet at PA 282 deg. Diffuse extension southward.

DATE: 9 AUG 1985

DATE: 9 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|---------|-----------|----|------|----|-------|-----|-----|-----|------|----|------|------------------|-------|
| 9.24 | 801344 | 8.1 | S | S PER | 9 | 4 | | | 0.080 | B | | 20 | 4.5 | Y | 9 | Morris,C.S | |
| 9.82 | 801345 | 9.5 | S | M | 2 | 3 | | | 0.060 | R | | 30 | | | | Solodkin,V | |
| 9.860 | 801346 | 8.6 | S | S PER B | 3.5 | 7 | | | 0.152 | N | 5 | 44 | 5.7T | N | 2 | Moeller,M | |
| 9.86 | 801347 | 9.5 | B | M | 4 | 3 | | | 0.080 | B | | 30 | | | | Shirokov,A | A |
| 9.861 | 801348 | 8.4 | B | | 3.1 | 3 | | | 0.10 | B | | 14 | 6.0 | Y | 1 | Hasubick,W | |
| 9.863 | 801349 | 8.4 | S | S PER | | 5 | | | 0.140 | SN | 3.6 | 19 | 6.2 | N | 1 | Meozzi,D | |
| 9.875 | 801350 | 9.4 | ? | | 4 | 3 | | | 0.13 | N | 8 | 25 | 6.0 | Y | 1 | Lieder,F | |
| 9.88 | 801351 | 8.6 | S | S PER | 4 | 7 | | | 0.300 | N | | 80 | 4.5 | Y | 3 | Zanstra,W.T | |
| 9.881 | 801352 | 9.3 | B | | 2.5 | 5 | | | 0.063 | R | 13 | 34 | 6.0 | Y | 1 | Zische,E | |
| 9.885 | 801353 | 8.5 | M | | 2.6 | 3 | | | 0.127 | SC | 10 | 60 | 6.0 | Y | 1 | Hasubick,W | |
| 9.91 | 801354 | 8.9: | S | S PER | 2.5 | 5 | 240 | | 0.200 | N | 4 | 50 | 5.5 | Y | 1 | Milani,G.A | B |
| 9.917 | 801355 | | | | 3 | | | | 0.089 | R | 5.5 | 36 | 5.0 | N | 1 | Ventura,F | |
| 9.92 | 801356 | 8.8 | S | S PER | 3 | | | | 0.080 | B | 5 | 20 | 5.5C | Y | 1 | Milani,G.A | |
| 9.930 | 801357 | 8.4 | S | | 5.0 | 5 | | | 0.080 | B | | 15 | 6.0 | Y | 2 | Haver,R | |
| 9.941 | 801358 | 9.4 | B | | 2.3 | 4 | | | 0.063 | R | 13 | 34 | 5.5 | Y | 1 | Zische,E | |
| 9.950 | 801359 | 8.6 | B | | 4.2 | 2 | | | 0.165 | N | 8.7 | 57 | 5.5 | Y | 1 | Bohme,D | |
| 9.958 | 801360 | 8.5 | M | | 3 | 3 | | | 0.114 | N | 8.7 | 110 | 5.5 | Y | 2 | Villa,M | |
| 9.96 | 801361 | | | | 3 | 2 | | | 0.145 | N | 8 | 30 | 5.5M | Y | 1 | van der Laan,T.A | |

NOTE A m2 = 11.5 mag.

NOTE B Asymmetric coma, extended in PA 240 deg.

DATE: 10 AUG 1985

DATE: 10 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | ACON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-----|----|-------|-----------|-----|------|-----|-------|-----|------|-----|------|----|------|------------------|-------|
| 10.000 | 801362 | 8.6 | ? | | 2.0 | 3 | | | 0.110 | R | 6.8 | 19 | M | Y | 1 | Lipski,P | A |
| 10.16 | 801363 | 8.4 | S | AAVSO | 2.7 | 6 | 0.2 | 260 | 0.317 | N | 5.6 | 55 | 6.0 | Y | 1 | Bortle,J.E | B |
| 10.16 | 801364 | 8.0 | B | AAVSO | 8 | 4 | | | 0.080 | B | | 20 | 6.0 | Y | 1 | Bortle,J.E | |
| 10.188 | 801365 | 8.9 | S | S PER | 2.3 | 6 | 0.03 | 252 | 0.15 | R | 5 | 62 | 6.3 | Y | 3 | Morrison,W | C |
| 10.26 | 801366 | 8.0 | M | S PER | 6 | 4 | | | 0.080 | B | | 20 | 7.0 | Y | 1 | Morris,C.S | D |
| 10.84 | 801367 | 9.0 | S | M | 3 | 3 | | | 0.060 | R | | 30 | | | | Solodkin,V | |
| 10.85 | 801368 | 9.4 | B | M | 4 | | | | 0.088 | B | | 20 | | | | Mormil,V | |
| 10.876 | 801369 | 9.3 | B | | 2.0 | 5 | | | 0.063 | R | 13 | 34 | 6.0 | Y | 1 | Zische,E | |
| 10.895 | 801370 | 9.4 | ? | | 4 | 3 | | | 0.13 | N | 8 | 25 | 6.0 | Y | 1 | Lieder,F | |
| 10.897 | 801371 | 8.4 | S | S PER | 5 | 5 | | | 0.140 | SN | 3.6 | 19 | 6.1 | Y | 1 | Meozzi,D | |
| 10.90 | 801372 | 8.8 | S | S PER | 5 | 5 | 0.12 | | 0.15 | R | 8 | 64 | 6 | Y | 1 | Aerts,L | |
| 10.91 | 801373 | 8.9 | S | S PER | 5 | 6 | | | 0.125 | R | 5.0 | 19 | 5.5C | Y | 1 | Poitevin,P | |
| 10.931 | 801374 | 8.5 | B | SAO | 5.3 | 1.7 | | | 0.125 | R | 6.0 | 35 | | Y | 1 | Guthier,O | |
| 10.94 | 801375 | 8.6 | S | S PER | | | | | 0.080 | B | 5 | 20 | 5.5 | Y | 3 | Milani,G.A | E |
| 10.94 | 801376 | 7.8 | S | | 4.5 | 3 | 0.18 | 255 | 0.150 | N | 5 | 25 | 6.5 | Y | 2 | Merlin,J.C | F |
| 10.94 | 801377 | 8.3 | S | S PER | 8 | 4 | 0.22 | 265 | 0.06 | B | | 12 | 6.5 | Y | 1 | van de Weg,R.L.W | |
| 10.94 | 801378 | 8.4 | B | S PER | | | | | 0.06 | B | | 12 | 6.5 | Y | 1 | van de Weg,R.L.W | |
| 10.960 | 801379 | 9.1 | B | SAO | 1.0 | 5 | | | 0.15 | N | 8 | 60 | 4.5C | Y | 1 | Bottger,B | |
| 10.965 | 801380 | 8.6 | B | SAO | 2.7 | 0.9 | 0.13 | 265 | 0.250 | N | 6.0 | 75 | | Y | 1 | Guthier,O | G |
| 10.993 | 801381 | 8.4 | M | | | 0 | | | 0.07 | R | 20.3 | 70 | 6.0 | Y | 1 | Luga,M | |

NOTE A (Observer gave limit as 11.8. Ed.)

NOTE B At 68x the coma is very bright, large and parabolic in outline, opening toward the southwest.

NOTE C Clock face method used to estimate tail PA.

NOTE D Coma appeared "dense". Tail seen, but not recorded.

NOTE E Round coma. DC on long axis 4-5, DC on short axis 5.

NOTE F Haze.

NOTE G Tail streak. DC on long axis 5, DC on short axis 6.

DATE: 11 AUG 1985

DATE: 11 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-----|----|---------|-----------|-----|------|-----|-------|-----|------|-----|------|----|------|------------------|-------|
| 11.014 | 801382 | 8.4 | B | 16 | 3.6 | 5 | 0.07 | 265 | 0.140 | SN | 3.6 | 25 | 5.0 | Y | 1 | Linder,J | |
| 11.05 | 801383 | 8.5 | S | W PER | | 5 | | | 0.145 | N | 8 | 30 | 5.5M | Y | 1 | van der Laan,T.A | |
| 11.080 | 801384 | 9.1 | M | 15 | | 2 | | | 0.23 | R | 15 | 144 | 3.8M | Y | 1 | Sabia,J.D | |
| 11.125 | 801385 | 9.0 | B | 16 | 2.5 | 5 | | | 0.113 | N | 8 | 22 | | Y | 1 | Schambeck,C | |
| 11.22 | 801386 | 8.2 | S | S PER | 3.5 | 4 | 0.05 | 270 | 0.20 | SC | 10 | 64 | 5.5 | Y | 1 | Spratt,C.E | A |
| 11.23 | 801387 | 8.0 | S | S PER | 5 | 4 | | | 0.08 | B | | 11 | 5.0 | Y | 1 | Spratt,C.E | |
| 11.35 | 801388 | 7.9 | M | S PER | 6 | 6 | 0.50 | 255 | 0.080 | B | | 20 | 7.0 | Y | 1 | Morris,C.S | B |
| 11.354 | 801389 | 8.8 | S | S PER | 2.0 | 6 | | | 0.15 | R | 5 | 62 | 6.5 | Y | 3 | Morrison,W | |
| 11.37 | 801390 | | | | 2.5 | 7 | | | 0.610 | C | 16.0 | 139 | 7.0 | Y | 1 | Morris,C.S | C |
| 11.38 | 801391 | | | | 2.0 | 7 | | | 0.610 | C | 16.0 | 177 | 7.0 | Y | 1 | Morris,C.S | |
| 11.39 | 801392 | | | | 1.2 | 8 | | | 0.610 | C | 16.0 | 390 | 7.0 | Y | 1 | Morris,C.S | |
| 11.396 | 801393 | 8.5 | B | | 4.8 | 3.2 | 2 | | 0.165 | N | 8.7 | 57 | 6.2 | Y | 1 | Bohme,D | |
| 11.76 | 801394 | 8.9 | S | AAVSO | 4 | 4 | | | 0.13 | N | 6.3 | 24 | 5.0M | Y | | Hayashi,A | D |
| 11.76 | 801395 | 9.0 | S | M | 3 | 3 | | | 0.060 | R | | 30 | | | | Solodkin,V | |
| 11.85 | 801396 | 9.3 | B | M | 5 | | | | 0.088 | B | | 30 | | | | Mormil,V | |
| 11.871 | 801397 | 9.1 | B | | 2.5 | 5 | | | 0.063 | R | 13 | 34 | 6.5 | Y | 1 | Zische,E | |
| 11.885 | 801398 | 8.3 | S | S PER | | 5 | | | 0.140 | SN | 3.6 | 19 | 6.1 | Y | 1 | Meozzi,D | |
| 11.901 | 801399 | 8.5 | B | CZ | | | | | 0.05 | B | | 7 | 5.3C | Y | 2 | Kourimsky,M | |
| 11.91 | 801400 | 8.0 | S | S PER | 4 | 5 | | | 0.156 | N | 5 | 24 | 6.5 | Y | 4 | Bouma,R.J | |
| 11.91 | 801401 | 8.6 | S | S PER | 4 | 5 | 0.10 | 260 | 0.156 | N | 5 | 24 | 6 | Y | 4 | Bus,E.P | |
| 11.910 | 801402 | 8.5 | B | | 3.6 | 3 | | | 0.10 | B | | 14 | 6.0 | Y | 1 | Hasubick,W | |
| 11.92 | 801403 | 9.0 | B | S PER | | | | | 0.156 | N | 5 | 24 | 6 | Y | 4 | Bus,E.P | |
| 11.93 | 801404 | 7.8 | S | | 4.5 | 3 | 0.15 | 253 | 0.150 | N | 5 | 25 | 6.5 | Y | 2 | Merlin,J.C | |
| 11.946 | 801405 | 9.2 | B | | 2.5 | 5 | | | 0.063 | R | 13 | 34 | 6.5 | Y | 1 | Zische,E | |
| 11.95 | 801406 | 8.1 | S | AAVSO | 3.8 | 6 | 0.35 | 266 | 0.050 | B | | 10 | | Y | 1 | Keitch,G.S | E |
| 11.95 | 801407 | 8.2 | S | USNOG | 3.8 | | 0.35 | 266 | 0.080 | B | | 20 | | Y | 1 | Keitch,G.S | F |
| 11.96 | 801408 | 8.6 | S | AA WPER | 4 | 6 | 0.08 | 255 | 0.19 | | 4 | 38 | | Y | 1 | Milkuz,H | G |
| 11.970 | 801409 | 9.4 | S | S PER | | 7 | | | 0.203 | SC | 10 | 80 | 5 | Y | | Conte,G | H |
| 11.97 | 801410 | | | | | | 0.08 | 262 | 0.406 | N | 5.6 | 126 | 6.5 | Y | 4 | Bouma,R.J | |
| 11.97 | 801411 | 7.8 | S | | | | | | 0.060 | B | | 9 | 6.5 | Y | 2 | Merlin,J.C | |
| 11.97 | 801412 | 8.2 | S | | 4.5 | 3 | 0.13 | 267 | 0.400 | N | 5 | 81 | 6.5 | Y | 2 | Merlin,J.C | |
| 11.997 | 801413 | 8.4 | M | | | 1 | | | 0.07 | R | 20.3 | 70 | 6.0 | Y | 1 | Luga,M | |

NOTE A Activity over 2 hour period.

NOTE B Tail was straight. Width 6 arc min. at head, expanding slightly toward end.

NOTE C Distinct bulge on south side of coma. Condensation was slightly non-stellar.

NOTE D Tail length = yes? [sic]

NOTE E 29.8 cm reflector shows 18 arc sec. nuclear condensation, several tails. USNOG also used for comparison magnitudes.

NOTE F 29.8 cm reflector shows 18 arc sec. nuclear condensation, several tails. Gas tail 0.35 deg. long PA 266 deg. USNOG also used for comparison magnitudes.

NOTE G Instrument is flat-field Schmidt. Excellent conditions.

NOTE H Faint tail.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|----|--------|------|-----|------|-------------|-------|
| 11.976 | 803019 | 0.05 | 0.40 | N | 5 | 254 | 10 | 6.5 | 2 | Merlin,J.C | A |

NOTE A Spike at PA 62 deg., nearly sunward; tail streamer at PA 237 deg.; tail at PA 267 deg.; tail streamer at PA 297 deg.

SUB-NETWORK: PHOTOGRAPHY

| Date(UT) | AON# | FL | f/ | Ap | FOV | ExpM | Emulsion | ISO | Hyp | Gang | Id/Typ | Site | Observer(s) | Notes |
|----------|--------|-------|-----|----|-----------|-------|-------------|-----|-----|------|--------|------|-------------|-------|
| 11.963 | 805105 | 0.700 | 5.0 | | 2.9 x 2.0 | 20.00 | Kodak IIA-F | | N | M | 006/P | 1 | Ridley,H.B | A |

NOTE A (Observer's image identifier is 2A6. Ed.)

DATE: 12 AUG 1985

DATE: 12 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AO# | ml | MM | Chart | Coma size | DC | Tail PA | Ap | Ins f/ | Pwr Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-----|----|---------|-----------|----|---------|-------|--------|---------|----|------|------------------|-------|
| 12.01 | 801414 | 8.5 | S | S PER | 4 | 2 | 0.42 | 0.08 | B | 15 | Y | 1 | Scholten,A | A |
| 12.06 | 801415 | 8.0 | S | S PER | 5 | 5 | 0.42 | 0.100 | B | 14 | Y | 4 | van Loo,F,R | B |
| 12.10 | 801416 | 8.6 | S | S 16 | 3 | 3 | 0.06 | 0.050 | B | 10 | Y | 1 | Rossi,L | C |
| 12.236 | 801417 | 8.6 | S | S PER | 2.3 | 6 | 0.06 | 0.15 | N | 62 | Y | 3 | Morrison,W | C |
| 12.31 | 801418 | 7.9 | B | AAVSO | 4.7 | 7 | 0.2 | 0.317 | N | 5.6 | Y | 1 | Bortle,J,E | D |
| 12.31 | 801419 | 7.9 | S | AAVSO | 8.5 | 4 | 0.9 | 0.080 | B | 20 | Y | 1 | Bortle,J,E | |
| 12.35 | 801420 | 8.3 | M | RZ CAS | | | 0.9 | 0.265 | B | 10 | Y | 9 | Hale,A | |
| 12.40 | 801421 | 8.1 | M | S PER | 5 | 6 | 0.83 | 0.080 | B | 20 | Y | 1 | Morris,C,S | E |
| 12.75 | 801422 | 9.0 | S | AAVSO | 3.3 | 4 | 0.83 | 0.13 | N | 24 | Y | 4 | Hayashi,A | F |
| 12.865 | 801423 | 8.5 | S | S PER B | 4.5 | 5 | 0.83 | 0.152 | N | 5 | Y | 2 | Moeller,M | F |
| 12.87 | 801424 | 9.2 | S | M PER | 4 | 4 | 0.12 | 0.060 | R | 30 | Y | 1 | Solodkin,V | G |
| 12.875 | 801425 | 8.3 | S | S PER | 5 | 4 | 0.12 | 0.140 | SM | 3.6 | Y | 1 | Meozzi,D | |
| 12.89 | 801426 | 8.8 | S | W PER | 4 | 6 | 0.12 | 0.15 | R | 8 | Y | 1 | Aerts,L | |
| 12.89 | 801427 | 9.2 | B | M | 4 | 3 | 0.12 | 0.088 | B | 20 | Y | 1 | Morini,V | |
| 12.89 | 801428 | 8.3 | S | M | 1 | 3 | 0.12 | 0.065 | N | 7.7 | Y | 3 | Serov,V | |
| 12.90 | 801429 | 8.5 | S | S 16 | 1 | 5 | 0.12 | 0.080 | B | 5 | Y | 3 | Milani,G,A | H |
| 12.91 | 801430 | 8.6 | S | S PER | 2.5 | 5 | 0.12 | 0.080 | B | 5 | Y | 3 | Milani,G,A | H |
| 12.92 | 801431 | 8.3 | S | S PER | 9 | 5 | 0.12 | 0.05 | B | 20 | Y | 4 | Bus,E,P | |
| 12.924 | 801432 | 8.7 | B | 16 | 2.5 | 5 | 0.13 | 0.356 | SC | 11 | Y | 1 | Korth,S | |
| 12.928 | 801433 | 8.6 | S | AA WPER | 4.5 | 5 | 0.13 | 0.19 | SC | 4 | Y | 1 | Mikuz,H | I |
| 12.94 | 801434 | 8.4 | S | RR PER | | 4 | 0.25 | 0.203 | SC | 10 | Y | 3 | Cornello,G | |
| 12.97 | 801435 | 8.3 | S | W PER | 6 | 2 | 0.25 | 0.080 | B | 15 | Y | 1 | Fejth,H | |
| 12.98 | 801436 | 7.8 | S | S PER | 6 | 2 | 0.25 | 0.05 | B | 10 | Y | 4 | Bouma,R,J | |
| 12.985 | 801437 | 9.2 | S | S PER | 3 | 5 | 0.25 | 0.203 | SC | 10 | Y | 4 | Conte,G | |
| 12.990 | 801438 | 9.5 | S | S PER | 8 | 4 | 0.25 | 0.089 | R | 5.5 | Y | 1 | Ventura,F | |
| 12.99 | 801439 | 8.1 | B | S PER | 3 | 5 | 0.25 | 0.06 | B | 36 | Y | 1 | van de Weg,R,I,W | |
| 12.99 | 801440 | 8.3 | B | S PER | 4 | 4 | 0.25 | 0.06 | B | 12 | Y | 1 | van de Weg,R,I,W | |
| 12.997 | 801441 | 8.7 | B | W PER | 7.6 | 1 | 0.25 | 0.080 | B | 11 | Y | 2 | Stomeo,E | |

NOTE A Coma elongated in PA 30, tail? [sic]

NOTE B DC uncertain.

NOTE C Clock face method used to estimate tail PA.

NOTE D Using l10x there is a bright central region no more than 0.5 arc min. in diameter. With l70x there is a bright, almost stellar nucleus visible within the condensed region.

NOTE E Tail length = Yes? [sic]

NOTE F Hazy.

NOTE G M2 = 9.5 mag., d = 20 arc sec.

NOTE H Haze.

NOTE I Instrument is flat-field Schmidt. Excellent conditions.

SUB-NETWORK: DRAWING

| Date(UT) | AO# | Scale | Ap | Ins f/ | Pwr(s) | DurM Lim | Site | Observer(s) | Notes |
|----------|--------|-------|----|--------|--------|----------|------|-------------|-------|
| 12.925 | 803020 | 0.356 | SC | 11 | 156 | 5 6 | I | Korth,S | A |

NOTE A Field diameter 16 arc min.

DATE: 13 AUG 1985

DATE: 13 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | ION# | ML | MM | Chart | Coma size | DC | Tail PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|---------|-------|-----|------|-----|------|----|------|--------------|-------|
| 13.010 | 801442 | 8.5: | S | 16 | 3 | 5 | | 0.080 | B | 7.8 | 15 | 5.1 | Y | 1 | Glowinski,C | A |
| 13.010 | 801443 | 8.5: | S | 16 | 3.5 | 1 | | 0.114 | N | 5.0 | 72 | 5.0 | Y | 1 | Gorzoli,E | |
| 13.02 | 801444 | 9.1 | B | R CAS | 2.5 | 8 | 0.07 | 0.254 | N | 5.0 | 70 | 6.0C | Y | 1 | Kuipers,G | |
| 13.08 | 801445 | 7.9 | S | S PER | 6 | 6 | 0.42 | 0.100 | B | 10 | 14 | 7.5 | Y | 4 | van Ioo,F,R | B |
| 13.228 | 801446 | 8.1 | S | S PER | 4.5 | 4 | 0.08 | 0.20 | SC | 5 | 64 | 5.8 | Y | 1 | Spratt,C,E | |
| 13.288 | 801447 | 8.8 | S | S PER | 2.9 | 6 | 0.07 | 0.15 | R | 4.5 | 46 | 4.5 | Y | 3 | Morrison,W | C |
| 13.315 | 801448 | 8.3 | M | S PER | 2.2 | 5 | | 0.254 | N | 6.3 | 20 | 6.5 | Y | 1 | De Young,J | |
| 13.322 | 801449 | 8.1 | S | AAVSO | 7.5 | 4 | 0.17 | 0.080 | B | 6.3 | 24 | 5.0M | Y | 1 | Bortle,J,E | |
| 13.75 | 801450 | 8.8 | S | M | 4 | 4 | 0.13 | 0.13 | N | 5 | 30 | | Y | 2 | Hayashi,A | D |
| 13.85 | 801451 | 9.2 | S | M | 3 | 2 | 0.060 | 0.060 | R | 5 | 25 | 6.5 | Y | 2 | Soldaki,V | |
| 13.87 | 801452 | 7.6 | S | S | 5.4 | 2 | 0.20 | 0.150 | N | 5 | 7 | 5.2C | Y | 2 | Merlini,J,C | |
| 13.873 | 801453 | 8.3 | S | CZ | 4 | 4 | 0.05 | 0.088 | B | 6.3 | 20 | | Y | 2 | Kourimsky,M | |
| 13.89 | 801454 | 9.1 | B | M | 4 | 4 | 0.064 | 0.064 | R | 6.3 | 25 | 6 | Y | 2 | Paradowski,M | |
| 13.896 | 801455 | 9.5 | S | V CAS | 3 | 6 | 0.08 | 0.200 | SC | 10.0 | 44 | 5.5 | Y | 1 | Marzetti,A | E |
| 13.91 | 801456 | 9.1 | S | S PER | 2 | 5 | | 0.080 | B | 5 | 20 | 5.7 | Y | 3 | Milani,G,A | |
| 13.92 | 801457 | 7.7 | S | S PER | 7 | 2 | | 0.05 | B | 5 | 10 | 7 | Y | 4 | Bouma,R,J | |
| 13.93 | 801458 | 8.5: | S | S PER | 9 | 5 | | 0.05 | B | 5 | 10 | 6.5 | Y | 4 | Bus,E,P | |
| 13.95 | 801459 | 8.2 | S | S PER | 9 | 5 | | 0.05 | B | 5 | 10 | 6.0 | Y | 4 | Bus,E,P | |
| 13.986 | 801460 | 8.5 | B | S PER | 4.9 | 4 | | 0.10 | B | 5.5 | 14 | 6.0 | Y | 4 | Bus,E,P | |
| 13.986 | 801461 | 8.5 | B | S PER | 2.8 | 4 | | 0.089 | R | 5.5 | 14 | 6.0 | Y | 1 | Hasubick,W | |
| 13.990 | 801462 | 9.2 | S | S | 2.8 | 3 | | 0.089 | R | 5.5 | 36 | 4.5 | N | 1 | Ventura,F | |

NOTE A Coma diameter approximate.

NOTE B Distinct coma halos.

NOTE C Clock face method used to estimate tail PA.

NOTE D m2 = 9.5 mag, d = 20 arc sec.

NOTE E AAVSO Atlas Chart 16 also used as comparison star source.

DATE: 14 AUG 1985

DATE: 14 AUG 1985

NETWORK: AMATEUR OBSERVATION
SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AO# | ml | MM | Chart | Coma size | DC | Tail PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-----|----|--------|-----------|-----|---------|-------|-----|-----|-----|-------|----|------|--------------|-------|
| 14.007 | 801463 | 8.6 | B | B | 3.9 | 4 | | 0.10 | B | | 14 | 6.0 | Y | 1 | Koch,B.O | |
| 14.007 | 801464 | 8.6 | B | B | 4.9 | 3 | | 0.10 | B | | 14 | 6.0 | Y | 1 | Koch,V | |
| 14.02 | 801465 | 9.2 | S | S | 2.5 | 6 | | 0.114 | N | 8.7 | 50 | 5.2 | | 1 | Nolle,M | |
| 14.07 | 801466 | 8.4 | S | S PER | | 2 | | 0.08 | B | | 15 | 6 | Y | 2 | Scholten,A | |
| 14.13 | 801467 | 8.5 | S | S 16 | | 4 | | 0.080 | B | | 11 | 5.0MT | | 1 | Rossi,L | |
| 14.13 | 801468 | 8.0 | S | S PER | 4.0 | 5 | 0.08 | 0.20 | SC | 10 | 64 | 5.5 | Y | 1 | Spratt,C.E | A |
| 14.23 | 801469 | 7.9 | S | S PER | 5 | 4 | 0.17 | 0.08 | B | | 11 | 5.5 | Y | 1 | Spratt,C.E | |
| 14.75 | 801470 | 8.7 | S | RAVSO | 4.5 | 4 | 0.1 | 0.13 | N | 6.3 | 24 | 5.5 | Y | 1 | Hayashi,A | B |
| 14.84 | 801471 | 8.2 | B | M | 1.2 | 3 | 0.1 | 0.065 | N | 7.7 | 33 | | | 1 | Serov,V | |
| 14.875 | 801472 | 8.7 | B | 16 | | 6 | | 0.356 | SC | 11 | 156 | 5.0 | Y | 1 | Korth,S | C |
| 14.878 | 801473 | 8.6 | B | B | 5.8 | 3 | | 0.10 | B | | 14 | 6.0 | Y | 1 | Hasubick,N | |
| 14.882 | 801474 | 8.9 | B | B | 4.3 | 4 | | 0.08 | B | | 20 | 6.0 | Y | 1 | Koch,B.O | |
| 14.89 | 801475 | 9.1 | B | XX CAM | 3 | 5 | | 0.08 | R | 15 | 43 | 4.5C | Y | 1 | Cluyse,L | D |
| 14.89 | 801476 | 9.1 | B | M | 4 | | | 0.088 | B | | 20 | 6 | Y | 2 | Mozmil,V | |
| 14.896 | 801477 | 9.5 | S | S | 4.7 | 0.1 | 5 | 0.064 | R | 6.3 | 25 | 6 | Y | 1 | Paradowski,M | |
| 14.90 | 801479 | 8.3 | S | S 16 | | 4 | | 0.08 | B | | 20 | 6.0 | Y | 1 | Koch,V | |
| 14.90 | 801480 | | | | 3.6 | 6 | 0.17 | 0.203 | SC | 10 | 51 | 5.5 | Y | 4 | Kammerer,A | E |
| 14.92 | 801481 | 7.7 | S | USNOC | 4.0 | 6 | 0.25 | 0.050 | B | | 10 | | | 1 | Keitch,G.S | E |
| 14.92 | 801482 | 7.9 | S | USNOC | 4.2 | 6 | 0.25 | 0.080 | B | | 20 | | | 1 | Keitch,G.S | F |
| 14.924 | 801483 | 8.4 | S | CZ | | | | 0.05 | B | | 7 | 5.4C | Y | 2 | Kourimsky,M | |
| 14.93 | 801484 | 7.7 | S | S PER | 6 | 2 | | 0.05 | B | | 10 | 7 | Y | 4 | Bouma,R.J | |
| 14.94 | 801485 | 8.7 | S | S PER | 5.5 | 7 | 0.17 | 0.150 | R | 8 | 43 | 6 | C | 4 | Aerts,L | |
| 14.94 | 801486 | 8.5 | S | S 16 | 1.7 | 6 | 0.07 | 0.080 | B | 5 | 20 | 6.5 | Y | 3 | Milani,G.A | |
| 14.94 | 801487 | 8.7 | S | S PER | 5.5 | 7 | 0.17 | 0.15 | R | 8 | 43 | 6 | Y | 4 | Aerts,L | |
| 14.941 | 801488 | 9.0 | S | AAVSO | | 5 | | 0.20 | SC | 10 | 50 | 4.5 | N | 1 | Sicoli,P | |
| 14.948 | 801489 | 8.5 | S | AAVSO | 5 | 5 | 0.17 | 0.19 | | 4 | 38 | | Y | 1 | Mikuz,H | |
| 14.959 | 801490 | 8.6 | S | S PER | 4.3 | 7 | 0.35 | 0.050 | B | 4.5 | 90 | | Y | 5 | Cavagna,M | G |
| 14.98 | 801491 | | | | 2.2 | 7 | 0.23 | 0.400 | N | 4.5 | 29 | | Y | 5 | Cavagna,M | |
| 14.99 | 801492 | 8.3 | S | RR PER | 1.5 | 4 | 0.23 | 0.080 | R | | 50 | 6.5 | Y | 3 | Nesterov,Yu | |
| 14.99 | 801493 | 8.3 | S | S | | 6 | | 0.203 | SC | 10 | 50 | 6.5 | Y | 3 | Comello,G | |
| 14.99 | 801494 | 8.7 | S | S | 3 | | | 0.114 | N | 8.7 | 50 | 5.8 | Y | 1 | Nolle,M | |

NOTE A Active coma, stellar nucleus. (Observer indicated uncertainty in DC. Ed.)

NOTE B Tail PA 290 to 330.

NOTE C Some clouds during observation.

NOTE D V magnitudes from RAVSO Atlas chart 16.

NOTE E Inner coma 2 arc min., very diffuse outer coma, tail 30 deg. broad.

NOTE F Two jets for 3 arc min. in PA 54 deg., 132 deg. Gas tail 0.25 deg. Long PA 266 deg.; dust tail 0.17 deg. Long PA 241-300 deg.

NOTE G Instrument is flat-field Schmidt. Very good conditions.

DATE: 15 AUG 1985

DATE: 15 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | ACN# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-----|----|--------|-----------|----|------|-----|-------|-----|-----|-----|------|----|------|-------------|-------|
| 15.000 | 801495 | 8.7 | B | 16 | 1.4 | 3 | | | 0.15 | N | 8 | 60 | 4.0C | Y | 1 | Bottger,B | |
| 15.04 | 801496 | 8.2 | S | S PER | 9 | | 0.08 | | 0.05 | B | | 10 | 6.5 | Y | 4 | Bus,E,P | |
| 15.07 | 801497 | 7.7 | S | S PER | 7 | 6 | 0.57 | | 0.100 | B | | 14 | 7 | Y | 4 | van Loo,F.R | |
| 15.75 | 801498 | 8.7 | S | AAVSO | 4.3 | 4 | 0.17 | | 0.13 | N | 6.3 | 24 | 5.5 | Y | | Hayashi,A | A |
| 15.83 | 801499 | 9.0 | B | | 5 | | | | 0.088 | B | | 20 | | | | Mormil,V | |
| 15.868 | 801500 | 8.3 | S | CZ | | | | | 0.05 | B | | 7 | 5.2 | Y | 2 | Kourimsky,M | B |
| 15.90 | 801501 | 8.5 | S | 16 | | | | | 0.080 | B | 5 | 20 | 5.0 | Y | 3 | Milani,G.A | C |
| 15.90 | 801502 | 8.8 | S | S PER | 6 | 6 | 0.17 | | 0.15 | R | 8 | 43 | 6 | Y | 1 | Aerts,L | |
| 15.91 | 801503 | 9.4 | B | XX CAM | 3 | 4 | | | 0.08 | R | 15 | 43 | 4.5C | Y | 1 | Cluyse,L | D |
| 15.92 | 801504 | 9.2 | B | M | 8 | 3 | | | 0.080 | B | | 20 | | | | Shirokov,A | |
| 15.949 | 801505 | 8.5 | ? | 16 | 2 | 5 | 0.08 | 275 | 0.203 | SC | 10 | 80 | 4.6 | Y | 1 | Dietrich,M | E |
| 15.953 | 801506 | 8.6 | S | S PER | | 7 | | | 0.203 | SC | 10 | 80 | 4 | Y | | Conte,G | |
| 15.98 | 801507 | 9.0 | S | M | 5 | 3 | | | 0.060 | R | | 30 | | | | Solodkin,V | F |
| 15.98 | 801508 | 9.2 | B | M | 2.5 | | 0.1 | | 0.080 | R | | 29 | | | | Nesterov,Yu | |

NOTE A Tail PA 270 to 320.

NOTE B Fog.

NOTE C Haze.

NOTE D V magnitudes from AAVSO Atlas chart 16.

NOTE E (Observer indicated "A" method [Argelander?]. Ed.)

NOTE F m2 = 9.5 mag., d = 20 arc sec.

DATE: 16 AUG 1985

DATE: 16 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | AP | Ins | f/ | PWZ | Llm | DA | site | Observer(s) | Notes |
|----------|--------|-----|----|---------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|---------------|-------|
| 16.00 | 801509 | 8.1 | S | XX CAM | | 7 | 0.1 | | 0.125 | R | 5.0 | 19 | 6 | Y | 4 | Poitevin,P | |
| 16.00 | 801510 | 9.3 | S | S M | 4 | 3 | 0.1 | | 0.110 | B | | 20 | | | | Shirokov,A | |
| 16.02 | 801511 | 7.4 | S | S | 6.4 | 2 | 0.25 | 265 | 0.150 | N | 5 | 25 | 6.5 | Y | 2 | Merlin,J.C | |
| 16.03 | 801512 | 8.7 | S | S S PER | 6 | 6 | 0.17 | | 0.15 | R | 8 | 43 | 6 | Y | 1 | Aerts, L | |
| 16.03 | 801513 | 8.3 | S | S S PER | | 2 | | | 0.08 | B | | 15 | 6 | Y | 2 | Scholten,A | |
| 16.10 | 801514 | 7.8 | S | S S PER | 6 | 6 | 0.67 | | 0.05 | B | | 7 | 7 | Y | 4 | van Ioo,F.R | |
| 16.23 | 801515 | 8.3 | S | S S PER | 3.0 | 3 | 0.05 | 270 | 0.20 | SC | 10 | 64 | 4.8 | Y | 1 | Spratt,C.E | A |
| 16.41 | 801516 | 7.8 | S | S S PER | 6 | 5 | 0.83 | 268 | 0.080 | B | | 20 | 6.0 | Y | 10 | Morris,C.S | B |
| 16.41 | 801517 | 7.7 | ? | ? | 2 | 6 | 0.07 | 280 | 0.440 | N | 4.5 | 90 | | Y | 3 | Fabre, R | C |
| 16.87 | 801518 | 9.0 | S | S M | 5 | 3 | | | 0.060 | R | | 30 | | | | Solodkin, V | D |
| 16.889 | 801519 | 9.1 | S | AAVSO | | 3 | | | 0.08 | B | | 20 | 5.8 | Y | 2 | Siccoli, P | |
| 16.896 | 801520 | 8.3 | B | SAO | | 5 | | | 0.125 | R | 6.0 | 35 | | Y | 1 | Guthier, O | E |
| 16.910 | 801521 | 8.4 | S | AA | 5 | 7 | 0.17 | 265 | 0.19 | B | 4 | 38 | | Y | 1 | Mikuz, H | F |
| 16.91 | 801522 | 8.3 | S | S PER | | 2 | | | 0.08 | B | | 15 | | | | Scholten, A | |
| 16.92 | 801523 | | | | | 6 | 0.13 | 265 | 0.406 | N | 5.6 | 82 | 6.5 | Y | 4 | Bouma, R.J | |
| 16.94 | 801524 | 8.1 | S | S S PER | 10 | 3 | 0.18 | | 0.05 | B | | 10 | 6 | Y | 4 | Bus, F.P | |
| 16.979 | 801525 | 9.5 | S | S | | 5 | | | 0.084 | R | 6.3 | 25 | 6.5 | Y | 2 | Paradowski, M | |
| 16.99 | 801526 | 9.8 | B | M | 3.5 | | | | 0.080 | R | | 29 | | | | Nesterov, Yu | G |

NOTE A Active coma. (Observer indicated uncertainty in DC. Ed.)

NOTE B Tail was straight. It increased in width from 6 to 8 arc min. at end.

NOTE C (Observer gives limit as 16.2. Ed.)

NOTE D m2 = 10.0 mag., d = 20 arc sec.

NOTE E Coma nearly round, diameter 3-4 arc min.

NOTE F XX Cam also used for comparison stars. Instrument is flat-field Schmidt. Good conditions.

NOTE G Very thin tail by I Bredihin's class, elliptical head. [sic]

DATE: 17 AUG 1985

DATE: 17 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|---------|-----------|----|----------|-------|-------|-----|-----|------|----|------|-------------|-------|
| 17.00 | 801527 | 7.8 | S | USNOC | 4.8 | 6 | 0.05 38 | 0.080 | B | | 20 | | | 1 | Keitch,G.S | A |
| 17.01 | 801528 | 7.6 | S | S PER | 7 | 2 | | 0.05 | B | | 10 | 6.5 | Y | 4 | Bouma,R.J | |
| 17.04 | 801529 | 7.3 | S | | 5.9 | 2 | 0.27 288 | 0.150 | N | 5 | 25 | 6.5 | Y | 2 | Merlin,J.C | |
| 17.08 | 801530 | 7.8 | S | USNOC | | | 0.28 259 | 0.080 | B | | 20 | | | 1 | Keitch,G.S | B |
| 17.12 | 801531 | 8.6 | S | 16 | 4.2 | 4 | | 0.080 | B | | 11 | 6.0 | Y | 1 | Rossi,L | |
| 17.153 | 801532 | 7.7 | S | S PER | 7 | 3 | 5 | | 0.050 | B | 10 | 5.8 | Y | 2 | Sabia,J.D | C |
| 17.16 | 801533 | | | | | | 0.3 275 | 0.150 | B | | 25 | | | | Bortle,J.E | D |
| 17.16 | 801534 | 7.7 | S | USNOC | 10 | 5 | | 0.05 | B | | 10 | | | | Bortle,J.E | |
| 17.22 | 801535 | 8.1 | S | S PER | 3.5 | 4 | 0.07 272 | 0.20 | SC | 10 | 64 | 5.0 | Y | 1 | Spratt,C.E | E |
| 17.23 | 801536 | 7.9 | S | S PER | 5 | 3 | | 0.08 | B | | 11 | 4.5 | Y | 1 | Spratt,C.E | |
| 17.319 | 801537 | 8.4 | M | S PER | 3.2 | 7 | 0.12 274 | 0.15 | R | 5 | 62 | 6.6 | Y | 3 | Morrison,W | F |
| 17.71 | 801538 | 8.6 | S | AAVSO | 5 | 5 | 0.25 | 0.13 | N | 6.3 | 24 | 6.5 | Y | | Hayashi,A | G |
| 17.86 | 801539 | 9.0 | B | M | 5 | | | 0.088 | B | | 20 | | | | Mormil,V | |
| 17.874 | 801540 | 8.2 | S | S PER B | 4.5 | 5 | 0.25 290 | 0.152 | N | 5 | 44 | 5.8 | Y | 2 | Moeller,M | H |
| 17.885 | 801541 | 8.7 | B | | 5.2 | 3 | | 0.10 | B | | 14 | 6.0 | Y | 1 | Hasubick,W | |
| 17.90 | 801542 | 7.6 | S | S PER | 7 | 3 | | 0.05 | B | | 10 | 6.5 | Y | 4 | Bouma,R.J | |
| 17.90 | 801543 | 8.0 | S | S PER | 10 | 3 | | 0.05 | B | | 10 | 6 | Y | 4 | Bus,E.P | |
| 17.91 | 801544 | 8.4: | S | 16 | 2.0 | 6 | | 0.080 | B | 5 | 20 | 5.3 | Y | 3 | Milani,G.A | |
| 17.92 | 801545 | 8.2 | B | M | 1.2 | 3 | 0.1 | 0.047 | R | | 20 | | | | Serov,V | |
| 17.922 | 801546 | 8.1 | S | S PER | 4 | 4 | | 0.140 | SN | 3.6 | 19 | 6.0 | Y | 1 | Meozzi,D | |
| 17.94 | 801547 | 9.2 | B | XX CAM | 3 | 3 | | 0.08 | R | 15 | 43 | 4.5C | Y | 1 | Cluyse,L | I |
| 17.97 | 801548 | 9.5 | B | M | 3 | | | 0.080 | R | | 20 | | | | Nesterov,Yu | |
| 17.98 | 801549 | 8.4 | S | 16 | 4.7 | 5 | | 0.080 | B | | 11 | 5.5 | Y | 1 | Rossi,L | |
| 17.983 | 801550 | 8.5 | B | | 4 | 6 | 0.27 | 0.203 | N | 6 | 100 | | Y | 1 | Gomez,A | |
| 17.997 | 801551 | 8.3 | S | | 4 | 3 | 5 | 0.114 | N | 8.7 | 50 | 6.0 | Y | 1 | Fabrizio,M | |
| 17.997 | 801552 | 8.6 | B | AAVSO | 5 | 5 | 0.17 90 | 0.250 | SC | 10 | 125 | 5.8 | Y | 1 | Rodriguez,D | J |

NOTE A Jet 0.05 deg. long PA 38 deg.; gas tail 0.12 deg. long PA 245 deg.; dust fan 0.08 deg. long PA 270-228 deg.
 NOTE B Straight tail 0.28 deg. long PA 259 deg. 2 arc min. wide; dust tail 0.12 deg. long PA 319-230 deg.
 NOTE C Tail length = 7. [sic]
 NOTE D Coma's shape difficult to define but is definitely extended toward the southwest. Possibly the coma can be classed as slightly elliptical in shape (northeast-southwest). Bright central region is circular in outline. (Instrument used for this note not specified. Ed.)
 NOTE E Coma active, V-shaped. (Observer indicated uncertainty in DC. Ed.)
 NOTE F Clock face method used to estimate tail PA.
 NOTE G Tail PA 280 to 320.
 NOTE H Hazy.
 NOTE I V magnitudes from AAVSO Atlas chart 16.
 NOTE J (Coma and tail data are inconsistent with data on drawing report form. Ed.)

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|-------|-----|-----|--------|--------|-----|------|-------------|-------|
| 17.976 | 803021 | | 0.203 | N | 6.0 | 100 | 20 | | 1 | Gomez,A | A |
| 17.991 | 803022 | | 0.250 | SC | 10 | 125 | 15 5.8 | | 1 | Rodriguez,D | B |

NOTE A Field 30 arc min. at 100x. Central condensation very visible.
 NOTE B Field 0.5 deg. at 125x. Mag. 8.6; diameter 10 arc min. (Scale indication uninterpretable. Ed.)

SUB-NETWORK: PHOTOGRAPHY

| Date(UT) | AON# | FL | f/ | Ap | FOV | ExpM | Emulsion | ISO | Hyp | Gdng | Id/Typ | Site | Observer(s) | Notes |
|----------|--------|-------|-----|-------|------------|-------|--------------|--------|-----|------|--------|------|--------------|-------|
| 17.062 | 805106 | 0.135 | 2.8 | | 15.2 x10.2 | 20.00 | Kodak 2415 | | Y | M | 1/P | 1 | Izquierdo,J | A |
| 17.089 | 805107 | 0.300 | 1.5 | 0.200 | 6.9 x 4.6 | 15.00 | Fujichrome | 100/21 | N | O | 12/S | 2 | Genebriera,J | |
| 17.480 | 805108 | 0.135 | 2.8 | | 15.2 x10.2 | 15.00 | Fujichr. 400 | | N | S | 000/P | 1 | Sanford,J | B |

NOTE A (Observer reports emulsion cooled to 8 C. Ed.)
 NOTE B Push-processed to 800 ASA.

DATE: 18 AUG 1985

DATE: 18 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|------|--------|-----------|-----|------|-----|-------|-----|------|-----|-----|----|------|------------------|-------|
| 18.00 | 801553 | 8.2 | S | XX CAM | | 7 | | | 0.125 | R | 5.0 | 19 | 5.5 | Y | 4 | Poitevin,P | |
| 18.01 | 801554 | 8.2 | S | 16 | 5.2 | 4 | | | 0.050 | B | | 10 | 6.0 | Y | 1 | Rossi,L | |
| 18.02 | 801555 | 8.5 | S | 16 | 4 | 5 | | 270 | 0.080 | B | | 15 | 5.1 | Y | 1 | Glowinski,C | |
| 18.024 | 801556 | 8.5 | B | | 4 | 6 | 0.27 | | 0.25 | SC | 10 | 78 | | Y | 1 | Gomez,A | |
| 18.036 | 801557 | 8.0: | ? 16 | | 2 | 5 | 0.08 | 260 | 0.080 | B | | 15 | 5.0 | Y | 1 | Dietrich,M | A |
| 18.06 | 801558 | 8.4 | S | 16 | | 5 | | | 0.145 | N | 8 | 30 | 5.5 | Y | 1 | van der Laan,T.A | |
| 18.104 | 801559 | 9.0: | B | | 4 | 6 | 0.17 | | 0.256 | N | 5.6 | 90 | 5.5 | Y | 1 | Pedraz,S | |
| 18.24 | 801560 | 8.1 | S | S PER | 4.0 | 5 | 0.09 | 275 | 0.20 | SC | 10 | 64 | 5.5 | Y | 1 | Spratt,C.E | B |
| 18.278 | 801561 | 8.5 | S | S PER | 3.3 | 5 | 0.05 | | 0.15 | R | 5 | 62 | 6.4 | Y | 3 | Morrison,W | |
| 18.41 | 801562 | 7.2 | M | AA | 8.5 | 6 | 1.50 | 262 | 0.080 | B | | 20 | 7.0 | Y | 8 | Morris,C.S | C |
| 18.55 | 801563 | 10.5 | B | M | | | | | 0.215 | N | 9 | 100 | | | | Knyazyuk,N | |
| 18.85 | 801564 | 7.4 | S | | 14.0 | 3 | 0.42 | 253 | 0.050 | B | | 7 | 7.0 | Y | | Merlin,J.C | |
| 18.86 | 801565 | 8.9 | B | M | | 5 | | | 0.088 | B | | 20 | | | | Mormil,V | |
| 18.90 | 801566 | 9.4: | S | M | | 4 | 0.1 | | 0.110 | B | | 20 | | | | Shirokov,A | D |
| 18.906 | 801567 | 8.5 | S | S PER | 4.7 | 7 | 0.22 | 267 | 0.080 | B | | 20 | | Y | 2 | Cavagna,M | |
| 18.910 | 801568 | 8.4 | B | SAO | 2.3 | 0.6 | 0.23 | 272 | 0.125 | R | 6.0 | 35 | | Y | 2 | Guthier,O | E |
| 18.934 | 801569 | 8.1 | S | S PER | | 4 | | | 0.140 | SN | 3.6 | 19 | 6.2 | Y | 1 | Meozzi,D | |
| 18.94 | 801570 | 8.7 | S | S PER | 3 | 7 | 0.17 | 277 | 0.200 | SC | 10.0 | 44 | 5.8 | Y | 1 | Maraziti,A | |
| 18.95 | 801571 | 9.5 | S | M | | 4 | | | 0.110 | B | | 20 | | | | Shirokov,A | |
| 18.951 | 801572 | 9.0 | S | AAVSO | | 5 | | | 0.20 | SC | 10 | 50 | 5.0 | Y | 1 | Sicoli,P | |
| 18.96 | 801573 | 7.6 | S | S PER | | 7 | 0.23 | | 0.05 | B | | 10 | 6.5 | Y | 4 | Bouma,R.J | |
| 18.99 | 801574 | 9.7 | B | M | 2.5 | | | | 0.080 | R | | 29 | | | | Nesterov,Yu | |

NOTE A (Observer indicated "A" method [Argelander?]. Ed.)

NOTE B Very active. (Observer indicated uncertainty in DC. Ed.)

NOTE C Comet distinctly brighter. Tail has fanned appearance near coma with fan swinging north of main tail. Length of fan 15: arc min.

NOTE D m2 = 11.0 mag.

NOTE E Condensation almost stellar. DC on long axis 5-6, DC on short axis 7. Shorter tail was broad, covering PA 302-322 deg.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | Durm | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|-------|-----|-----|------------|------|-----|------|-------------|-------|
| 18.099 | 803023 | | 0.256 | N | 5.6 | 90 | 15 | 5.5 | 1 | Pedraz,S | A |
| 18.102 | 803024 | | 0.25 | SC | 10 | 78 | 15 | | 1 | Gomez,A | B |
| 18.990 | 803025 | 1 | 0.114 | | 3.7 | 21, 28, 70 | 30 | 5.5 | 1 | Gomez,T.L | C |

NOTE A Field 1 deg. at 90x. Asymmetric tail - northern part appeared brighter than the other. [sic]

NOTE B Field 1 deg. at 78x. With this instrument and the wide field eyepiece (Erflie 32), the dust tail appeared more prominent than in other telescopes. The tail showed a "bell" shape rather than cylindrical shape in the previous observation (17/08/85, Ed.).

NOTE C Central condensation very visible. Coma 4 arc min. Dust tail 7 arc min. at PA 285 deg. Rich-field telescope used.

SUB-NETWORK: PHOTOGRAPHY

| Date(UT) | AON# | FL | f/ | Ap | FOV | ExpM | Emulsion | ISO | Hyp | Gdng | Id/Typ | Site | Observer(s) | Notes |
|----------|--------|-------|-----|----|------------|-------|------------|-----|-----|------|--------|------|-------------|-------|
| 18.094 | 805109 | 0.135 | 2.8 | | 15.2 x10.2 | 30.00 | Kodak 2415 | | Y | S | 000/P | 1 | Izquierdo,J | A |

NOTE A The comet appear slightly moved. [sic] Very good seeing during all exposure. [sic]

DATE: 19 AUG 1985

DATE: 19 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | ACM# | ml | MM | Chart | Coma size | DC | Tail PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-----|----|--------|-----------|----|---------|-------|-------|------|-----|------|----|------|-------------|-------|
| 19.01 | 801575 | 9.2 | B | M | 5 | 4 | | 0.080 | R | | 30 | | | | Maydik,A | |
| 19.04 | 801576 | 8.4 | S | AAVSO | 8.5 | 6 | | 0.080 | B | | 20 | | | | Zanotta,M | A |
| 19.10 | 801577 | 7.8 | S | S PER | 6 | 5 | 0.67 | 0.05 | B | | 7 | 7 | Y | 3 | Van Ioo,F,R | |
| 19.11 | 801578 | 8.3 | B | 16 | 4 | 3 | | 0.080 | B | | 11 | 5.5 | Y | 1 | Rossi,L | |
| 19.465 | 801579 | 9.2 | 7 | S PER | 1.3 | 4 | 0.23 | 0.203 | M | 5 | 120 | 6.2 | Y | 1 | Underhay,E | B |
| 19.83 | 801580 | 8.1 | B | M | 2 | 4 | 0.1 | 0.047 | R | | 20 | | | | Serov,V | |
| 19.89 | 801581 | 8.3 | S | S PER | 2 | 1 | 0.1 | 0.08 | B | | 15 | 5.5 | N | 1 | Scholten,A | |
| 19.90 | 801582 | 9.4 | S | M | 2 | 5 | | 0.110 | B | | 20 | | | | Shirokov,A | |
| 19.93 | 801583 | 8.1 | S | 17 | 2 | 6 | | 0.140 | SN | 3.6 | 19 | 6.5 | Y | 1 | Meozzi,D | C |
| 19.93 | 801584 | 8.9 | B | XX CAM | 2 | 5 | | 0.08 | R | 15 | 43 | 4.5C | Y | 1 | Cluyse,I | D |
| 19.950 | 801585 | 8.0 | S | | 6.0 | 5 | 0.15 | 285 | 0.080 | B | 15 | 5.8 | Y | 3 | Haver,R | |
| 19.980 | 801586 | 9.2 | S | | 4.5 | 6 | | 0.089 | R | 5.5 | 18 | 5.5 | N | 1 | Ventura,F | E |
| 19.98 | 801587 | 9.4 | B | M | 2 | 0 | | 0.110 | B | | 20 | | | | Shirokov,A | |
| 19.99 | 801588 | 8.5 | S | 16 | 3.1 | 6 | | 0.060 | R | 11.7 | 18 | 5.5 | Y | 1 | Rossi,L | F |
| 19.990 | 801589 | 8.4 | M | | | 1 | | 0.07 | R | 20.3 | 70 | 6.0 | Y | 1 | Luga,M | G |

NOTE A I found a central condensation whose diameter was approximately 1.2 arc min.

NOTE B Condensation behind coma. Narrow ray for type I tail. The comet was definitely seen as a faint smudge in my 8x30 finder.

NOTE C SS Aur also used as comparison star source.

NOTE D Visual magnitudes from AAVSO Atlas chart 16.

NOTE E Tail observed.

NOTE F DC uncertain.

NOTE G Tail probably visible.

DATE: 20 AUG 1985

DATE: 20 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | m1 | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|---------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 20.00 | 801590 | 10.2 | B | M | 2 | | | | 0.080 | R | | 29 | | | | Nesterov,Yu | A |
| 20.01 | 801591 | 7.9 | S | S PER | 10 | 3 | | | 0.05 | B | | 10 | 6.5 | Y | 4 | Bus,E.P | |
| 20.02 | 801592 | | | | | 5 | 0.33 | 271 | 0.254 | JB | 6 | 48 | 6.5 | Y | 4 | Bouma,R.J | |
| 20.02 | 801593 | 7.5 | S | S PER | | 3 | | | 0.05 | B | | 10 | 6.5 | Y | 4 | Bouma,R.J | |
| 20.02 | 801594 | 9.4 | S | M | 2 | 3 | | | 0.110 | B | | 20 | | | | Shirokov,A | B |
| 20.111 | 801595 | 7.6: | S | 16 | 8 | 5 | | | 0.140 | SN | 3.6 | 25 | 5 | Y | 1 | Linder,J | C |
| 20.41 | 801596 | 7.9 | M | S PER | 6.5 | 5 | 2.0 | 271 | 0.080 | B | | 20 | 6.0 | Y | 10 | Morris,C.S | |
| 20.469 | 801597 | 9.4 | ? | S PER | 1.1 | 3 | 0.23 | | 0.203 | N | 5 | 120 | 6.1 | Y | 1 | Underhay,E | D |
| 20.85 | 801598 | 7.4 | S | | 9.0 | 3 | 0.47 | 282 | 0.050 | B | | 7 | 6.5 | Y | | Merlin,J.C | |
| 20.863 | 801599 | 8.2 | S | S PER B | 5 | 5 | 0.25 | 290 | 0.152 | N | 5 | 44 | 6.1 | Y | | Moeller,M | E |
| 20.875 | 801600 | 9.3 | ? | | 6 | 3 | | | 0.13 | N | 8 | 25 | 6.0 | Y | 1 | Lieder,F | |
| 20.90 | 801601 | 8.8 | S | | 3 | 5 | | | 0.114 | N | 8.7 | 50 | 5.2 | | 1 | Noller,M | |
| 20.92 | 801602 | 7.8 | S | S PER | 6 | 6 | 0.75 | | 0.05 | B | | 7 | 7 | Y | 3 | van Loo,F.R | |
| 20.924 | 801603 | | | | 1.8 | 4 | 0.06 | 282 | 0.203 | SC | 10 | 50 | 6.0 | Y | 1 | Hasubick,W | |
| 20.938 | 801604 | 8.3 | B | | 3.6 | 4 | | | 0.10 | B | | 14 | 6.0 | Y | 1 | Hasubick,W | |
| 20.938 | 801605 | 8.3 | B | | 3.6 | 4 | | | 0.108 | B | | 14 | 6.0 | Y | 1 | Koch,V | |
| 20.942 | 801606 | 8.0: | ? | 16 | 2 | 5 | 0.08 | 275 | 0.203 | SC | 10 | 50 | 4.5 | Y | 1 | Dietrich,M | F |
| 20.955 | 801607 | 8.3 | B | | 3.6 | 4 | | | 0.08 | B | | 20 | 6.0 | Y | 1 | Koch,B.O | G |
| 20.96 | 801608 | 7.6 | S | 16,17 | 6 | 5 | | | 0.156 | N | 5 | 24 | 6.5 | Y | 4 | Bouma,R.J | |
| 20.962 | 801609 | 8.7 | B | 17 | 2.2 | 6 | | | 0.113 | N | 8 | 22 | 5.5 | Y | 1 | Schambeck,C | |
| 20.97 | 801610 | 7.9 | S | 16 | 6 | 5 | | | 0.156 | N | 5 | 24 | 6.5 | Y | 4 | Bus,E.P | |
| 20.99 | 801611 | 10.3 | B | M | 1.8 | | | | 0.080 | R | | 29 | | | | Nesterov,Yu | A |

NOTE A Granulation in the central condensation.

NOTE B m2 = 10.5 mag.

NOTE C Coma diameter uncertain. Some clouds.

NOTE D Condensation behind coma. Narrow ray for type I tail. The comet was definitely seen as a faint smudge in my 8x30 finder.

NOTE E Site is Schwarzwald = Black Forest.

NOTE F (Observer indicated "A" method [Argelander?]. Ed.)

NOTE G Faint tail.

SUB-NETWORK: PHOTOGRAPHY

| Date(UT) | AON# | FL | f/ | Ap | FOV | ExpM | Emulsion | ISO | Hyp | Gdng | Id/Typ | Site | Observer(s) | Notes |
|----------|--------|-------|-----|-------|-----------|-------|------------|-----|-----|------|--------|------|--------------|-------|
| 20.076 | 805110 | 0.300 | 1.5 | 0.200 | 6.9 x 4.6 | 25.00 | Kodak 2415 | | N | X | 000/S | 2 | Genebriera,J | A |

NOTE A (Observer gives EFL = 300x4 (mm) on original report form. Ed.)

DATE: 21 AUG 1985

DATE: 21 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail PA | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|---------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 21-02 | 801612 | 8.2 | S | 16 | | | | | 0.063 | B | 10 | 9 | 5.2 | Y | 1 | Kammerer,A | A |
| 21-02 | 801613 | | | | 2.5 | 5 | 0.08 | 280 | 0.203 | SC | 10 | 81 | 5.2 | Y | 1 | Kammerer,A | A |
| 21-031 | 801614 | 8.5 | B | 16 | 3.4 | 5 | 0.10 | 285 | 0.140 | SN | 3.6 | 25 | 5.5 | Y | 4 | Linder,J | |
| 21-035 | 801615 | 8.5 | B | 16 | 2.7 | 4 | 0.18 | 285 | 0.14 | SN | 3.6 | 25 | 5.5 | Y | 4 | Botziger,B | |
| 21-04 | 801616 | 8.4 | S | | 3.5 | 6 | 0.01 | 325 | 0.114 | N | 8.7 | 50 | 6.0 | Y | 1 | Nolle,M | B |
| 21-05 | 801617 | 8.3 | S | AAVSO | 6.2 | 4 | | | 0.080 | B | | 20 | | | | Zanotta,M | C |
| 21-07 | 801618 | | | | | | 0.22 | 275 | 0.305 | N | 5.0 | 60 | | | | Zanotta,M | D |
| 21-22 | 801619 | 7.6 | S | AA | 8 | 2 | | | 0.080 | B | | 20 | | | | Green,D.W.E | E |
| 21-24 | 801620 | 8.1 | M | AA | 2.5 | 7 | | | 0.229 | R | 12 | 86 | | | | Green,D.W.E | E |
| 21-24 | 801621 | 8.3 | S | AA | 2.5 | 7 | | | 0.229 | R | 12 | 86 | | | | Green,D.W.E | E |
| 21-44 | 801622 | 7.5 | M | AA | 8 | 6 | 1.25 | 270 | 0.080 | B | | 20 | 7.0 | Y | 8 | Morris,C.S | |
| 21-85 | 801623 | 7.4 | S | | 11.0 | 3 | 0.57 | 271 | 0.050 | B | | 7 | 6.5 | Y | 1 | Morris,J.C | |
| 21-86 | 801624 | 8.9 | S | | 2 | | 0.25 | 85 | 0.410 | N | 4.2 | 86 | 6.8 | Y | 1 | Clark,M | |
| 21-861 | 801625 | 8.4 | B | | 5.3 | 3 | | | 0.10 | B | | 14 | 6.0 | Y | 1 | Hasubick,W | |
| 21-862 | 801626 | 8.7 | B | 16 | 4.4 | 4 | | | 0.080 | B | | 20 | 6.0 | Y | 1 | Koch,B.O | |
| 21-910 | 801627 | 8.3: | B | 16 | 2.2 | 5 | 0.08 | 270 | 0.080 | B | | 15 | 4.6 | Y | 1 | Dietrich,M | |
| 21-947 | 801628 | 8.4 | B | SRO | 3.2 | 5 | 0.13 | 325 | 0.125 | R | 6.0 | 35 | | Y | 1 | Guthier,O | F |
| 21-96 | 801629 | 8.6 | S | | 3.5 | 5 | 0.02 | 325 | 0.114 | N | 8.7 | 50 | 5.6 | Y | 2 | Nolle,M | G |
| 21-982 | 801630 | 8.6 | B | 17 | 4.0 | 5 | | | 0.113 | N | 8 | 22 | 5.5 | Y | 1 | Schambeck,C | H |
| 21-997 | 801631 | 8.7 | B | | 3.0 | 4 | 0.05 | 312 | 0.063 | R | 13 | 34 | 6.0 | Y | 1 | Zische,E | |

NOTE A Tail very difficult, 30 deg. broad.

NOTE B Tail length 0.5 arc min.

NOTE C The observation was troubled by haze and by a nearby bright star.

NOTE D At 60X I found a circular central condensation with a star-like central point.

NOTE E Coma diameter approximate.

NOTE F (Observer indicated 'A' method [Argelander?]. Ed.)

NOTE G (Observer gives 2 values for DC: 8 and 6-7. Tail PA 305-312 deg. Additional notes illegible. Ed.)

NOTE H Tail length 1 arc min. See drawing.

DATE: 22 AUG 1985

DATE: 22 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|--------|-----------|----|------|-----|-------|-----|-----|-----|------|----|------|--------------|-------|
| 22.01 | 801632 | 8.2 | S | 17 | 6.0 | 5 | | | 0.080 | B | | 11 | 6.0 | Y | 1 | Rossi,L | |
| 22.010 | 801633 | 8.6 | B | 16 | | 5 | | 240 | 0.15 | N | 8 | 30 | 5.0 | Y | 1 | Bottger,B | |
| 22.01 | 801634 | 8.4 | S | RR PER | | 4 | 0.25 | 265 | 0.203 | SC | 10 | 50 | 6.5 | Y | 3 | Comello,G | |
| 22.01 | 801635 | 8.3 | S | 16 | 6 | 3 | | | 0.155 | N | 5 | 30 | 5 | Y | 1 | Zanstra,W.T | |
| 22.02 | 801636 | 7.9 | B | SC2000 | 5.1 | 6 | | | 0.050 | B | | 7 | 6.0 | Y | 1 | Rossi,L | |
| 22.030 | 801637 | 8.0 | S | | 6.0 | 5 | 0.23 | 280 | 0.080 | B | | 15 | 6.1 | Y | 3 | Haver,R | |
| 22.043 | 801638 | 8.0 | S | 17 | | 5 | | | 0.203 | SC | 10 | 51 | 6.3 | Y | 1 | Meozzi,D | A |
| 22.05 | 801639 | 8.3 | S | S PER | 7 | 5 | 0.17 | | 0.150 | R | 8 | 34 | 6 | Y | 1 | Aerts,L | |
| 22.05 | 801640 | 8.3 | S | S PER | 7 | 5 | 0.17 | | 0.15 | R | 8 | 34 | 6 | Y | 1 | Aerts,L | |
| 22.08 | 801641 | 7.5 | S | 16,17 | | 3 | | | 0.05 | B | | 10 | 6.5 | Y | 4 | Bouma,R.J | |
| 22.085 | 801642 | 8.5 | B | | 2.8 | 4 | 0.08 | 312 | 0.063 | R | 13 | 34 | 6.0 | Y | 1 | Zische,E | |
| 22.12 | 801643 | 7.7 | S | S PER | | 3 | | | 0.05 | B | | 7 | 6.5 | Y | 4 | Bus,E.P | |
| 22.25 | 801644 | 8.3 | S | S PER | 3.5 | 5 | 0.03 | 265 | 0.20 | SC | 10 | 64 | 5.0 | Y | 1 | Spratt,C.E | B |
| 22.319 | 801645 | 8.6 | S | S PER | 3.4 | 5 | 0.06 | 257 | 0.15 | R | 5 | 62 | 6.5 | Y | 3 | Morrison,W | C |
| 22.392 | 801646 | 8.0 | M | S PER | 2.3 | 5 | | | 0.254 | N | 4.5 | 46 | 4.5 | Y | 1 | De Young,J | |
| 22.89 | 801647 | 8.8 | B | XX CAM | 3 | 4 | | | 0.08 | R | 15 | 43 | 4.5C | Y | 1 | Cluyse,L | D |
| 22.931 | 801648 | 9.4: | ? | | 5.4 | 5 | | | 0.064 | R | 6.3 | 25 | 6 | Y | 2 | Paradowski,M | |

NOTE A SS Aur also used as comparison star source.
 NOTE B (Observer indicated uncertainty in DC. Ed.)
 NOTE C Clock face method used to estimate tail PA.
 NOTE D V magnitudes from AAVSO Atlas chart 16.

DATE: 25 AUG 1985

DATE: 25 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|--------|-----------|-----|------|-----|-------|-----|-----|-----|-------|----|------|------------------|-------|
| 25.00 | 801682 | 10.2 | B | M | 1.8 | | | | 0.080 | R | | 29 | | | | Nesterov,Yu | A |
| 25.055 | 801683 | 7.9 | S | | 7.0 | 5 | 0.43 | 280 | 0.080 | B | | 15 | 6.8 | Y | 4 | Haver,R | B |
| 25.07 | 801684 | 8.0 | S | SC2000 | 7.5 | 4 | | | 0.050 | B | | 7 | 6.0 | Y | 1 | Rossi,L | |
| 25.07 | 801685 | 8.3 | S | 16 | | 4 | 0.08 | 248 | 0.145 | N | 8 | 30 | 6 | N | 1 | van der Laan,T.A | |
| 25.08 | 801686 | 7.6 | S | AAVSO | 5.0 | 6 | 0.10 | 255 | 0.080 | B | | 20 | | | 1 | Keitch,G.S | C |
| 25.08 | 801687 | 7.6 | S | AAVSO | 5.6 | | | | 0.050 | B | | 10 | | | 1 | Keitch,G.S | |
| 25.10 | 801688 | 8.3 | S | S PER | 6 | 6 | 0.20 | | 0.150 | R | 8 | 34 | 5.5C | Y | 1 | Aerts,L | |
| 25.10 | 801689 | 8.3 | S | S PER | 6 | 6 | 0.20 | | 0.15 | R | 8 | 34 | 5.5C | Y | 1 | Aerts,L | |
| 25.44 | 801690 | 7.4 | M | AA | 6 | 7 | 0.67 | 275 | 0.080 | B | | 20 | 7.0 | Y | 11 | Morris,C.S | D |
| 25.85 | 801691 | 8.7 | S | M | 0.3 | 9 | | 15 | 0.110 | N | 7 | 54 | | | | Aleynikov,A | |
| 25.95 | 801692 | 9.1 | B | XX CAM | 2.5 | 4 | | | 0.08 | R | 15 | 43 | 4.5CM | Y | 1 | Cluyse,L | E |
| 25.954 | 801693 | 8.5 | B | SAO | 2.3 | 0.5 | | | 0.125 | R | 6.0 | 35 | | Y | 2 | Guthier,O | F |
| 25.98 | 801694 | 10.0 | B | M | 2.5 | | | | 0.080 | R | | 29 | | | | Nesterov,Yu | A |
| 25.99 | 801695 | 8.9 | B | M | 5 | 4 | | | 0.080 | R | | 30 | | | | Maydik,A | |

NOTE A Granulation in the central condensation.

NOTE B Fan shaped coma.

NOTE C Spike 0.10 deg. long PA 255 deg., gas tail 0.17 deg. long PA 300 deg., dust fan 0.28 deg. long PA 255-300 deg.

NOTE D 10 arc min. fan tail from main tail to PA 310 deg.

NOTE E V magnitudes from AAVSO Atlas chart 16.

NOTE F Comet diffuse. DC on long axis 6, DC on short axis 7-8.

DATE: 26 AUG 1985

DATE: 26 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AO# | ml | MM | Chart | Coma size | DC | Tail PA | Ap | Ins | f/ | Pvr | Llm | DA | Site | Observer(s) | Notes | |
|----------|--------|-----|----|--------|-----------|----|---------|-----|-------|----|-----|-----|-----|------|-------------|-------------|---|
| 26.02 | 801696 | | | | | | 0.25 | 278 | 0.254 | JB | 6 | 48 | 6.5 | Y | 4 | Bouma,R.J | |
| 26.02 | 801697 | 8.2 | S | R PER | | 4 | 0.33 | 270 | 0.203 | SC | 10 | 50 | 6.5 | Y | 3 | Comello,G | |
| 26.04 | 801698 | 7.6 | S | 16,17 | 6 | 2 | | | 0.05 | B | | 10 | 6.5 | Y | 4 | Bouma,R.J | |
| 26.05 | 801699 | 7.6 | S | S PER | 10 | 5 | | | 0.05 | B | | 10 | 6.5 | Y | 4 | Bouma,R.J | |
| 26.06 | 801700 | 8.3 | S | S PER | 6 | 6 | 0.11 | | 0.15 | R | 8 | 34 | 6 | Y | 1 | Bus,E.P | |
| 26.06 | 801701 | 8.2 | S | SS AUR | | 3 | | | 0.08 | B | | 15 | 6 | Y | 1 | Aerts,L | |
| 26.10 | 801702 | 8.3 | S | S 17 | 2.5 | 5 | | 290 | 0.080 | B | | 15 | 5.4 | Y | 1 | Scholten,A | |
| 26.100 | 801703 | 9.0 | S | S | 5 | 6 | | | 0.089 | R | 5.5 | 18 | | N | 1 | Glowinski,C | |
| 26.16 | 801704 | 7.7 | S | AAVSO | 4.8 | 6 | 0.50 | 300 | 0.050 | B | | 10 | | N | 1 | Ventura,F | A |
| 26.79 | 801705 | 8.2 | S | SAO | | 6 | | | 0.08 | B | | 15 | 5 | Y | 1 | Keitch,G.S | B |
| 26.98 | 801706 | 8.9 | B | M | 5 | 4 | | | 0.080 | R | | 30 | | Y | 1 | Seargeat,D | |
| | | | | | | | | | | | | | | | | Maydik,A | |

NOTE A Tail observed.

NOTE B Very low. (Observer indicated uncertainty in limiting magnitude. Ed.)

DATE: 27 AUG 1985

DATE: 27 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes | |
|----------|--------|------|----|--------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|----------|--|
| 27.051 | 801707 | 8.2 | B | SAO | 3.7 0.8 | | 0.13 | 289 | 0.125 | R | 6.0 | 35 | | Y | 2 | Guthier,O | A | |
| 27.06 | 801708 | 8.3: | B | SC2000 | 4.3 | 7 | | | 0.080 | B | | 11 | 6.0 | Y | 1 | Rossi,L | B | |
| 27.10 | 801709 | 7.2 | S | SS AUR | | | | | 0.080 | B | | 15 | 6 | C | Y | 1 | Feijth,H | |
| 27.301 | 801710 | 8.5 | B | AA | | | | | 0.15 | N | 8 | 30 | 5.6 | Y | 2 | Ferrin,I | | |
| 27.301 | 801711 | 7.9 | B | AA | | | | | 0.20 | C | 10 | 50 | 5.6 | Y | 2 | Ferrin,I | C | |
| 27.43 | 801712 | 7.3 | M | AA | 8 | 7 | 1.50 | 290 | 0.080 | B | | 20 | 7.0 | Y | 3 | Morris,C.S | | |
| 27.458 | 801713 | 8.9 | ? | S PER | 1.1 | 4 | 0.25 | | 0.203 | N | 5 | 120 | 6.2 | Y | 1 | Underhay,E | D | |
| 27.46 | 801714 | 7.3 | S | XX PER | | | 0.6 | 275 | 0.050 | B | | 10 | 7 | Y | 1 | Hale,A | | |

NOTE A Coma deformed. DC on long axis 6, DC on short axis 7-8.

NOTE B As. coma PA 255 deg.

NOTE C (Instrument characteristics suggest Schmidt-Cass. Ed.)

NOTE D The comet was definitely seen as a faint smudge in my 8x30 finder.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|-------|-----|-----|--------|------|-----|------|-------------|-------|
| 27.950 | 803031 | 0.24 | 0.114 | N | 8.7 | 50 | 5 | 5.6 | 1 | Nolle,M | A |

NOTE A Nucleus good to see, coma like an egg, tail (?). South-east line seems sharper. (Notes translated from German by IHW staff. Ed.)

DATE: 28 AUG 1985

DATE: 28 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|--------|-----------|----|------|-----|-------|-----|-----|-----|------|----|------|------------------|-------|
| 28.00 | 801715 | 8.9 | B | M | 5 | 4 | | | 0.080 | R | | 30 | | | | Maydik,A | |
| 28.00 | 801716 | 10.0 | B | M | 2.3 | | | | 0.080 | R | | 29 | | | | Nesterov,Yu | A |
| 28.02 | 801717 | 9.3 | B | M | 2.6 | 5 | | | 0.110 | N | 7 | 54 | | | | Aleynikov,A | |
| 28.05 | 801718 | 7.8 | B | M | | | | | 0.050 | B | | 7 | | | | Mormil,V | |
| 28.05 | 801719 | | | | 6 | | 0.3 | | 0.160 | N | | 50 | | | | Mormil,V | |
| 28.067 | 801720 | 8.6 | B | SAO | 3.5 | | | | 0.125 | R | 6.0 | 35 | | Y | 2 | Guthier,O | B |
| 28.07 | 801721 | 8.0 | S | AAVSO | 7.4 | 4 | | | 0.080 | B | | 20 | M | | | Zanotta,M | C |
| 28.10 | 801722 | 7.7 | S | SS AUR | 5 | 6 | 0.17 | | 0.05 | B | | 10 | 6 | N | 1 | van Loo,F.R | |
| 28.11 | 801723 | 7.7 | S | SS AUR | 8 | 4 | 0.28 | 265 | 0.06 | B | | 12 | 6.5 | Y | 1 | van de Weg,R.L.W | |
| 28.11 | 801724 | 8.0 | B | SS AUR | | | | | 0.06 | B | | 12 | 6.5 | Y | 1 | van de Weg,R.L.W | |
| 28.12 | 801725 | 7.6 | S | | 5.0 | 3 | 0.25 | 269 | 0.150 | N | 5 | 25 | 6.5 | Y | 2 | Merlin,J.C | |
| 28.13 | 801726 | 8.2 | S | S PER | 6 | 6 | 0.12 | | 0.15 | R | 8 | 34 | 5.5T | N | 1 | Aerts,L | |
| 28.153 | 801727 | | | | 0.9 | 7 | | | 0.203 | SC | 10 | 160 | 5 | Y | | Conte,G | |
| 28.153 | 801728 | | | | | | 0.13 | 270 | 0.203 | SC | 10 | 80 | 5 | Y | | Conte,G | |
| 28.313 | 801729 | 8.7 | S | | 7 | 0 | | | 0.444 | N | 4.4 | 221 | 5.6 | Y | 1 | Glassett,W | |
| 28.33 | 801730 | 7.6 | S | USNOC | 6.5 | 5 | | | 0.08 | B | | 20 | | | | Bortle,J.E | D |
| 28.368 | 801731 | 9.4 | S | SS AUR | 3.0 | 5 | | | 0.15 | R | 5 | 62 | 6.2 | Y | 3 | Morrison,W | |

NOTE A Granulation in the central condensation.

NOTE B Hint of broader tail. (Observer gives 2 values for DC: 7 and 5. Ed.)

NOTE C Moonlight.

NOTE D With 50 cm reflector at 96x coma appears small but highly elongated in a tear-drop shape with an extraordinarily sharp, intense condensation. Straight, narrow gas tail (only 1/3 as wide as coma's diameter) stretches across field of view.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|----|------------|------|-----|------|-------------|-------|
| 28.139 | 803032 | 0.06 | 0.40 | N | 5 | 81,254,407 | 20 | 6.5 | 2 | Merlin,J.C | A |

NOTE A Spike at PA 75 deg., diffuse, jet at PA 212 deg.; tail at PA 252 deg., bright and narrow spike on south edge of the diffuse tail, not exactly "centered" on nucleus; jet at PA 301 deg., then curved along the tail. Non-stellar nucleus, denser area northward, very dark on south side of the tail. (A second drawing is included to show detail of inner structure at same scale. Ed.)

DATE: 29 AUG 1985

DATE: 29 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes | |
|----------|--------|-----|----|--------|-----------|----|------|----|-------|-----|----|-----|-----|----|------|-------------|---------|---|
| 29.04 | 801732 | 9.6 | B | M | | 8 | 0.1 | 45 | 0.110 | N | 7 | 54 | | | | Aleynikov,A | | |
| 29.04 | 801733 | 8.9 | B | M | 5 | 4 | | | 0.080 | R | | 30 | | | | Maydik,A | | |
| 29.05 | 801734 | 7.8 | B | M | | | | | 0.050 | B | | 7 | | | | Mormil,V | | |
| 29.05 | 801735 | | | | 6 | | 0.2 | | 0.160 | N | | 50 | | | | Mormil,V | | |
| 29.09 | 801736 | 8.2 | S | SS AUR | 5 | 6 | 0.05 | | 0.150 | R | 8 | 34 | 4 | M | N | 1 | Aerts,L | A |
| 29.09 | 801737 | 8.2 | S | SS AUR | 5 | 6 | 0.05 | | 0.15 | R | 8 | 34 | 4 | M | N | 1 | Aerts,L | A |

NOTE A X AUR also used as comparison star source.

DATE: 30 AUG 1985

DATE: 30 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | ACN# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-----|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 30.00 | 801738 | 9.7 | ? | | 2.5 | | | | 0.035 | R | 4 | | | | | Guryanov,S | A |
| 30.102 | 801739 | 8.3 | ? | | 2.0 | 3 | | | 0.110 | R | 6.8 | 125 | M | Y | 1 | Lipski,P | B |

NOTE A Magnitude method = photographic.

NOTE B With brighter nucleus. (Translated by IBW staff. Observer gave limit as 11.0. Ed.)

DATE: 31 AUG 1985

DATE: 31 AUG 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-----|----|--------|-----------|----|------|----|------|-----|----|-----|------|----|------|-------------|-------|
| 31.354 | 801740 | 9.3 | S | SS AUR | 3.6 | 4 | | | 0.15 | R | 5 | 62 | 5.6M | N | 3 | Morrison,W | A |

NOTE A Moon prevents dark adaptation.

DATE: 1 SEP 1985

DATE: 1 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|-------|----|-------|-----------|----|------|----|-------|-----|----|-----|-----|----|------|-------------|
| 1.88 | 801741 | 10.4: | S | M | 1.7 | 5 | | | 0.290 | N | 14 | 96 | | | | Guryanov,S |

DATE: 2 SEP 1985

DATE: 2 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|-----|----|--------|-----------|----|------|----|-------|-----|------|-----|------|----|------|-------------|
| 2.08 | 801742 | 8.5 | S | SS AUR | 3 | 7 | | | 0.200 | SC | 10.0 | 66 | 4.8M | Y | 1 | Maraziti,A |

DATE: 3 SEP 1985

DATE: 3 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|-----|----|--------|-----------|----|------|----|-------|-----|------|-----|------|----|------|-------------|
| 3.08 | 801743 | 8.6 | S | SS AUR | 3 | 6 | | | 0.200 | SC | 10.0 | 44 | 4.8M | Y | 1 | Maraziti,A |

DATE: 4 SEP 1985

DATE: 4 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|-----|----|-------|-----------|----|------|----|-------|-----|----|-----|-----|----|------|-------------|
| 4.04 | 801744 | 8.2 | B | E | | | | | 0.050 | B | | | 7 | | | Mozmil,V |
| 4.04 | 801745 | | | | 5 | | | | 0.160 | N | | | 50 | | | Mozmil,V |

DATE: 6 SEP 1985

DATE: 6 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|-----|----|--------|-----------|----|------|----|-------|-----|----|-----|------|----|------|-------------|
| 6.16 | 801746 | 9.1 | ? | SS AUR | | 3 | | | 0.250 | N | | 250 | 5.5C | Y | 1 | van Loo,F.R |
| 6.16 | 801747 | 9.1 | ? | SS AUR | | 3 | | | 0.250 | N | | 250 | 5.5C | Y | 1 | van Loo,F.R |

DATE: 7 SEP 1985

DATE: 7 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|-----|-----|------|----|------|-------------|-------|
| 7.00 | 801748 | 7.5: | S | AAVSO | 8 | | | | 0.080 | B | | 20 | M | | 1 | Keitch,G.S | A |
| 7.074 | 801749 | 8.5 | B | SAO | 3.6 | 3 | | | 0.125 | R | 6.0 | 35 | | Y | 1 | Guthier,O | B |
| 7.75 | 801750 | 8.8 | S | AAVSO | 3 | 3 | | | 0.13 | N | 6.3 | 44 | 3.5M | Y | | Hayashi,A | |

NOTE A Bright moon 10 deg. away. Coma diameter uncertain.

NOTE B Diffuse condensation.

DATE: 8 SEP 1985

DATE: 8 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|--------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 8.836 | 801751 | 8.2: | S | 35 | 4 | 2 | | | 0.080 | B | | 20 | S M | Y | 1 | Gozzoli,E | |
| 8.939 | 801752 | 8.5 | S | SS AUR | 5 | 5 | | | 0.483 | N | 4.3 | 115 | 5.4 | Y | 1 | Moeller,M | A |
| 8.94 | 801753 | 8 : | B | AA | | | | | 0.110 | B | | 20 | | | | Chernis,K | |

NOTE A Hazy.

DATE: 10 SEP 1985

DATE: 10 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | ACN# | ml | MM | Chart | Coma size | DC | Tail PA | AP | Ins | I/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-----|----|--------|-----------|-----|---------|-----|-------|----|------|-----|----|------|--------------|-------|
| 10.02 | 801754 | 8.6 | S | SS AUR | 6 | 7 | 0.17 | 260 | 0.080 | B | 15 | 6 | Y | 1 | van Icoo,F,R | |
| 10.063 | 801755 | 8.6 | B | SAO | 2.5 | 3 | | | 0.125 | R | 35 | | Y | 1 | Guthier,O | A |
| 10.113 | 801756 | 8.2 | B | | 4.5 | 5 | | | 0.110 | R | 47 | | Y | | Lipski,P | B |
| 10.119 | 801757 | 8.2 | B | | 4.5 | 5 | | | 0.110 | R | 47 | | Y | | Lipski,P | B |
| 10.4342 | 801758 | 8.5 | S | SAO | 5 | 6 | 0.15 | 293 | 0.254 | N | 32 | M | Y | 1 | Machholz,D | C |
| 10.77 | 801759 | 8.6 | S | CZ ORI | 1.8 | 5 | | | 0.08 | B | 15 | 6.2 | Y | 1 | Seargent,D | |
| 10.77 | 801760 | | S | SS AUR | 3 | 4 | | | 0.152 | N | 76 | | Y | 1 | Seargent,D | |
| 10.97 | 801761 | 9.2 | S | SS AUR | 3 | 4 | | | 0.200 | SC | 10.0 | | Y | 2 | Marzitti,A | |
| 10.979 | 801762 | 8.3 | S | | 2.5 | 2.0 | 0.02 | 280 | 0.080 | B | 20 | 6.5 | Y | 2 | Parisio,R | |

NOTE A Diffuse.

NOTE B Round, star occultation. (Observer gave limit as 12.0. Ed.)

NOTE C 23 $\frac{1}{2}$ moon up.

DATE: 11 SEP 1985

DATE: 11 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail PA | AP | Ins | f/ | Pvr | Lim | DA | Site | Observer(s) | Notes | |
|----------|--------|------|----|--------|-----------|-----|---------|-----|-------|----|------|------|------|------|-------------|------------|---|
| 11.030 | 801763 | 8.1 | S | E | 6.0 | 4 | 0.37 | 300 | 0.080 | B | 15 | 6.4M | Y | 4 | Haver,R | A | |
| 11.04 | 801764 | 8.6 | B | E | 4 | | | | 0.050 | B | 7 | | | | Mormil,V | | |
| 11.06 | 801765 | 8.9: | S | 59 | 1.5 | 7 | 0.03 | | 0.160 | N | 50 | 5.0C | Y | 1 | Milani,G.A | B | |
| 11.06 | 801766 | 8.3 | S | AAVSO | 6.8 | 2 | | | 0.200 | N | 4 | | Y | 1 | Zanotta,M | C | |
| 11.067 | 801767 | 8.9 | B | SAO | 3.1 | 3 | | | 0.125 | R | 6.0 | | Y | 1 | Guthier,O | D | |
| 11.069 | 801768 | 8.0 | B | SAO | 6.6 | 4 | | | 0.10 | B | 14 | 6.0 | Y | 1 | Rasubick,W | | |
| 11.08 | 801769 | 8.1 | S | USNO | 6.5 | 4.0 | | | 0.080 | B | 11 | 6.0 | Y | 1 | Rossi,I | | |
| 11.08 | 801770 | 8.1 | S | 59 | 2.1 | 5 | | | 0.203 | SC | 10 | | Y | 1 | Kammerer,A | | |
| 11.097 | 801771 | 8.7 | S | 59 | | | | | 0.08 | B | 20 | 6.0 | Y | 1 | Koch,V | | |
| 11.10 | 801772 | 7.8 | B | AAVSO | 7.1 | | 0.30 | | 0.080 | B | 20 | | | 1 | Keitch,G.S | E | |
| 11.10 | 801773 | 7.5 | S | AAVSO | | 5 | | | 0.050 | B | 10 | | | 1 | Keitch,G.S | | |
| 11.10 | 801774 | 8.8 | S | AAVSO | | 5 | | | 0.20 | SC | 10 | 5.4 | N | 1 | Sicoli,P | | |
| 11.107 | 801775 | 8.8 | B | 59 | | 3 | | | 0.08 | B | 20 | 6.0 | Y | 1 | Koch,B.O | | |
| 11.115 | 801776 | 8.0 | B | 59 | 1.7 | | | | 0.150 | N | 8 | 30 | 5.5 | Y | 1 | Bottger,B | F |
| 11.133 | 801777 | 9.2 | B | 59 | 4 | | | | 0.203 | N | 6 | 60 | | Y | 2 | Gallego,J | G |
| 11.160 | 801778 | 8.0 | B | | 4 | | | | 0.203 | N | 6 | 120 | | Y | 2 | Gallego,J | |
| 11.229 | 801779 | 8.0 | B | 59 | | 1 | | | 0.050 | B | 10 | 5.5M | Y | 3 | Sabia,J.D | | |
| 11.368 | 801781 | 9.6 | S | CZ ORI | 2.4 | 5 | | | 0.15 | R | 5 | 62 | 6.3 | Y | 1 | Morrison,W | |
| 11.71 | 801782 | 10.1 | S | CZ ORI | 0.6 | 2 | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | H |
| 11.85 | 801783 | 8.9 | S | AA | 3 | 4 | 0.2 | 289 | 0.312 | N | 5 | 49 | 6.0 | Y | 1 | Pearce,A | |
| 11.91 | 801784 | 9.2 | S | SS AUR | 3 | 5 | 0.2 | 275 | 0.200 | SC | 10.0 | 77 | 5.0C | Y | 2 | Maraziti,A | |
| 11.94 | 801785 | 8.2 | B | AA | 4 | 4 | 0.2 | 275 | 0.110 | B | 20 | | | 1 | Chernis,K | | |
| 11.958 | 801786 | 8.8 | S | SS AUR | 4 | 4 | | | 0.483 | N | 4.3 | 115 | 4.0 | Y | 1 | Moeller,M | I |

NOTE A Central condensation 0.5-1 arc min.

NOTE B The comet appeared extremely diffuse, with no visible central condensation and low surface brightness.

NOTE C Diffuse, little condensation.

NOTE D As above.

NOTE E Tail PA 349-324 deg. Inner mass 3.6 arc min. diameter.

NOTE F Drawing #1.

NOTE G Drawing #2.

NOTE H Clear sky.

NOTE I Hazy.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|-------|-----|-----|--------|------|-----|------|-------------|-------|
| 11.153 | 803033 | | 0.203 | N | 6.0 | 60 | | | 1 | Gallego,J | A |
| 11.160 | 803034 | | 0.203 | N | 6.0 | 120 | | | 1 | Gallego,J | B |

NOTE A Drawing 1. Field 1 deg. 5 arc min. at 60x. (Duration not indicated. Time of observation is assumed to be end time. Ed.)

NOTE B Drawing 2. Field 32 arc min. (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)

DATE: 12 SEP 1985

DATE: 12 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|--------|-----------|----|------|-----|-------|-----|------|-----|------|----|------|-------------|-------|
| 12.02 | 801787 | 9.0 | S | SS AUR | 2.5 | 5 | | | 0.200 | SC | 10.0 | 77 | 5.0C | Y | 2 | Maraziti,A | |
| 12.02 | 801788 | 8.8 | B | SAO | 2.0 | 5 | | | 0.203 | SC | 10 | 81 | 5.2 | Y | 1 | Kammerer,A | A |
| 12.03 | 801789 | 8.8 | B | E | | | | | 0.050 | B | | 7 | | | | Mormil,V | |
| 12.03 | 801790 | | | | 4 | | 0.1 | | 0.160 | N | | 50 | | | | Mormil,V | |
| 12.063 | 801791 | 8.5 | S | AA | 6 | 2 | | | 0.080 | B | | 10 | | Y | 1 | Mikuz,H | B |
| 12.07 | 801792 | 8.4 | M | USNO | 5.5 | | | | 0.080 | B | | 11 | 6.0 | Y | 1 | Rossi,L | |
| 12.090 | 801793 | 9.7 | B | 59 | 1.4 | 3 | | | 0.150 | N | 8 | 30 | 5.0C | Y | 1 | Bottger,B | |
| 12.09 | 801794 | 7.4 | S | | 5.0 | 3 | 0.50 | 268 | 0.060 | B | | 9 | 6.5 | Y | 2 | Merlin,J.C | |
| 12.10 | 801795 | 7.9 | S | AAVSO | 8.1 | 5 | 0.23 | 278 | 0.080 | B | | 20 | | | 1 | Keitch,G.S | C |
| 12.10 | 801796 | 7.9 | S | AAVSO | | | | | 0.050 | B | | 10 | | | 1 | Keitch,G.S | |
| 12.30 | 801797 | 8.2 | S | AA | 4.5 | 3 | | | 0.080 | B | | 20 | | | | Green,D.W.E | D |
| 12.33 | 801798 | 7.5 | S | AAVSO | 5.3 | 3 | | | 0.08 | B | | 20 | | | | Bortle,J.E | |
| 12.33 | 801799 | | | | 2.4 | 7 | 0.5 | 293 | 0.317 | N | 6 | 68 | | | | Bortle,J.E | E |
| 12.330 | 801800 | 9.5 | S | CZ ORI | 2.7 | 5 | 0.14 | 285 | 0.15 | R | 5 | 62 | 6.3 | Y | 3 | Morrison,W | F |
| 12.392 | 801801 | 8 | M | AAVSO | 5.0 | 5 | 0.33 | 274 | 0.61 | | 13.5 | 110 | 4.0 | Y | 3 | De Young,J | |
| 12.45 | 801802 | 8.6 | M | NPS | | | 0.4 | 305 | 0.050 | B | | 10 | 6.5 | Y | 2 | Hale,A | |
| 12.45 | 801803 | 8.6 | M | NPS | 6 | 4 | 0.67 | 295 | 0.080 | B | | 20 | 6.5 | Y | 6 | Morris,C.S | |
| 12.4618 | 801804 | 8.6 | S | SAO | 4 | 6 | 0.22 | 280 | 0.254 | N | 3.8 | 32 | | | 1 | Machholz,D | |
| 12.70 | 801805 | 10.1 | S | CZ ORI | 1 | 3 | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | |
| 12.78 | 801806 | 8.9 | S | AAVSO | 5 | 3 | 0.12 | 320 | 0.13 | N | 6.3 | 24 | 5.0 | Y | | Hayashi,A | |
| 12.95 | 801807 | 8.6 | B | AA | 3 | 5 | 0.2 | 275 | 0.110 | B | | 20 | | | | Chernis,K | |

NOTE A Condensation east of center, elliptical, no nucleus.

NOTE B CZ Ori also used for comparison stars. Excellent conditions.

NOTE C Gas tail 0.23 deg. long PA 278 deg.; narrow dust fan 0.12 deg. long PA 278 deg.

NOTE D Coma diameter approximate.

NOTE E At 55x coma is sharply condensed and fan-shaped. Fan is perhaps 35 deg. in PA wide, opening toward PA 293 deg. At 68x coma is fan-shaped and overall fairly diffuse except for a tiny, sharply condensed region with an almost stellar center which is drastically offset ESE of coma's center (PA 113 deg.). This offset places the condensation 2/3 of the way from the coma's "center" to the leading, sunward edge of the coma. At 170x condensation less stellar and without internal structure but very dense and bright. 170x indicates presence of narrow tail spine WNW from nucleus. Straight tail, as wide as coma's diameter initially, extends 30 arc min. in PA 293. Tail possibly more sharply defined on its southern edge.

NOTE F Clock face method used to estimate tail PA.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|----|--------|------|-----|------|-------------|-------|
| 12.109 | 803035 | 0.05 | 0.40 | N | 5 | 81,254 | 15 | 6.5 | 2 | Merlin,J.C | A |

NOTE A Spike at PA 111 deg., diffuse, about sunward, tail streamer at PA 240 deg., then curved westward along the tail; tail at PA 268 deg.; tail streamer at PA 292 deg., then curved slightly northward. Parabolic-shaped [sic] envelope with clearly defined limits. More diffuse north of the tail, darker between tail southern edge and the limit of the coma.

SUB-NETWORK: PHOTOGRAPHY

| Date(UT) | AON# | FL | f/ | Ap | FOV | ExpM | Emulsion | ISO | Hyp | Gdng | Id/Typ | Site | Observer(s) |
|----------|--------|-------|-----|-------|-----------|-------|-------------|--------|-----|------|--------|------|-------------|
| 12.096 | 805114 | 2.000 | 5.0 | 0.400 | 1.0 x 0.7 | 10.00 | Kodak Tri-X | 400/27 | N | | L/P | 1 | Arbour,R |

DATE: 13 SEP 1985

DATE: 13 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|--------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|--------------|-------|
| 13.083 | 801808 | 9.5 | M | CZ ORI | 2.5 | 1 | | | 0.130 | R | 4 | 21 | 5.8 | Y | 2 | Campos,J.A.S | A |
| 13.083 | 801809 | 8.8 | B | SAO | 2.9 | 3 | | | 0.125 | R | 6.0 | 35 | | Y | 1 | Guthier,O | B |
| 13.083 | 801810 | 8.1 | B | | 5.0 | 4 | | | 0.110 | R | 6.8 | 47 | | Y | 1 | Lipski,P | C |
| 13.101 | 801811 | 9.6 | M | CZ ORI | 2.0 | 2 | | | 0.200 | SC | 10 | 35 | 5.8 | Y | 2 | Campos,J.A.S | A |
| 13.11 | 801812 | 8.2 | S | AAVSO | 5.4 | 5 | 0.20 | | 0.080 | B | | 20 | | Y | 1 | Keitch,G.S | D |
| 13.13 | 801813 | 8.8 | S | SS AUR | 4 | 5 | 0.10 | | 0.080 | B | | 15 | 6 | Y | 1 | van Loo,F.R | |
| 13.132 | 801814 | 9 | S | 60 | 1.1 | 3 | | | 0.203 | SC | 10 | 62 | 4 | Y | 1 | Linder,J | E |
| 13.135 | 801815 | 8.3 | B | | 4 | 4 | | | 0.203 | N | 6 | 120 | | Y | 3 | Gallego,J | F |
| 13.368 | 801816 | 8.4 | M | CZ ORI | 2.3 | 4 | 0.08 | 269 | 0.254 | N | 4.5 | 46 | 4.5 | Y | 1 | De Young,J | G |
| 13.392 | 801817 | 9.8 | S | CZ ORI | 2.1 | 4 | | | 0.15 | R | 5 | 62 | 6.6 | Y | 3 | Morrison,W | |
| 13.72 | 801818 | 10.1 | S | CZ ORI | 1 | 3 | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | H |
| 13.79 | 801819 | 8.9 | S | AAVSO | 5 | 3 | 0.10 | 300 | 0.13 | N | 6.3 | 24 | 5.5 | Y | | Hayashi,A | |
| 13.95 | 801820 | 8.6 | B | AA | 3 | 5 | 0.2 | 275 | 0.110 | B | | 20 | | Y | | Chernis,K | |

NOTE A Seeing good.

NOTE B Diffuse, hint of tail.

NOTE C Round. (Observer gave limit as 12.2. Ed.)

NOTE D Tail recorded is fan PA 267-284 deg.

NOTE E Hazy and cloudy.

NOTE F Drawing #3.

NOTE G Coma more diffuse and magnitude fainter, still has strong central condensation.

NOTE H Coma diameter approximate.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|-----|--------|------|-----|------|-------------|-------|
| 13.135 | 803036 | | 0.20 | N | 6.0 | 120 | | | 2 | Gallego,J | A |

NOTE A Drawing 3. Field 32 arc min. (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)

SUB-NETWORK: PHOTOGRAPHY

| Date(UT) | AON# | FL | f/ | Ap | FOV | ExpM | Emulsion | ISO | Hyp | Gdng | Id/Typ | Site | Observer(s) | Notes |
|----------|--------|-------|-----|-------|-----------|------|------------|-----|-----|------|--------|------|-------------|-------|
| 13.355 | 805115 | 0.305 | 1.5 | 0.203 | 6.8 x 4.5 | 3.00 | Kodak 2415 | | Y | S | 1/P | 1 | Dilsizian,R | A |

NOTE A Giacobini-Zinner and Halley. Exposure duration approximate.

DATE: 14 SEP 1985

DATE: 14 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AO# | ml | MM | Chart | Coma size | DC | Tail PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-----|----|----------|-----------|----|---------|-------|-----|-----|-----|-----|----|------|-------------------|-------|
| 14.00 | 801821 | 8.3 | M | M | | 2 | | 0.065 | N | 7.7 | 33 | 5.5 | Y | 1 | Serov, V | |
| 14.09 | 801822 | 8.5 | S | CZ ORI | 6 | 1 | 0.25 | 0.145 | B | 8.0 | 30 | 6.5 | Y | 2 | van Ger Laan, T.A | |
| 14.09 | 801823 | 8.5 | S | CZ ORI | | 1 | 0.25 | 0.08 | B | | 15 | 6 | Y | 1 | Bouma, R.J | |
| 14.09 | 801824 | 8.2 | S | V ORI | | 1 | 0.25 | 0.110 | B | | 24 | 5 | Y | 1 | Schoiten, A | |
| 14.10 | 801825 | 8.4 | S | V ORI | | 5 | | 0.110 | B | 5 | 24 | 5 | Y | 1 | Fejth, H | |
| 14.11 | 801826 | 9.0 | S | SS AUR | 5 | 4 | 0.13 | 0.080 | B | 5.6 | 15 | 6 | Y | 1 | van Lee, F.R | |
| 14.115 | 801827 | 9 | B | S SU TAU | 4 | 3 | 0.18 | 0.256 | N | 5.6 | 85 | 5.5 | Y | 2 | Cardiel, N | A |
| 14.12 | 801828 | 7.8 | S | SU TAU | 6 | 3 | 0.50 | 0.114 | N | 3.7 | 70 | 5.4 | Y | 2 | Bus, E.P | |
| 14.121 | 801829 | 9.0 | B | B | 3 | 5 | 0.13 | 0.254 | N | 5.6 | 59 | 6.5 | Y | 2 | Gomez, T.I | B |
| 14.125 | 801830 | 8.5 | B | B | 4 | 4 | 0.17 | 0.256 | N | 5.6 | 85 | 5.5 | Y | 1 | Gallejo, J | C |
| 14.129 | 801831 | 8.5 | B | B | 4 | 3 | 0.17 | 0.25 | SC | 10 | 100 | 5.6 | Y | 1 | Gomez, A | D |
| 14.135 | 801832 | 9.3 | B | B | 4 | 3 | 0.17 | 0.25 | SC | 10 | 125 | 5.5 | Y | 2 | Cardiel, N | E |
| 14.137 | 801833 | 8.5 | B | B | 4 | 5 | 0.17 | 0.256 | N | 5.6 | 85 | 5.5 | Y | 1 | Sanz, A | |
| 14.146 | 801834 | 8.5 | B | CZ ORI | 3.1 | 4 | 0.17 | 0.256 | N | 5.6 | 85 | 5.5 | Y | 1 | Pedraz, S | |
| 14.323 | 801835 | 9.6 | S | USNO | 5 | 2 | | 0.15 | R | 5 | 62 | 6.3 | Y | 3 | Morrison, W | |
| 14.34 | 801836 | 8.5 | S | USNO | 5 | 2 | | 0.08 | B | | 20 | | | 20 | Bortle, J.E | F |
| 14.382 | 801837 | 9.0 | S | USNO | 2.9 | 4 | 0.6 | 0.317 | N | 6 | 68 | | Y | 1 | De Young, J | G |
| 14.39 | 801838 | 8.5 | M | CZ ORI | 2.1 | 4 | 0.07 | 0.315 | N | 4.5 | 46 | 4.5 | Y | 1 | Green, D.W.E | |
| 14.51 | 801839 | 8.4 | S | AA | 5.5 | 2 | 1.50 | 0.080 | B | | 20 | 7.0 | Y | 12 | Morris, C.S | H |
| 14.51 | 801840 | 8.6 | S | NPS | 9 | 5 | 1.50 | 0.080 | B | | 20 | 7.0 | Y | 12 | Morris, C.S | |
| 14.52 | 801841 | 8.7 | M | NPS | | 5 | 0.33 | 0.310 | N | 6 | 61 | 6.5 | Y | 11 | Hale, A | |
| 14.52 | 801842 | | | | | | 0.45 | 0.280 | N | 4.2 | 86 | 6.3 | Y | 11 | Hale, A | |
| 14.85 | 801843 | 9.2 | S | AA | 2.5 | 5 | 0.45 | 0.280 | N | 4.2 | 86 | 6.3 | Y | 11 | pearce, A | |

NOTE A Drawing #1.

NOTE B Rich-field telescope.

NOTE C Drawing #4.

NOTE D Tail length approximate.

NOTE E Drawing #2.

NOTE F Comet much fainter.

NOTE G Very wide coma/tail. With 50 cm reflector working at 96x G-Z appears as a large comet in miniature: parabolic coma, sharp bright condensation, long ever widening tail. With 32 cm reflector edges of tail very diffuse overall but tail brighter by a factor of at least 5 times than any period in August. Comet drastically fainter!

NOTE H Coma diameter approximate.

SUB-NETWORK: DRAWING

| Date(UT) | AO# | Scale | Ap | Ins | f/ | Pwr(s) | Durm | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|-------|-----|-----|--------|------|-----|------|--------------|-------|
| 14.111 | 803037 | | 0.26 | N | 5.6 | 85 | 10 | 5.5 | 1 | Cardiel, N | A |
| 14.118 | 803038 | | 0.114 | N | 3.7 | 21, 70 | 9 | 5.4 | 3 | Gomez, T.I | B |
| 14.125 | 803039 | | 0.256 | N | 5.6 | 85 | | | 3 | Gallejo, J | C |
| 14.131 | 803040 | | 0.203 | SC | 10 | 100 | 6 | 5.6 | 1 | Gomez, A | D |
| 14.135 | 803041 | | 0.25 | SC | 10 | 178 | 8 | 5.5 | 1 | Sanz, A | E |
| 14.135 | 803042 | | 0.25 | SC | 10 | 123 | 15 | 5.5 | 1 | Cardiel, N | F |
| 14.141 | 803043 | | 0.256 | N | 5.6 | 85 | | | 1 | Pedraz, S | F |
| 14.427 | 803044 | | 0.438 | N | 4.5 | 220 | 9 | 5.8 | 1 | Troiani, D.M | G |

NOTE A Drawing 1. Tail about 11 arc min. Field 45 arc min. at 85x.

NOTE B Coma 3 arc min. Tail 8 arc min. at PA 302 deg. Rich-field telescope used.

NOTE C Drawing 4. Field 43 arc min. Two tails visible with structure. (Duration not indicated. Time of observation is assumed to be end time.) Drawing data inferred from magnitude report form. Ed.)

NOTE D Field 30 arc min. at 100x. Coma 4 arc min. Tail about 10 arc min. Tail & coma less developed (delta effect?). (In certain moments I was sometimes able to perceive "multiple" tails pointing westward.) With major instruments, it was clearly visible other tail possibly the dust tail. [sic]

NOTE E Drawing 2. Field 22 arc min. (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)

NOTE F Field 4 arc min. at 85x. Two tails visible (gas & dust).

NOTE G DC = 5, tail PA 230 deg.

SUB-NETWORK: PHOTOGRAPHY

| Date(UT) | AO# | FL | Ap | f/ | FOV | ExpM | Emulsion | ISO | Hyp | Cdng | Id/Typ | Site | Observer(s) | Notes |
|----------|--------|-------|-----|-------|-----------|-------|------------|---------|-----|------|--------|------|--------------|-------|
| 14.304 | 805116 | 0.305 | 1.5 | 0.203 | 6.8 x 4.5 | 5.00 | Kodak 2415 | 1000/31 | Y | X | 15/P | 1 | Sabia, J.D | A |
| 14.355 | 805117 | 0.305 | 1.5 | 0.203 | 6.8 x 4.5 | 3.00 | Kodak 2415 | 1000/31 | Y | S | 2/P | 1 | Dilsizian, R | A |
| 14.476 | 805118 | 0.500 | 3.5 | 0.140 | 4.1 x 2.7 | 12.00 | 3M 1000 | 1000/31 | N | O | 1/N | 12 | Edberg, S | B |
| 14.487 | 805119 | 0.500 | 3.5 | 0.140 | 4.1 x 2.7 | 8.00 | 3M 1000 | 1000/31 | N | O | 2/N | 12 | Edberg, S | B |

NOTE A Giacobini-Zinner and Halley. Exposure duration approximate.

NOTE B No Halley image visible.

DATE: 15 SEP 1985

DATE: 15 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-----|----|--------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 15.06 | 801844 | 7.2 | S | | 13.0 | 3 | | | 0.060 | B | | 9 | 6.5 | Y | 2 | Merlin,J.C | |
| 15.118 | 801845 | 8.3 | B | V MON | 2.1 | 5 | | 30 | 0.330 | N | 4.5 | 59 | 6.5 | Y | 1 | Castino,R | A |
| 15.34 | 801846 | 8.5 | S | AAVSO | 7 | 4 | | | 0.08 | B | | 20 | | | | Bortle,J.E | |
| 15.34 | 801847 | 9.1 | S | AAVSO | 1.4 | 6 | 0.2 | 280 | 0.317 | N | 6 | 68 | | | | Bortle,J.E | B |
| 15.386 | 801848 | 8.2 | M | CZ ORI | | | | | 0.05 | B | | 7 | 6.5 | Y | 4 | De Young,J | |
| 15.386 | 801849 | 8.7 | M | CZ ORI | 3.1 | 3 | 0.15 | 278 | 0.254 | N | 4.5 | 46 | 6.5 | Y | 4 | De Young,J | |
| 15.5125 | 801850 | 8.7 | S | SAO | 3 | 6 | 0.15 | 287 | 0.254 | N | 3.8 | 32 | | | 1 | Machholz,D | |
| 15.75 | 801851 | 8.4 | S | CZ ORI | | | | | 0.08 | B | | 15 | 6.2 | Y | 1 | Seargent,D | |
| 15.75 | 801852 | | | | | | 0.13 | | 0.152 | N | 5 | 29 | | | 1 | Seargent,D | |
| 15.77 | 801853 | 9.9 | B | M | | | | | 0.215 | N | 9 | 100 | | | | Knyazyuk,N | |

NOTE A (Observer gives tail length as 7 min. 90 sec. Ed.)

NOTE B Coma diameter uncertain. At 68x coma consists of a small, dense, bright condensation 0.3 arc min. in diameter, surrounded by a totally diffuse shell of material which is parabolic in outline. At 170x at the center of the condensed region is a tiny "nucleus" only a few arc sec. in diameter. Tail initially as wide as opening of parabolic envelope. Thereafter widening as it advances. Tail perhaps 5x to 10x brighter than in August.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|----|--------|------|-----|------|-------------|-------|
| 15.080 | 803045 | 0.08 | 0.40 | N | 5 | 254 | 10 | 6.5 | 2 | Merlin,J.C | A |

NOTE A Jet at PA 8 deg., spike at PA 97 deg., nearly sunward; tail streamer at PA 238 deg.; tail at PA 268 deg.; tail streamer at PA 285 deg.

SUB-NETWORK: PHOTOGRAPHY

| Date(UT) | AON# | FL | f/ | Ap | FOV | ExpM | Emulsion | ISO | Hyp | Gdng | Id/Typ | Site | Observer(s) | Notes |
|----------|--------|------|-----|------|-----------|------|--------------|-----|-----|------|--------|------|-------------|-------|
| 15.339 | 805120 | 0.63 | 1.8 | 0.35 | 3.3 x 2.2 | 4.50 | Kodak 103a-F | | N | | 4/P | 1 | Ferrin,I | A |

NOTE A Giacobini-Zinner and Halley. Instrument is Schmidt camera.

DATE: 16 SEP 1985

DATE: 16 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|---------|-----------|----|------|-----|-------|-----|-----|-----|------|----|------|-------------|-------|
| 16.05 | 801854 | 9.2 | B | E | | | | | 0.050 | B | | 7 | | | | Mormil,V | |
| 16.05 | 801855 | | | | 5 | | 0.2 | | 0.160 | N | | 50 | | | | Mormil,V | |
| 16.097 | 801856 | 9.2 | B | SAOSA74 | 3.8 | 3 | | | 0.125 | R | 6.0 | 35 | | Y | 1 | Guthier,O | A |
| 16.10 | 801857 | 9.0 | S | CZ ORI | 3 | 6 | | | 0.100 | B | | 14 | 5.5C | Y | 1 | van Ioo,F.R | |
| 16.10 | 801858 | 8.3 | B | M | | | | | 0.065 | N | 7.7 | 33 | | | | Serov,V | |
| 16.167 | 801859 | 9.5: | B | | 6 | | | | 0.203 | N | 6 | 120 | | Y | 2 | Gallego,J | B |
| 16.337 | 801860 | 9.5 | S | CZ ORI | 2.8 | 4 | | | 0.15 | R | 5 | 62 | 6.3 | Y | 3 | Morrison,W | |
| 16.37 | 801861 | 9.2 | S | AAVSO | 4.0 | 3 | 0.2 | 290 | 0.317 | N | 6 | 68 | | | | Bortle,J.E | C |
| 16.37 | 801862 | 8.4 | S | AAVSO | 8 | 3 | | | 0.08 | B | | 20 | | | | Bortle,J.E | |
| 16.371 | 801863 | | | | | | 0.18 | 275 | 0.445 | N | 4.5 | 80 | 6.3 | Y | 3 | Morrison,W | D |
| 16.45 | 801864 | 8.3 | M | AA | 9 | 4 | 1.50 | 308 | 0.080 | B | | 20 | 7.0 | Y | 11 | Morris,C.S | E |

NOTE A Diffuse, some brightness recovered.

NOTE B Drawing #5.

NOTE C Parabolic, rather sharply condensed coma. No division between coma and beginnings of tail. Dense flow of bright material extends tailward from "nucleus" at 68x and 110x. The "nucleus" is much less pronounced than in August.

NOTE D Clock face method used to estimate tail PA.

NOTE E NPS also used as comparison star source.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|-------|-----|-----|--------|------|-----|------|-------------|-------|
| 16.167 | 803046 | | 0.203 | N | 6.0 | 120 | | | 1 | Gallego,J | A |

NOTE A Drawing 5. Field 32 arc min. Two tails visible with structure. (Duration not indicated. Time of observation is assumed to be end time. Drawing data inferred from magnitude report form. Ed.)

DATE: 17 SEP 1985

DATE: 17 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|--------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 17.05 | 801865 | 9.5 | B | M | | | | | 0.050 | B | | 7 | | | | Mormil,V | |
| 17.05 | 801866 | | | | 4 | | | | 0.150 | N | | 50 | | | | Mormil,V | |
| 17.08 | 801867 | 8.5 | S | AAVSO | 7.1 | 4 | 0.45 | 295 | 0.080 | B | | 20 | | | | Zanotta,M | A |
| 17.28 | 801868 | 8.8 | S | AA | 7.2 | 5 | | | 0.203 | N | 6 | 38 | | | | Green,D.W.E | B |
| 17.29 | 801869 | 8.3 | S | AA | 10.2 | 2 | | | 0.080 | B | | 20 | | | | Green,D.W.E | B |
| 17.35 | 801870 | 8.6 | S | AAVSO | 4 | 3 | | | 0.08 | B | | 20 | | | | Bortle,J.E | |
| 17.35 | 801871 | 9.0 | S | AAVSO | 2.6 | 5 | 0.2 | 280 | 0.317 | N | 6 | 68 | | | | Bortle,J.E | C |
| 17.47 | 801872 | 8.3 | S | AA | 8.5 | 4 | 0.92 | 295 | 0.080 | B | | 20 | 7.0 | Y | 6 | Morris,C.S | D |
| 17.5097 | 801873 | 8.8 | S | AA | 3 | 6 | 0.25 | 279 | 0.254 | N | 3.8 | 32 | | Y | 1 | Machholz,D | |
| 17.68 | 801874 | 10.0 | S | CZ ORI | 1.2 | 5 | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | |
| 17.757 | 801875 | 8.7 | S | CZ ORI | | | | | 0.08 | B | | 15 | 5.7 | Y | 1 | Seargent,D | E |
| 17.82 | 801876 | 9.3 | S | AA | 1.6 | 4 | 0.17 | 258 | 0.317 | N | 5 | 49 | 6.2 | Y | | Pearce,A | |

NOTE A With my 0.305 meter f/5 Newtonian reflector at 60x and 150x I was able to see a strong round central condensation.

NOTE B Coma diameter approximate.

NOTE C At 170x there is a not quite stellar nucleus at the focus of the parabolic envelope, heavily imbedded in bright material. Tail long and relatively bright. Initially as wide as coma's diameter, widening thereafter.

NOTE D Comet involved with stars. Tail extremely faint.

NOTE E Haze.

DATE: 18 SEP 1985

DATE: 18 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|--------|-----------|----|------|-----|-------|-----|------|-----|------|----|------|------------------|-------|
| 18.000 | 801877 | 8.2: | S | 60 | 3 | 1 | | | 0.080 | B | | 20 | 5 | N | 1 | Gozzoli,E | A |
| 18.02 | 801878 | 9.4 | S | Y MON | | 3 | | | 0.203 | SC | 10 | 80 | 6 | Y | 3 | Comello,G | |
| 18.03 | 801879 | 9.3 | S | SS AUR | | | | | 0.200 | SC | 10.0 | 44 | C | Y | 2 | Maraziti,A | |
| 18.10 | 801880 | 9.0 | S | CZ ORI | 3 | 4 | 0.17 | | 0.203 | SC | 10.0 | 80 | 6 | Y | 3 | Comello,G | |
| 18.11 | 801881 | 8.7 | S | CZ ORI | 3 | 3 | 0.17 | 270 | 0.254 | JB | 6 | 48 | 6.5 | Y | 2 | Bouma,R.J | |
| 18.11 | 801882 | 9.5 | S | CZ ORI | 3 | 1 | | | 0.145 | N | 8.0 | 48 | 6.5 | Y | 1 | van der Laan,T.A | |
| 18.13 | 801883 | 10.2 | B | SU TAU | 2.5 | 7 | 0.05 | | 0.254 | N | 5.0 | 70 | 5.5C | Y | 1 | Kuipers,G | |
| 18.132 | 801884 | 9.3 | S | CZ ORI | 4 | 3 | | | 0.080 | B | | 10 | | Y | 1 | Mikuz,H | B |
| 18.14 | 801885 | 8.6 | S | AAVSO | 6.4 | 4 | 0.43 | 292 | 0.080 | B | | 20 | | | | Zanotta,M | C |
| 18.70 | 801886 | 10.1 | S | CZ ORI | 1 | 5 | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | |
| 18.85 | 801887 | 9.4 | S | AA | 1.8 | 5 | 0.17 | 270 | 0.317 | N | 5 | 49 | 6.1 | Y | | Pearce,A | |

NOTE A Haze.

NOTE B Faintest star on sequence 10.6 mag. Excellent conditions.

NOTE C I found a disk-like central condensation and a star-like nuclear region at 60x with my 0.305 meter f/5 Newtonian telescope.

DATE: 19 SEP 1985

DATE: 19 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes | |
|----------|--------|------|----|---------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------------|--|
| 19.00 | 801888 | 8.2 | B | M | | | | | 0.065 | N | 7.7 | 33 | | | | Serov,V | | |
| 19.069 | 801889 | 8.7 | S | | 6.2 | 4 | | | 0.10 | B | | 14 | 6.0 | Y | 1 | Hasubick,W | | |
| 19.073 | 801890 | 8.7 | S | 60 | 7.1 | 3 | | | 0.100 | B | | 14 | 5 | Y | 1 | Linder,J | | |
| 19.097 | 801891 | 9.3 | B | SAOSA74 | 3.8 | 2 | | | 0.125 | R | 6 | 35 | | Y | 1 | Guthier,O | A | |
| 19.10 | 801892 | 9.3 | S | CZ ORI | 8 | 3 | | | 0.15 | R | 8 | 34 | 6 | C | Y | 1 | Aerts,L | |
| 19.122 | 801893 | 8.8 | S | SAO | 7.1 | 3 | | | 0.140 | SN | 3.6 | 25 | 5 | Y | 1 | Linder,J | | |
| 19.125 | 801894 | 8.9 | S | CZ ORI | 5 | 3 | 0.20 | 282 | 0.080 | B | | 10 | | Y | 1 | Mikuz,H | B | |
| 19.128 | 801895 | 9.5 | B | | 3.0 | 4 | 0.10 | 277 | 0.150 | R | 15 | 56 | 6.5 | Y | 2 | Zische,E | | |
| 19.14 | 801896 | 9.3 | S | CZ ORI | 3 | 6 | | | 0.100 | B | | 25 | 6 | C | Y | 1 | van Loo,F.R | |
| 19.358 | 801897 | 10.1 | S | CZ ORI | 3.2 | 5 | 0.06 | 265 | 0.15 | R | 5 | 62 | 6.3 | Y | 3 | Morrison,W | C | |
| 19.71 | 801898 | 10.0 | S | CZ ORI | 1.4 | 5 | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | D | |

NOTE A Coma strongly elliptical. (Translated by IHW staff. Ed.)
 NOTE B Faintest star on sequence 10.6 mag. Excellent conditions.
 NOTE C Clock face method used to estimate tail PA.
 NOTE D Thin cloud?

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|-------|-----|----|--------|------|-----|------|-------------|-------|
| 19.347 | 803047 | | 0.254 | N | 6 | 185 | 16 | 6.5 | 1 | Troiani,D.M | A |

NOTE A DC = 5.5 [sic], tail PA 260 deg.

DATE: 20 SEP 1985

DATE: 20 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|--------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 20.111 | 801899 | 8.6 | B | | 2.0 | 1 | | | 0.110 | R | 6.8 | 47 | | Y | | Lipski,P | A |
| 20.122 | 801900 | 8.8 | S | CZ ORI | 5 | 4 | | | 0.080 | B | | 10 | | Y | 1 | Mikuz,H | B |
| 20.125 | 801901 | 8.8 | S | | 5.7 | 4 | | | 0.10 | B | | 14 | 6.0 | Y | 1 | Hasubick,W | |
| 20.130 | 801902 | 10.6 | B | | 2.5 | 5 | | | 0.40 | C | 15 | 120 | 5.5 | N | 3 | Zische,E | C |
| 20.135 | 801903 | 9.6 | S | 60 | | 1 | | | 0.113 | N | 8 | 22 | 5.5 | Y | 1 | Schambeck,C | |
| 20.45 | 801904 | 8.5 | S | AA | 6.4 | 2 | | | 0.080 | B | | 20 | 6.5 | Y | 6 | Morris,C.S | D |
| 20.47 | 801905 | 8.5 | M | AA | 2.1 | 5 | 0.25 | 265 | 0.256 | N | 4.5 | 45 | 6.5 | Y | 6 | Morris,C.S | E |
| 20.72 | 801906 | 10.1 | S | CZ ORI | 1 | 4 | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | F |

NOTE A (Observer gave limit as 10.5. Ed.)

NOTE B Faintest star on sequence 10.6 mag. Excellent conditions.

NOTE C Site - Bautzen.

NOTE D CZ ORI chart also used as comparison star source. Hint of tail.

NOTE E CZ ORI chart also used as comparison star source. Coma had bulge toward the south. Tail boundary sharper on north side.

NOTE F Clear.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|-------|-----|----|--------|------|-----|------|-------------|-------|
| 20.333 | 803048 | | 0.254 | N | 6 | 185 | 23 | 6.6 | 1 | Troiani,D.M | A |

NOTE A DC = 6, tail PA 260 deg. Faint envelope around front of coma at PA 278 deg.

DATE: 21 SEP 1985

DATE: 21 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | m1 | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|--------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 21.40 | 801907 | 8.8 | S | AA | 4 | 3 | | | 0.229 | R | 12 | 86 | | | | Green,D.W.E | A |
| 21.47 | 801908 | 8.5 | S | AA | 6.4 | 2 | | | 0.080 | B | | 20 | 6.5 | Y | 6 | Morris,C.S | B |
| 21.47 | 801909 | 8.5 | M | | 2.1 | 5 | 0.20 | 283 | 0.080 | B | | 20 | 6.5 | Y | 6 | Morris,C.S | C |
| 21.4944 | 801910 | 8.7 | S | SAO | 4 | 6 | 0.17 | 264 | 0.254 | N | 3.8 | 32 | | | 1 | Machholz,D | |
| 21.71 | 801911 | 10.1 | S | CZ ORI | 1 | 4 | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | |

NOTE A Coma diameter approximate.

NOTE B CZ ORI chart also used as comparison star source.

NOTE C Comet has parabolic shape. Tail is very faint.

DATE: 22 SEP 1985

DATE: 22 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes | |
|----------|--------|-----|----|--------|-----------|-----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|------------|---|
| 22.06 | 801912 | 8.6 | S | | 3.0 | 3 | 0.33 | 281 | 0.400 | N | 5 | 81 | 6.0 | Y | 2 | Merlin,J.C | | |
| 22.080 | 801913 | 8.8 | S | | 5.0 | 3 | 0.23 | 280 | 0.080 | B | | 15 | 6.3 | Y | 4 | Haver,R | A | |
| 22.083 | 801914 | 9.5 | S | | 5 | | | | 0.114 | N | 8.7 | 50 | 6.0 | Y | 2 | Villa,M | | |
| 22.118 | 801915 | 9.8 | S | 60 | 4.7 | 3.8 | 3 | | 0.140 | SN | 3.6 | 25 | 5.0 | Y | 3 | Bottger,B | | |
| 22.128 | 801916 | 8.8 | S | CZ ORI | 6 | 1 | | | 0.080 | B | | 10 | | Y | 1 | Mikuz,H | B | |
| 22.132 | 801917 | 8.9 | B | V MON | 1.8 | 3 | 0.05 | 25 | 0.330 | N | 4.5 | 59 | 6.0 | Y | 1 | Castino,R | | |
| 22.44 | 801918 | 8.8 | S | CZ ORI | 6.4 | 1 | | | 0.080 | B | | 20 | 6.5 | Y | 6 | Morris,C.S | | |
| 22.44 | 801919 | 8.7 | M | CZ ORI | 2.1 | 5 | 0.10 | 260 | 0.256 | N | 4.5 | 45 | 6.5 | Y | 6 | Morris,C.S | C | |
| 22.4431 | 801920 | 8.7 | S | SAO | 3 | 7 | 0.17 | 287 | 0.254 | N | 3.8 | 32 | | | 1 | Machholz,D | | |
| 22.542 | 801921 | 8.3 | ? | | 2 | 5 | 0.05 | 260 | 0.330 | N | 4.5 | 75 | | Y | 3 | Fabre,R | D | |
| 22.785 | 801922 | 8.9 | S | | | | | | 0.152 | N | 5 | 29 | 5 | T | Y | 1 | Seargent,D | E |

NOTE A Diffuse.
 NOTE B Faintest star on sequence 10.6 mag. Excellent conditions.
 NOTE C Tail PA uncertain.
 NOTE D (Observer gives limit as 14.4. Ed.)
 NOTE E To light. [sic] (Observer indicated uncertainty in limiting magnitude. Ed.)

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|-----|--------|------|-----|------|-------------|-------|
| 22.078 | 803049 | 0.06 | 0.40 | N | 5 | 254 | 15 | 6.0 | 2 | Merlin,J.C | A |
| 22.543 | 803050 | 2.0 | 0.33 | N | 4.5 | 75,125 | 15 | | 3 | Fabre,R | B |

NOTE A Tail at PA 281 deg., jet at PA 247 deg., jet at PA 290 deg., jet at PA 355 deg., very diffuse. Structures at PA 247 and PA 290 are possible tail streamers.
 NOTE B Tail PA 260 deg. (Observer gave limit as 14.4. Ed.)

DATE: 23 SEP 1985

DATE: 23 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|---------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|
| 23.083 | 801923 | 10.0 | S | SAOGA74 | 5 | 3 | | | 0.114 | N | 8.7 | 50 | 6.0 | Y | 2 | Fabrizio,M |
| 23.156 | 801924 | 9.5 | B | SAOGA74 | 4.1 | 6 | 0.2 | 80 | 0.125 | R | 6 | 35 | | Y | 1 | Guthier,O |
| 23.83 | 801925 | 9.4 | S | AAVSO | 2 | 5 | 0.15 | 264 | 0.410 | N | 4.2 | 86 | 6.5 | Y | | Clark,M |
| 23.85 | 801926 | 9.5 | S | AA | 1.5 | 5 | 0.15 | 264 | 0.317 | N | 5 | 49 | 6.2 | Y | | Pearce,A |

DATE: 24 SEP 1985

DATE: 24 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | m1 | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|--------|-----------|-----|------|------|-------|-----|------|-----|------|----|------|-------------|-------|
| 24.00 | 801927 | 8.2 | B | M | | | | | 0.065 | N | 7.7 | 33 | | | | Serov,V | |
| 24.05 | 801928 | 10.3 | B | M | | | | | 0.050 | B | | 7 | | | | Mormil,V | |
| 24.05 | 801929 | | | | 3 | | 0.1 | | 0.160 | N | | 50 | | | | Mormil,V | |
| 24.11 | 801930 | 8.6 | S | | 3.0 | 3 | 0.10 | 268 | 0.400 | N | 5 | 81 | 5.5 | Y | 2 | Merlin,J.C | |
| 24.125 | 801931 | 9.7 | B | SA 74 | 6.0 | 5.3 | 2 | | 0.125 | R | 6 | 35 | | Y | 1 | Guthier,O | A |
| 24.17 | 801932 | 9.6 | S | SU TAU | 2 | | 2 | 0.05 | 0.250 | N | 10.0 | 100 | 5.5C | Y | 1 | van Loo,F.R | |
| 24.17 | 801933 | 9.6 | S | SU TAU | 2 | | 2 | 0.05 | 0.250 | N | 10 | 100 | 5.5C | Y | 1 | van Loo,F.R | |
| 24.441 | 801934 | 8.5 | S | | 6 | | 0.17 | 260 | 0.444 | N | 4.4 | 221 | 5.5 | Y | 1 | Glassett,W | |

NOTE A Very diffuse, elliptical. (Translated by IHW staff. Ed.)

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|----|--------|------|-----|------|-------------|-------|
| 24.120 | 803051 | 0.05 | 0.40 | N | 5 | 254 | 15 | 5.5 | 2 | Merlin,J.C | A |

NOTE A Tail at PA 268 deg., jet at PA 220 deg., faint & diffuse, glimpsed; jet at PA 40 deg., faint & diffuse, glimpsed; jet at about PA 310 deg., very diffuse. Structures at PA 220 and about PA 310 are possible tail streamers.

DATE: 25 SEP 1985

DATE: 25 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 25.05 | 801935 | 10.4 | B | M | | | | | 0.050 | B | | 7 | | | | Mormil,V | |
| 25.05 | 801936 | | | | 3 | | | | 0.160 | N | | 50 | | | | Mormil,V | |
| 25.135 | 801937 | 8.9 | S | | 4.0 | 2 | 0.20 | 295 | 0.080 | B | | 15 | 6.6 | Y | 4 | Haver,R | A |
| 25.15 | 801938 | 9.0 | S | AAVSO | 2.1 | 4 | | | 0.305 | N | 5.0 | 60 | | | | Zanotta,M | B |
| 25.354 | 801939 | 10.6 | S | V MON | 2.1 | 4 | | | 0.15 | R | 5 | 62 | 6.5 | Y | 3 | Morrison,W | |
| 25.4444 | 801940 | 9.1 | S | SAO | 3 | 7 | 0.08 | 272 | 0.254 | N | 3.8 | 32 | | | 1 | Machholz,D | |

NOTE A Diffuse.

NOTE B The sky wasn't very good. The observation was extremely troubled by the proximity of a bright field star.

DATE: 26 SEP 1985

DATE: 26 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|-----|----|-------|-----------|----|------|-----|-------|-----|------|-----|-----|----|------|-------------|
| 26.00 | 801941 | 8.1 | B | M | | | | | 0.065 | N | 7.7 | 33 | | | | Serov,V |
| 26.12 | 801942 | 8.9 | S | S MON | 4 | 1 | | | 0.080 | B | | 20 | 6.5 | Y | 2 | Bouma,R,J |
| 26.13 | 801943 | 9.6 | S | V MON | | 4 | 0.17 | | 0.203 | SC | 10.0 | 80 | 6 | Y | 3 | Comello,G |
| 26.19 | 801944 | 8.9 | S | AAVSO | 3.9 | 2 | 0.20 | 281 | 0.080 | B | | 20 | | | 1 | Keitch,G,S |
| 26.21 | 801945 | 9.6 | S | V MON | | 3 | 0.17 | | 0.203 | SC | 10 | 80 | 6 | Y | 3 | Comello,G |

DATE: 27 SEP 1985

DATE: 27 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 27.06 | 801946 | 10.5 | B | M | | | | | 0.050 | B | | | 7 | | | Mormil,V | |
| 27.06 | 801947 | | | | 3 | | | | 0.160 | N | | | 50 | | | Mormil,V | |
| 27.115 | 801948 | 9.0 | B | | 3.0 | 3 | | | 0.110 | R | 6.8 | 19 | | Y | | Lipski,P | A |

NOTE A Round. (Observer gave limit as 12.2. Ed.)

DATE: 28 SEP 1985

DATE: 28 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|-----|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|
| 28.00 | 801949 | 8.0 | B | M | | | | | 0.065 | N | 7.7 | 33 | | | | Serov,V |

DATE: 30 SEP 1985

DATE: 30 SEP 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|-----|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|
| 30.00 | 801950 | 8.0 | B | M | | | | | 0.065 | N | 7.7 | 33 | | | | Serov,V |

DATE: 1 OCT 1985

DATE: 1 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | ACN# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-------|----|-------|-----------|----|------|----|-------|-----|----|-----|-----|----|------|-------------|-------|
| 1.70 | 801951 | 11.6: | S | RASNZ | | | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | A |

NOTE A Clear - moon 17 days.

DATE: 2 OCT 1985

DATE: 2 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-------|----|-------|-----------|----|------|----|-------|-----|----|-----|-----|----|------|-------------|-------|
| 2.69 | 801952 | 11.6: | S | RASNZ | | | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | A |

NOTE A Clear - moon 18 days.

DATE: 7 OCT 1985

DATE: 7 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-------|----|-------|-----------|----|------|----|-------|-----|-----|-----|------|----|------|-------------|-------|
| 7.376 | 801953 | 11.9 | S | V MON | 0.7 | 4 | | | 0.445 | N | 4.5 | 167 | 5.5M | Y | 3 | Morrison,W | A |
| 7.68 | 801954 | 12.1: | S | RASNZ | 1 | 2 | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | B |

NOTE A Involved with stars of cluster Messier 50.

NOTE B Clear - moon 23 days.

DATE: 8 OCT 1985

DATE: 8 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|----|-----|-----|----|------|-------------|-------|
| 8.36 | 801955 | 10.0 | S | AAVSO | 2.1 | 2 | | | 0.317 | N | 6 | 68 | | | | Bortle, J.E | A |

NOTE A Very vague object, little better seen than P/Halley but larger in size. Circular coma shows little indication of condensing toward center. Moonlight.

DATE: 10 OCT 1985

DATE: 10 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|----|-----|-----|----|------|-------------|
| 10.83 | 801956 | 10.3 | S | | 0.8 | 5 | | | 0.317 | N | 5 | 63 | 6.3 | Y | | Pearce,A |

DATE: 11 OCT 1985

DATE: 11 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 11.045 | 801957 | 9.6 | S | | 4.5 | 2 | | | 0.080 | B | | 15 | 6.2 | Y | 4 | Haver,R | A |
| 11.4924 | 801958 | 9.8 | S | SAO | 4 | 2 | 7 | | 0.254 | N | 3.8 | 64 | | | 1 | Machholz,D | B |
| 11.80 | 801959 | 10.3 | S | | 0.9 | | 6 | | 0.317 | N | 5 | 63 | 6.2 | Y | | Pearce,A | |

NOTE A Very diffuse.

NOTE B Coma shape is 2x4 arc min. elongated E-W.

DATE: 12 OCT 1985

DATE: 12 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 12.06 | 801960 | 9.4 | S | | 2.0 | 2 | 0.08 | 274 | 0.400 | N | 5 | 81 | 5.5 | Y | 2 | Merlin,J.C | A |
| 12.36 | 801961 | 8.8 | S | AA | 5.2 | 3 | | | 0.203 | N | 7 | 55 | | | | Green,D.W.E | B |
| 12.367 | 801962 | 10.8 | S | V MON | 2.1 | 2 | | | 0.15 | R | 5 | 62 | 6.4 | Y | 3 | Morrison,W | |
| 12.37 | 801963 | 8.9 | S | AA | 8.4 | 2 | | | 0.080 | B | | 20 | | | | Green,D.W.E | B |
| 12.39 | 801964 | 10.0 | S | AAVSO | 1.4 | 6 | 0.1 | 270 | 0.317 | N | 6 | 68 | | | | Bortle,J.E | C |
| 12.47 | 801965 | 9.6 | M | V MON | 1.5 | 7 | 0.13 | 270 | 0.256 | N | 4.5 | 67 | 7.0 | Y | 1 | Morris,C.S | D |

NOTE A Low altitude.

NOTE B Coma diameter approximate.

NOTE C With 68x coma consists of a small circular, well condensed feature superimposed on a bright wedge or fan-shaped envelope opening toward the due west (270 deg.). Outer portion of coma very faint and best seen with averted vision. Fan shaped envelope much brighter than this. Fan is about 35 deg. in PA wide. Lumicon "Comet Filter" enhances brightness of comet.

NOTE D Coma has parabolic shape. Tail PA uncertain.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|----|--------|------|-----|------|-------------|-------|
| 12.057 | 803052 | 0.18 | 0.40 | N | 5 | 81 | 15 | 5.5 | 2 | Merlin,J.C | A |

NOTE A Jet at PA 6 deg.; tail at PA 274 deg.

DATE: 13 OCT 1985

DATE: 13 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 13.14 | 801966 | 9.4 | S | | 2.0 | 3 | 0.08 | 267 | 0.400 | N | 5 | 81 | 5.5 | Y | 2 | Merlin,J.C | A |
| 13.15 | 801967 | 10.1 | S | AAVSO | 1.7 | 6 | 0.14 | 262 | 0.305 | N | 5.0 | 60 | | | | Zanotta,M | B |
| 13.45 | 801968 | 9.6 | M | V MON | 1.7 | 7 | 0.12 | 260 | 0.256 | N | 4.5 | 67 | 6.5 | Y | 1 | Morris,C.S | C |
| 13.54 | 801969 | 9.7 | M | Z PUP | | | | | 0.200 | N | 6 | 61 | 6.5 | Y | 2 | Hale,A | |
| 13.69 | 801970 | 11.4 | S | RASNZ | 1 | 6 | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | D |

NOTE A Low altitude.

NOTE B The coma appeared fan-shaped on PA 262 deg. I saw an extremely strong and well defined central condensation (diameter 0.2, DC 7/) asymmetrically placed in the comet's coma (it was shifted on PA 82 deg.) 94x. [sic] The tail was straight, narrow, (but not as narrow as in July, August, and September) and easily visible.

NOTE C Tail PA uncertain.

NOTE D Clear. Coma diameter approximate.

SUB-NETWORK: DRAWING

| Date(UT) | AON# | Scale | Ap | Ins | f/ | Pwr(s) | DurM | Lim | Site | Observer(s) | Notes |
|----------|--------|-------|------|-----|----|--------|------|-----|------|-------------|-------|
| 13.141 | 803053 | 0.17 | 0.40 | N | 5 | 81 | 15 | 5.5 | 2 | Merlin,J.C | A |

NOTE A Jet at PA 87 deg., sunward spike, tail at PA 267 deg.

DATE: 14 OCT 1985

DATE: 14 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|---------------|-------|
| 14.18 | 801971 | 9.4 | S | AAVSO | 2.6 | 4 | | | 0.298 | N | 5.0 | 62 | | | 1 | Keitch,G.S | |
| 14.762 | 801972 | 10.2 | S | 109 | 0.7 | 2 | | | 0.150 | N | 8.0 | 64 | | Y | 1 | Tregaskis,T.B | A |
| 14.82 | 801973 | 10.4 | S | | 1.2 | 6 | 0.18 | 279 | 0.317 | N | 5 | 63 | 6.2 | Y | | Pearce,A | |

NOTE A Clear. Comet over 11 mag. star. (Observer gave limit as 12.7. Ed.)

DATE: 15 OCT 1985

DATE: 15 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | m1 | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|
| 15.4750 | 801974 | 10.0 | S | SAO | 3.0 | 7 | | | 0.254 | N | 3.8 | 32 | | | 1 | Machholz,D |
| 15.80 | 801975 | 10.9 | S | AAVSO | 2 | 3 | | | 0.13 | N | 6.3 | 64 | 5.5 | Y | | Hayashi,A |

DATE: 16 OCT 1985

DATE: 16 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|----|-----|-----|----|------|-------------|-------|
| 16.67 | 801976 | 10.8 | S | RASNZ | 0.8 | 5 | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | A |

NOTE A Clear.

DATE: 17 OCT 1985

DATE: 17 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 17.46 | 801977 | 10.2 | M | Z PUP | | | | | 0.200 | N | 6 | 61 | 6.5 | Y | 2 | Hale,A | |
| 17.5313 | 801978 | 10.3 | S | SAC | 1.5 | 7 | | | 0.254 | N | 3.8 | 64 | | | 1 | Machholz,D | |
| 17.68 | 801979 | 10.6 | S | RASNZ | 2 | 6 | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | A |

NOTE A Coma diameter approximate.

DATE: 18 OCT 1985

DATE: 18 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | ACN# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 18.11 | 801980 | 10.3 | S | AAVSO | 1.8 | 5 | 0.11 | 265 | 0.254 | N | 4.5 | 46 | | | | Zanotta,M | |
| 18.67 | 801981 | 10.6 | S | RASNZ | 1.5 | 6 | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | A |

NOTE A Fan shaped coma and central condensation. The central condensation was "arrow point"-like, with diameter 0.5 arc min.

DATE: 19 OCT 1985

DATE: 19 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|--------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 19.44 | 801982 | 10.2 | M | Z PUP | 1.8 | 7 | 0.08 | 290 | 0.256 | N | 4.5 | 67 | 7 | Y | 6 | Morris,C.S | A |
| 19.68 | 801983 | 10.6 | S | RASNZ | 1.5 | 5 | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | |
| 19.84 | 801984 | 10.2 | S | SU TAU | 1.8 | 6 | 0.25 | 83 | 0.410 | N | 4.2 | 86 | 6.5 | Y | | Clark,M | |

NOTE A Tail PA uncertain.

DATE: 20 OCT 1985

DATE: 20 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-------|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 20.167 | 801985 | 11.5: | B | | 1.5 | 2 | | | 0.250 | N | 6.0 | 75 | | Y | 1 | Guthier,O | A |

NOTE A Difficult to find.

DATE: 21 OCT 1985

DATE: 21 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 21.370 | 801986 | 10.9 | S | Z PUP | 1.9 | | | | 0.15 | R | 5 | 62 | 6.4 | Y | 3 | Morrison,W | |
| 21.396 | 801987 | 11.2 | S | Z PUP | 0.9 | 4 | 0.02 | 300 | 0.445 | N | 4.5 | 167 | 6.4 | Y | 3 | Morrison,W | A |

NOTE A Clock face method used to estimate tail PA.

DATE: 22 OCT 1985

DATE: 22 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|-------|----|-------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 22.17 | 801988 | 10.5 | S | AAVSO | 1.9 | 3 | | | 0.254 | N | 4.5 | 91 | | | | Zanotta,M | A |
| 22.181 | 801989 | 12.0: | B | | 2.0 | 1 | | | 0.250 | N | 6.0 | 75 | | Y | 1 | Guthier,O | B |
| 22.375 | 801990 | 11.2 | M | Z PUP | 1.0 | 5 | 0.07 | 283 | 0.254 | N | 5.6 | 120 | 6.3 | Y | 1 | Knight,S | |
| 22.81 | 801991 | 11.2 | S | AAVSO | 2 | 3 | | | 0.13 | N | 6.3 | 44 | 5.5 | Y | | Hayashi,A | |

NOTE A Bad sky. (The observer placed an "*" on his report form in front of his magnitude estimate: &10.5, probably indicating approximate. Ed.)

NOTE B Very diffuse.

DATE: 23 OCT 1985

DATE: 23 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|----------|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 23.10 | 801992 | 10.3 | S | AAVSO | 1.5 | 4 | 0.06 265 | 0.254 | N | 4.5 | 91 | | | | Zanotta,M | A |
| 23.38 | 801993 | 10.0 | S | AAVSO | 2.0 | 4 | 270 | 0.317 | N | 6 | 68 | | | | Bortle,J.E | B |
| 23.39 | 801994 | 9.4 | S | LNES | 4.4 | 4 | | 0.203 | N | 6 | 116 | | | | Green,D.W.E | C |
| 23.39 | 801995 | 9.5 | S | LNES | 5.3 | 3 | | 0.203 | N | 6 | 38 | | | | Green,D.W.E | C |
| 23.81 | 801996 | 11.4 | S | AAVSO | 2 | 2 | | 0.13 | N | 6.3 | 64 | 5.0 | Y | | Hayashi,A | |

NOTE A At 91x I found the comet's coma and central condensation elongated on PA 265 deg. The tail was at least 4 arc min. long, straight and quite broad where it joined coma.

NOTE B Tail PA uncertain. Circular coma suddenly condensed near the center with very diffuse boundaries. At 68x area of significant condensation is 0.5 arc min. in diameter (entire coma 2.0 arc min.). At 110x a tiny knot of bright material noted at coma's center, possibly displaying a very short fan of material toward the due west and not more than 0.5 arc min. in length. This feature perhaps represents the old fan tail seen previously.

NOTE C Coma diameter, approximate.

DATE: 24 OCT 1985

DATE: 24 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 24.41 | 801997 | 9.6 | S | LNES | 5.9 | 3 | | | 0.203 | N | 6 | 38 | | | | Green,D.W.E | A |
| 24.83 | 801998 | 11.3 | S | AAVSO | 2 | 2 | | | 0.13 | N | 6.3 | 64 | 6.0 | Y | | Hayashi,A | |

NOTE A Coma diameter approximate.

DATE: 25 OCT 1985

DATE: 25 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|-------|-----------|----|------|----|------|-----|----|-----|-----|----|------|-------------|
| 25.379 | 801999 | 10.8 | S | Z PUP | 1.7 | 2 | | | 0.15 | R | 5 | 62 | 6.2 | Y | 3 | Morrison,W |

DATE: 26 OCT 1985

DATE: 26 OCT 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|-----|-------|-----|-----|-----|-----|----|------|-------------|-------|
| 26.20 | 802000 | 10.0 | S | | 2.0 | 3 | | | 0.400 | N | 5 | 81 | 5.0 | Y | 2 | Merlin,J.C | A |
| 26.36 | 802001 | 9.9 | S | LNES | 5.0 | 2 | | | 0.203 | N | 6 | 38 | | | | Green,D.W.E | B |
| 26.5208 | 802002 | 10.3 | S | SAO | 1.5 | 5 | 0.04 | 270 | 0.254 | N | 3.8 | 64 | | | 1 | Machholz,D | |

NOTE A Very low altitude.

NOTE B Coma diameter approximate.

DATE: 4 NOV 1985

DATE: 4 NOV 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | ACN# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|----|-----|-----|----|------|-------------|-------|
| 4.66 | 802003 | 11.1 | S | Z PUP | | | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | A |

NOTE A Moon 21 days.

DATE: 7 NOV 1985

DATE: 7 NOV 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|----|-----|-----|----|------|-------------|-------|
| 7.65 | 802004 | 12.0 | S | 2 PUP | | 1 | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | A |

NOTE A Comet among faint stars.

DATE: 8 NOV 1985

DATE: 8 NOV 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|----|-----|-----|----|------|-------------|-------|
| 8.66 | 802005 | 11.6 | S | Z PUP | | 4 | | | 0.317 | N | 5 | 86 | | Y | 1 | Jones,A | A |

NOTE A Twilight.

DATE: 9 NOV 1985

DATE: 9 NOV 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|--------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|
| 9.73 | 802006 | 11.2 | S | SU TAU | 0.8 | 3 | 0.08 | 85 | 0.410 | N | 4.2 | 86 | 6.6 | Y | | Clark,M |

DATE: 11 NOV 1985

DATE: 11 NOV 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|-------|-----------|----|------|----|------|-----|-----|-----|-----|----|------|-------------|
| 11.79 | 802007 | 11.5 | S | AAVSO | 1.5 | 3 | | | 0.13 | N | 6.3 | 64 | 5.5 | Y | | Hayashi,A |

DATE: 13 NOV 1985

DATE: 13 NOV 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|-------|-----------|----|------|----|------|-----|-----|-----|-----|----|------|-------------|
| 13.77 | 802008 | 11.6 | S | AAVSO | 1.5 | 3 | | | 0.13 | N | 6.3 | 64 | 6.0 | Y | | Hayashi,A |

DATE: 16 NOV 1985

DATE: 16 NOV 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | m1 | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|--------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|
| 16.76 | 802009 | 11.7 | S | SU TAU | 1 | 2 | 0.03 | 90 | 0.410 | N | 4.2 | 86 | 6.4 | Y | | Clark,M |

DATE: 17 NOV 1985

DATE: 17 NOV 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|
| 17.52 | 802010 | 11.3 | S | Z PUP | | | | | 0.200 | N | 6 | 122 | 6.5 | Y | 2 | Hale,A |
| 17.75 | 802011 | 11.8 | S | AAVSO | 1.5 | 2 | | | 0.13 | N | 6.3 | 64 | 5.5 | Y | | Hayashi,A |

DATE: 20 NOV 1985

DATE: 20 NOV 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | ACN# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|-----|-----|-----|----|------|-------------|
| 20.63 | 802012 | 11.0 | S | RASNZ | 1.5 | 5 | | | 0.317 | N | 5 | 86 | 5.8 | Y | 1 | Jones,A |
| 20.75 | 802013 | 12.0 | S | AAVSO | 1 | 3 | | | 0.13 | N | 6.3 | 64 | 5.5 | Y | | Hayashi,A |

DATE: 5 DEC 1985

DATE: 5 DEC 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|----|-----|-----|----|------|-------------|
| 5.57 | 802014 | 12.1 | S | RASNZ | 1.4 | 4 | | | 0.317 | N | 5 | 86 | 6.0 | Y | 1 | Jones,A |

DATE: 9 DEC 1985

DATE: 9 DEC 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | ACN# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|----|-----|-----|----|------|-------------|-------|
| 9.48 | 802015 | 12.8 | S | RASNZ | 0.8 | 1 | | | 0.317 | N | 5 | 86 | 6.0 | Y | 1 | Jones,A | A |

NOTE A Clear.

DATE: 10 DEC 1985

DATE: 10 DEC 1985

NETWORK: AMATEUR OBSERVATION

SUB-NETWORK: VISUAL APPEARANCE

| Date(UT) | AON# | ml | MM | Chart | Coma size | DC | Tail | PA | Ap | Ins | f/ | Pwr | Lim | DA | Site | Observer(s) | Notes |
|----------|--------|------|----|-------|-----------|----|------|----|-------|-----|----|-----|-----|----|------|-------------|-------|
| 10.45 | 802016 | 12.9 | S | RASNZ | | 1 | | | 0.317 | N | 5 | 86 | 6.0 | Y | 1 | Jones,A | A |

NOTE A Clear.